MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

OCTOBER 2019 MEETING AGENDA

October 7-10, 2019
Durham Convention Center
301 W. Morgan St.
Durham, NC 27701
Telephone 919-956-9404

Monday, October 7th

9:00 a.m. – 9:30 a.m.	**Executive Committee (CLOSED SESSION)** – Review and approve changes to SOPP
9:30 a.m. – 12:00 p.m.	**Executive Committee (Tab 1)** – Review Progress on 2019 Implementation Plan – Develop recommendations for 2020 priorities
12:00 p.m. - 1:00 p.m.	**Lunch**
1:00 p.m.	**Council Convenes**
1:00 p.m. - 1:30 p.m.	**Monkfish Specifications (Tab 2)** – Summary of Operational Assessment – Review SSC, Plan Development Team, Advisory Panel, and staff recommendations and adopt specifications for 2020-2022
1:30 p.m. - 2:00 p.m.	**Spiny Dogfish Specifications (Tab 3)** – Review, SSC, Monitoring Committee, Advisory Panel, and staff recommendations for 2020 specifications – Recommend any changes if necessary
2:00 p.m. - 3:00 p.m.	***Illex* Permitting and MSB Goals and Objectives Amendment (Tab 4)** – Review Committee recommendations and provide direction to staff on Amendment development
3:00 p.m. - 3:30 p.m.	***Illex* In-Year Quota Adjustment Working Group (Tab 5)** – Review Working Group Terms of Reference
3:30 p.m. - 5:00 p.m.	**2020 - 2024 Comprehensive Research Priorities (Tab 6)** – Review and provide feedback on draft research priorities
5:00 p.m.	**Council Adjourns**

Tuesday, October 8th

9:00 a.m.	**Council Meeting with the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass and Bluefish Boards**
9:00 a.m. – 10:00 a.m.	**Summary of Operational Assessments for Scup, Black Sea Bass, and Bluefish (Tab 7)** *NEFSC Staff*
10:00 a.m. – 11:30 a.m.	**Bluefish Specifications (Tab 8)** – Review SSC, Monitoring Committee, Advisory Panel, and staff recommendations for 2020-2021 specifications – Adopt revised specifications for 2020 and new specifications for 2021
11:30 a.m. –12:30 p.m.	**Bluefish Allocation Amendment (Tab 9)** – Discuss current status of the Bluefish Allocation Amendment – Review the updated action plan
12:30 p.m. – 1:30 p.m.	**Lunch**
12:30 p.m. – 12:35 p.m.	**ASMFC Bluefish FMP Review (BOARD ONLY)**
1:30 p.m. – 2:30 p.m.	**Scup Commercial Discards Report (Tab 10)** – Review commercial scup discards through 2018
2:30 p.m. – 4:00 p.m.	**Scup Specifications (Tab 11)** – Review SSC, Monitoring Committee, Advisory Panel, and staff recommendations for 2020-2021 specifications – Adopt revised specifications for 2020 and new specifications for 2021
4:00 p.m. – 5:00 p.m.	**Summer Flounder Specifications (Tab 12)** – Review SSC, Monitoring Committee, Advisory Panel, and staff recommendations for 2020 specifications – Review previously implemented 2020 specifications and recommend changes if necessary
5:00 p.m.	**Council Adjourns**
5:00 p.m. – 5:15 p.m.	**ASMFC Summer Flounder and Scup FMP Reviews (BOARD ONLY)**

Wednesday, October 9th

9:00 a.m.	**Council Meeting with the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass and Bluefish Boards**

9:00 a.m. – 10:30 a.m.	**Black Sea Bass Specifications (Tab 13)** – Review SSC, Monitoring Committee, Advisory Panel, and staff recommendations for 2020-2021 specifications – Adopt revised specifications for 2020 and new specifications for 2021
10:30 a.m. – 12:00 p.m.	**Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocations (Tab 14)** – Discuss implications of revised MRIP data for sector allocations defined in FMP's – Consider initiating an amendment to address commercial and recreational allocations for all three species
12:00 p.m. - 1:00 p.m.	**Lunch**
12:00 p.m. - 12:05 p.m.	**ASMFC Black Sea Bass FMP Review (BOARD ONLY)**
1:00 p.m. - 2:30 p.m.	**Potential Black Sea Bass Commercial Amendment (Tab 15)** – Update on ASMFC discussions regarding state-by-state commercial quota allocations – Consider initiating an amendment to address black sea bass commercial state-by state allocations
2:30 p.m. – 3:00 p.m.	**Recreational Reform Initiative (Tab 16)** – Progress update on recreational management reform initiative focused on black sea bass, summer flounder, scup, and bluefish
3:00 p.m.	**ASMFC Board Adjourns / Council Convenes**
3:00 p.m. – 5:00 p.m.	**2020 - 2024 Strategic Plan (Tab 17)** – Review draft 2020-2024 Strategic Plan
5:00 p.m.	**Council Adjourns**

Thursday, October 10th

9:00 a.m.	**Council Convenes**
9:00 a.m. – 1:00 p.m.	**Business Session**
	Committee Reports (Tab 18) – SSC – Executive Committee • Review and approve SOPP recommendations
	Executive Director's Report (Tab 19) *Chris Moore*

Organization Reports

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

Liaison Reports (Tab 20)

- New England Council
- South Atlantic Council

Continuing and New Business

August 2019 Motions
The Notary Hotel - Philadelphia, PA

Strategic Plan Framework
Move to accept the vision statement, mission statement, and goals, with the staff recommendations as modified today, except under the Communication Goal, select Alternative 3.3 and replace "promotes" with "fosters."
Nowalsky / Cimino (18/1/0)
Motion carries

River Herring & Shad Update and Cap Review
Move that the Council set the (2020 RH/S) cap at 129 MT with no trigger.
Motion from Committee

Move to amend, to set the (2020 RH/s) cap at 129 MT with no trigger and initiate a river herring and shad framework action to allow the Council, to establish a long term strategy for biologically-relevant RH/S catch caps in the mackerel fishery.
Hughes/Pentony
Motion carries by consensus.

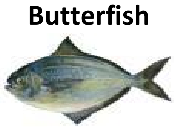
Amended Motion
Move that the Council set the (2020 RH/S) cap at 129 MT with no trigger and initiate a river herring and shad framework action to allow the Council, to establish a long-term strategy for biologically-relevant RH/S catch caps in the mackerel fishery.
Motion carries by consensus.

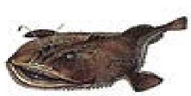
Allocation Review Criteria for All FMPs
Move that the Council support the staff recommendations regarding the MAFMC allocation review policy as modified today.
DiLernia/Elliott
Motion carries by consent with 1 abstention

Executive Director's Report
Move to initiate a Monkfish Framework Adjustment 12 to the Monkfish FMP, which will include specifications for the 2020-2022 monkfish fishing years and any associated management measures that may be needed.
Hughes/Elliott
Motion carries by consent

Stock Status of MAFMC-Managed Species

(as of 9/25/19)

SPECIES	STATUS DETERMINATION CRITERIA		Stock Status	Most Recent Assessment
	Overfishing $F_{threshold}$	**Overfished** ½ B_{MSY}		
Summer Flounder 	$F35\%_{MSP}=0.448$	63 million lbs	No overfishing Not overfished	Most recent benchmark assessment was 2018.
Scup 	$F40\%_{MSP}=0.215$	103.64 million lbs	No overfishing Not overfished	Most recent operational assessment was 2019.
Black Sea Bass 	$F40\%_{MSP}=0.46$	15.53 million lbs	No overfishing Not overfished	Most recent operational assessment was 2019.
Bluefish 	$F_{35\%SPR}=0.183$	219.05 million lbs	No overfishing Overfished	Most recent operational assessment was 2019.
***Illex* Squid (short finned)** 	Unknown	Unknown	Unknown Unknown	Most recent benchmark assessment was 2006; not able to determine current exploitation rates or stock biomass.
Longfin Squid 	Unknown	46.7 million lbs	Unknown Unknown	Most recent assessment update was 2017; not able to determine current exploitation rates.
Atlantic Mackerel 	$F_{40\%}=0.26$	217.0 million pounds	Overfishing Overfished	Most recent benchmark assessment was 2017
Butterfish 	$F_{Proxy}=2/3M$ $=0.81$	50.3 million lbs	No overfishing Not overfished	Most recent assessment update was 2017.

SPECIES	STATUS DETERMINATION CRITERIA		Stock Status	Most Recent Assessment
	Overfishing $F_{threshold}$	Overfished ½ B_{MSY}		
Surfclam 	$F/F_{threshold} = 1$[a]	$SSB/SSB_{threshold} = 1$[b]	No overfishing Not overfished	Most recent benchmark assessment was 2016.
Ocean Quahog 	$F/F_{threshold} = 1$[c]	$SSB/SSB_{threshold} = 1$[d]	No overfishing Not overfished	Most recent benchmark assessment was 2017.
Golden Tilefish 	$F_{38\%MSP}=0.310$	10.46 million lbs	No overfishing Not overfished	Most recent assessment update was 2017.
Blueline Tilefish 	Unknown	Unknown	South of Cape Hatteras: No overfishing Not overfished North of Cape Hatteras: No overfishing Not overfished	Most recent benchmark assessment was 2017.
Spiny Dogfish (Joint mgmt with NEFMC) 	$F_{MSY}=0.2439$	175.6 million lbs Female SSB	No overfishing Not overfished	Most recent assessment update was 2018.
Monkfish (Joint mgmt with NEFMC) 	NFMA & SFMA $F_{MAX}=0.2$	NFMA - 1.25 kg/tow SFMA - 0.93 kg/tow (autumn trawl survey)	Unknown Unknown	Recent benchmark failed peer review and invalidated previous 2010 benchmark assessment results. Operational assessment in 2019 used survey data to scale earlier ABC.
Chub Mackerel 	At least 3,026 MT of catch per year[e]	At least 3,026 MT of catch three years in a row[e]	No overfishing Not overfished	No stock assessment.

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

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[a] $F_{threshold}$ is calculated as 4.136 times the mean F during 1982 - 2015

[b] $SSB_{threshold}$ is calculated as $SSB_0/4$

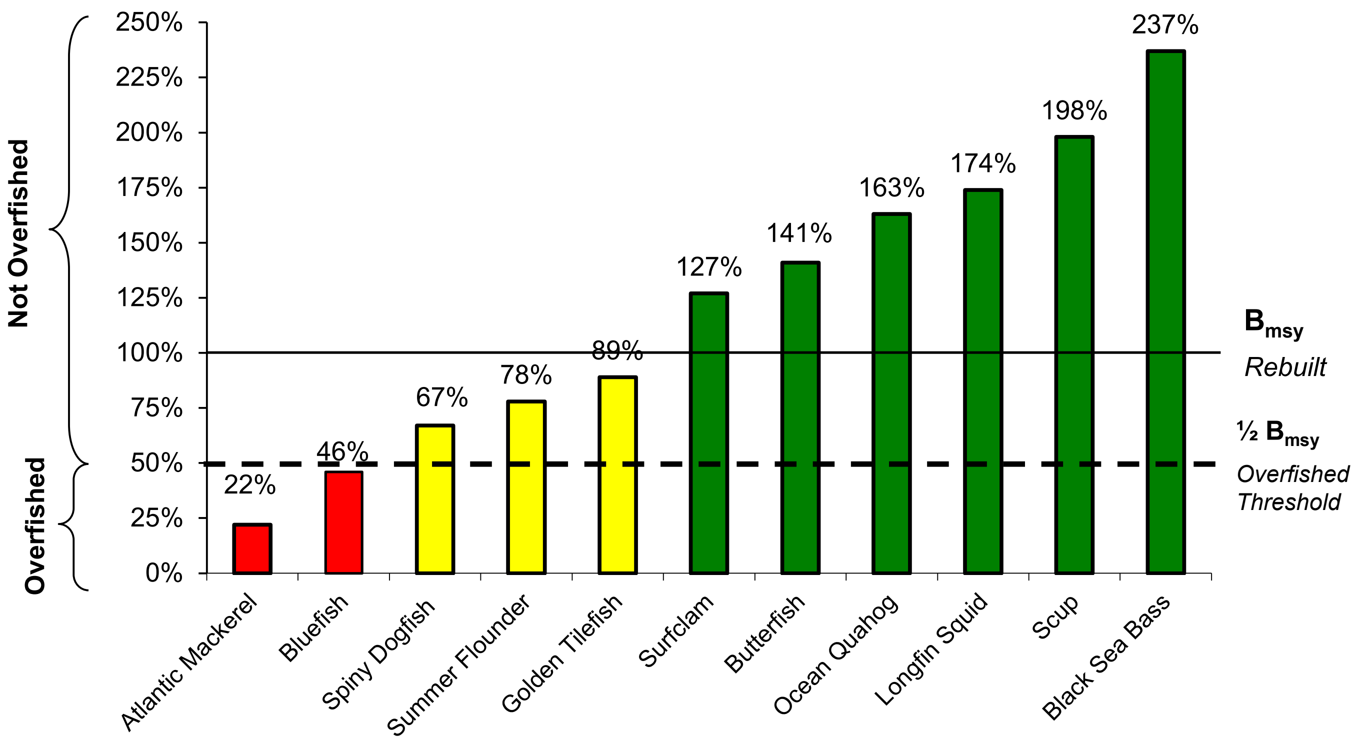
[c] $F_{threshold}$ is 0.019

[d] $SSB_{threshold}$ is calculated as $0.4*SSB_0$

[e] The Council approved these chub mackerel status determination criteria in March 2019; however, they have not yet been approved by NOAA Fisheries.

Stock Size Relative to Biological Reference Points

(as of 9/25/19)



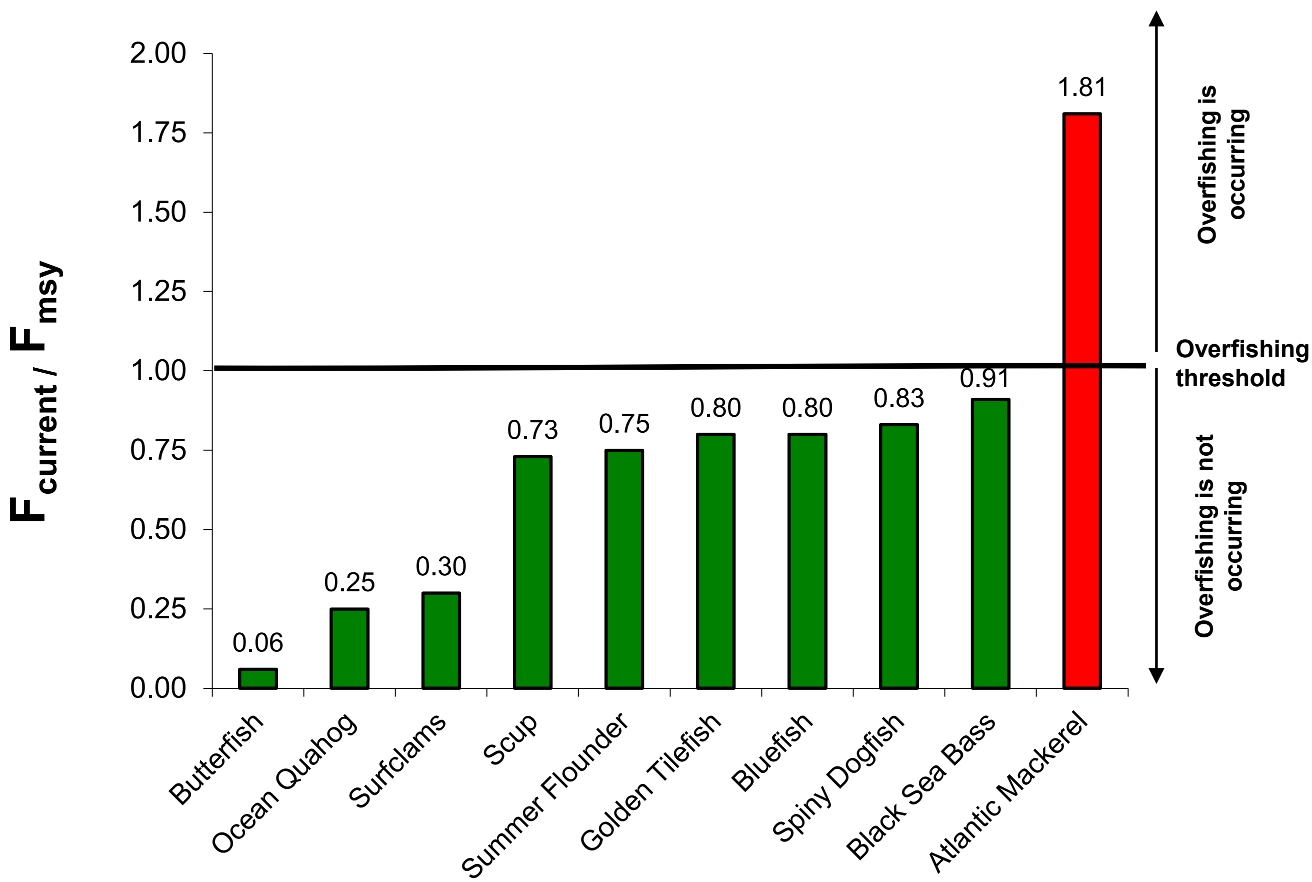
Notes:

- Unknown B_{msy} - *Illex* squid, monkfish (NFMA & SFMA), blueline tilefish (North of Cape Hatteras)
- Of the 14 stocks managed by the Council, 6 are above B_{msy}, 5 are below B_{msy}, and 3 are unknown.
- In March 2019, the Council approved an amendment with management measures for Atlantic chub mackerel. These measures have not yet been approved by NOAA Fisheries. Chub mackerel B_{msy} is unknown.

Year of data used to determine stock size	
Atlantic Mackerel	2016
Black Sea Bass	2018
Bluefish	2018
Butterfish	2016
Golden Tilefish	2016
Longfin Squid	2016
Ocean Quahog	2016
Spiny Dogfish	2018
Surfclam	2015
Scup	2018
Summer Flounder	2017

Fishing Mortality Ratios for MAFMC-Managed Species

(as of 9/25/19)



Year of data used to determine stock size	
Atlantic Mackerel	2016
Black Sea Bass	2018
Bluefish	2018
Butterfish	2016
Golden Tilefish	2016
Ocean Quahog	2016
Spiny Dogfish	2017
Surfclam	2015
Scup	2018
Summer Flounder	2017

Notes:

- Unknown fishing mortality: *Illex* squid, Longfin squid, monkfish (NFMA and SFMA), and blueline tilefish (North of Cape Hatteras).
- In March 2019, the Council approved an amendment with management measures for Atlantic chub mackerel. These measures have not yet been approved by NOAA Fisheries. The chub mackerel fishing mortality rate is unknown.

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 | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 26, 2019

To: Executive Committee

From: Chris Moore

Subject: 2020 Implementation Plan

The Executive Committee will meet on Monday, October 7 to receive an update on the 2019 Implementation Plan and discuss the 2020 Implementation Plan.

Behind this memo is an updated list of 2019 deliverables, with additions shown in blue text and deletions in red text. A list of proposed deliverables for 2020 will be posted as a supplemental item on the meeting page (http://www.mafmc.org/briefing/october-2019) and emailed to Committee members prior to the meeting.

The complete 2019 Implementation Plan and other related documents are available on the Council's website at http://www.mafmc.org/strategic-plan.

PROPOSED 2019 DELIVERABLES

This section provides an overview of deliverables expected by the end of the implementation plan period. Since many of the proposed implementation activities cannot be measured with traditional metrics, the list of deliverables establishes a mechanism for measuring the Council's progress toward achieving the goals and objectives of the strategic plan.

SUMMER FLOUNDER, SCUP, BLACK SEA BASS

- ☐ 2019 specifications for summer flounder (revise)
- ☐ 2020 interim specs for scup and black sea bass (develop and approve)
- ☐ 2020-2021 specifications for summer flounder, scup, black sea bass (develop and approve)
- ☐ 2020 recreational management measures for summer flounder, scup, and black sea bass
- ☐ Advisory panel fishery performance reports
- ☐ Revisions to recreational management system for summer flounder, scup, and black sea bass (in progress)
- ☐ Evaluation of commercial scup discards
- ☐ Evaluate mesh size regulations for summer flounder, scup, black sea bass (expected by end of year)
- ☐ Summer flounder commercial/recreational allocation study update (contract)
- ☐ Summer flounder commercial issues amendment (final action)
- ☐ Summer flounder recreational management strategy evaluation (contract)

MACKEREL, SQUID, BUTTERFISH

- ☐ Chub mackerel amendment
- ☐ 2020 specifications for ~~mackerel,~~ squids~~,~~ and butterfish (review)
- ☐ 2020 specifications for mackerel (revise)
- ☐ Advisory panel fishery performance reports
- ☐ Butterfish cap review
- ☐ *Illex* permit and MSB goals and objectives amendment (scoping and development)
- ☐ HMS chub mackerel diet study (contract; ongoing)
- ☐ Establish working group for real time *Illex* management

RIVER HERRING AND SHAD

- ☐ RH/S cap for Atlantic mackerel fishery for 2020 (~~review~~revise)
- ☐ RH/S progress update

BLUEFISH

- ☐ 2020-2021 specifications for bluefish (develop and approve)
- ☐ 2020 interim specs for bluefish (develop and approve)
- ☐ 2020 recreational measures for bluefish (develop and approve)
- ☐ Advisory panel fishery performance report
- ☐ Bluefish allocation amendment

GOLDEN AND BLUELINE TILEFISH

- ☐ 2020 specifications for golden tilefish (review)
- ☐ 2020 specifications for blueline tilefish (review)
- ☐ Advisory panel fishery performance reports

- ☐ Private recreational permitting and reporting (GARFO lead) (status unknown)

SURFCLAMS AND OCEAN QUAHOGS

- ☐ 2020 specifications for ocean quahogs (review)
- ☐ 2019 and 2020 specifications for surfclams (~~review~~revise)
- ☐ Advisory panel fishery performance reports
- ☐ Excessive shares amendment (final action expected in December)
- ☐ ITQ review project (contract)
- ☐ Surfclam genetic study (contract; ongoing)

SPINY DOGFISH

- ☐ 2020 spiny dogfish specifications (review)
- ☐ Advisory panel fishery performance report

ECOSYSTEM AND OCEAN PLANNING/HABITAT

- ☐ EFH redo (ongoing)
- ☐ Regional habitat assessment (ongoing)
- ☐ EAFM conceptual model development
- ☐ EAFM risk assessment
- ☐ Offshore development and ocean uses

GENERAL

- ☐ 2020-2024 strategic plan development (contract)
- ☐ Commercial fisheries eVTR framework
- ☐ Allocation review criteria for all FMPs

COMMUNICATION AND OUTREACH

- ☐ Implementation of council communication and outreach plan (ongoing)
- ☐ Council action web pages
- ☐ Fact sheets and outreach materials

SCIENCE AND RESEARCH

- ☐ Federal fishery dependent data initiative (GARFO lead)
- ☐ Risk policy framework
- ☐ SSC OFL CV guidelines
- ☐ SSC membership review
- ☐ Comprehensive five-year (2020-2024) research ~~plan~~ priorities development
- ☐ Joint Council-SSC meeting

POSSIBLE ADDITIONS

- ☐ Tilefish survey development (ongoing)
- ~~☐ Aquaculture FMP (initiate)~~
- ☐ Mid-Atlantic regulations and enforcement
- ☐ Implement law enforcement/for-hire workshop recommendations
- ~~☐ ACT control rules for monitoring committees~~
- ☐ Evaluate federal trip limits for spiny dogfish
- ~~☐ Summer flounder, scup, and black sea bass allocations (possible amendment)~~

- ☐ ~~Review red crab and lobster fishery exemptions for discrete deep sea coral protected zones~~
- ☐ Review and consider redevelopment of RSA program
- ☐ ~~Action to address right whale issues~~

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

MEMORANDUM

Date: September 26, 2019

To: Council

From: Fiona Hogan (NEFMC staff) & Jason Didden (MAFMC staff)

Subject: Monkfish 2020-2022 Fishing Years (FYs) Specifications

The NEFMC met on September 24, 2019 to discuss monkfish specifications for FYs 2020-2022. After receiving an update on the 2019 operational assessment, PDT analyses, and outcomes of the Advisory Panel (AP) and Committee meetings, the NEFMC passed the following two motions:

1. that the Council approve Alternative 3 to revise SFMA monkfish specifications for FY2020 - FY2022 only and select as preferred.
2. that the Council support the recommendation of Alternative 2 (revised monkfish specifications) for FY 2020-FY2022 only for the NFMA as preferred.

At the October 2019 Meeting the MAFMC needs to also set monkfish specifications. Management adjustments made to the Monkfish FMP generally need majority approval of each Council.

The NEFMC discussed the concerns raised by the AP and Committee related to the discard estimation methodology. For the initial list of 2020 priorities for monkfish, the NEFMC added an analysis of alternative methods for estimating discards and discard mortality of monkfish.

Attached Materials:

NEFMC Press Release on Monkfish Specifications
Draft FY2020-2022 specification alternatives, dated September 18, 2019
Decision document for FY 2020-2022 specifications, dated September 19, 2019
SSC memo on ABCs
Monkfish Plan Development Team (PDT) ABC Memo to SSC
Draft AP motions, dated September 18, 2019
Draft Committee motions, dated September 18, 2019
Excerpt from the Monkfish Assessment Update (Online Supplement)

New England Fishery Management Council

FOR IMMEDIATE RELEASE
September 26, 2019

PRESS CONTACT: Janice Plante
(607) 592-4817, jplante@nefmc.org

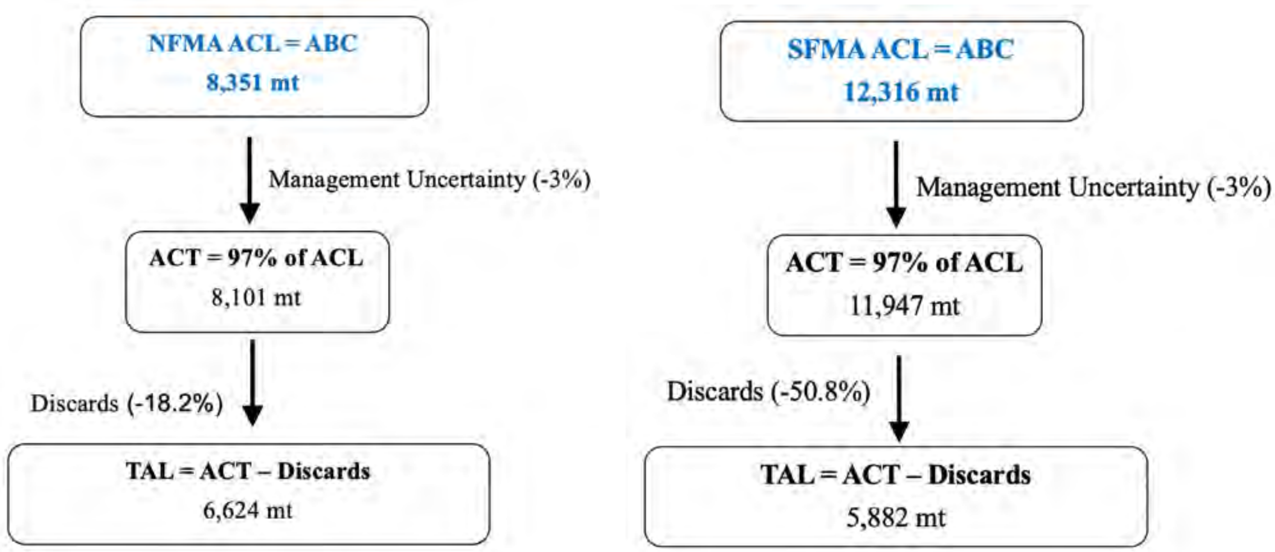
Monkfish: Council Approves 2020-2022 Fishery Specifications

The New England Fishery Management Council has approved new specifications for the 2020-2022 monkfish fishing years. The fishery operates within two areas – the Northern Fishery Management Area (NFMA) and the Southern Fishery Management Area (SFMA) – with a boundary line that roughly bisects Georges Bank. Landing limits and management measures vary by area, as do fishing practices.

The Council supported a 10% increase in the acceptable biological catch (ABC) for the northern area and status quo for the ABC in the southern area based on recommendations from its Scientific and Statistical Committee (SSC), which worked with guidance from the Monkfish Plan Development Team (PDT). Under the Monkfish Fishery Management Plan, deductions are made from the ABC to account for management uncertainty and discards in order to determine the level of total allowable landings (TAL) for each area (see flowchart below).

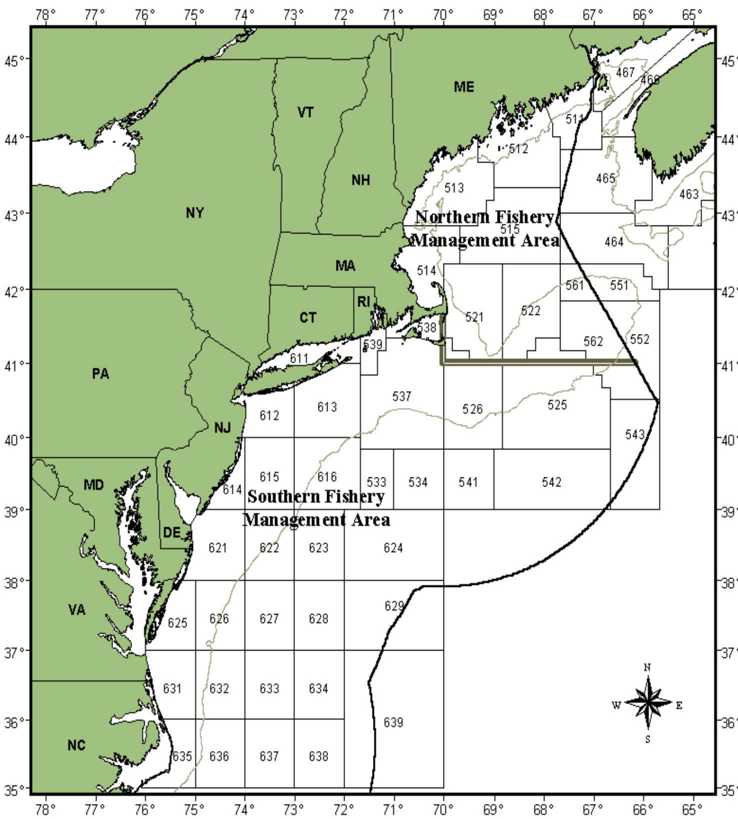
A new operational assessment was conducted for monkfish this summer. While the final peer-reviewed report is not complete yet, the SSC and PDT were able to use preliminary findings to develop the 2020-2022 specifications. Updated assessment data were used to determine discard levels, which are calculated

Revised 2020-2022 Specifications for Northern and Southern Fishery Management Areas
in metric tons (mt)



ABC = Acceptable Biological Catch
ACL = Annual Catch Limit
ACT = Annual Catch Target
TAL = Total Allowable Landings

through a ratio of discards to total catch over the most recent three-year moving average. In 2016, discards in the northern area were estimated to be 13.9%. As a result of the 2019 operational assessment, discards in the north increased slightly to 18.2%. In the southern area, discards increased from 24.6% in 2016 to 50.8% in 2019. According to the PDT, one contributing factor was the large 2015 year class of monkfish, which was the largest recruitment event in almost 20 years.



*The Council concurred with the PDT/SSC recommendation that **"no changes"** are needed to effort controls, possession limits, and day-at-sea (DAS) allocations in either region at this time.*

Current measures are outlined in the:

[2017-2019 Monkfish Final Rule]

– NOAA Fisheries graphic

- All documents used during this meeting are available at [September 2019 Monkfish Discussion].
- Questions? Contact monkfish plan coordinator Dr. Fiona Hogan at (978) 465-0492, ext. 121, [fhogan@nefmc.org].

The following information also is included in this management action:

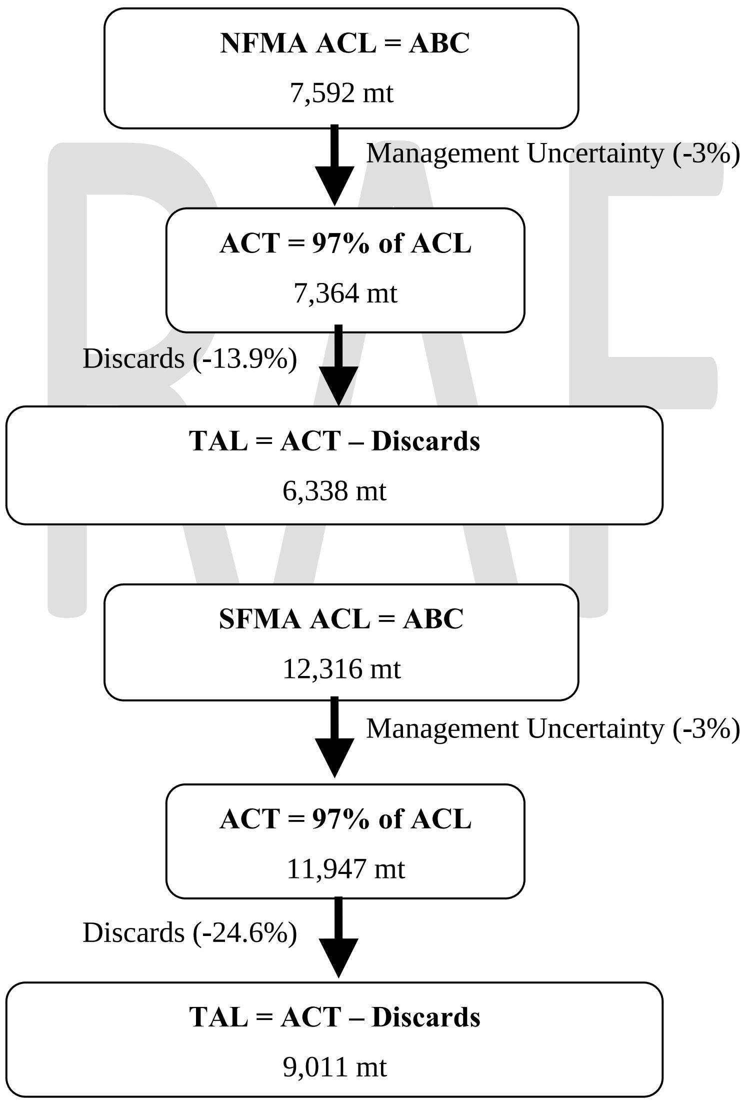
- Commercial fishery statistics for monkfish were updated for 2015-2018 in the assessment. In the north, landings and catch have fluctuated around a steady level since 2009 but increased after 2015. In the south, landings and catch had been declining since around 2000, but catch increased after 2015 due to discarding of a strong 2015 year class.
- Strong recruitment in 2015 fueled an increase in stock biomass in 2016-2018, though abundance has since declined as recruitment returned to average levels. Biomass increases were greater in the northern area than in the southern area, and biomass has declined somewhat in the south.
- **Northern Area:** Landings in the north in 2016, 2017, and 2018 respectively totaled 5,447 mt, 6,807 mt, and 6,168 mt, achieving 93%, 107%, and 97% of the TAL respectively.
- **Southern Area:** Landings in the south in 2016, 2017, and 2018 respectively totaled 4,345 mt, 3,802 mt, and 4,600 mt, achieving 49%, 42%, and 51% of the TAL respectively.

1.0 ALTERNATIVES UNDER CONSIDERATION

1.1 ACTION 1 - SPECIFICATIONS

1.1.1 Alternative 1 - No Action

Under Alternative 1 (No Action), this option would maintain the specifications (ABC, ACT, and TAL) for both the NFMA and SFMA as set in Framework 10 (NEFMC, 2017). This option would not take into account the updated discard rate information from the 2019 operational assessment. The OFL would be maintained as 17,805 mt and 23,204 mt for the NFMA and SFMA, respectively, and the ABC, ACT and TAL calculated as in FW12:



Rationale: The 2019 operational assessment provided a plan for setting catch advice. The status quo TAL would continue to use the 2007 Data Poor Working Group Assessment discard estimates that do not include updates in data and estimation methodology. The discard rate is calculated as the ratio of discards to catch, and under status quo, the years used to calculate the discard rate would be 2004-2006.

1.1.2 **Alternative 2 - Revised Specifications and Updated Discard Rate for the Northern Fishery Management Area**

Under Alternative 2, this option would incorporate the results of the 2019 operational assessment. This would increase the ABC by 10% and incorporate the updated discard rate based on the 2019 operational assessment.

NFMA ACL = ABC
8,351 mt

↓ Management Uncertainty (-3%)

ACT = 97% of ACL
8,101 mt

↓ Discards (-18.2%)

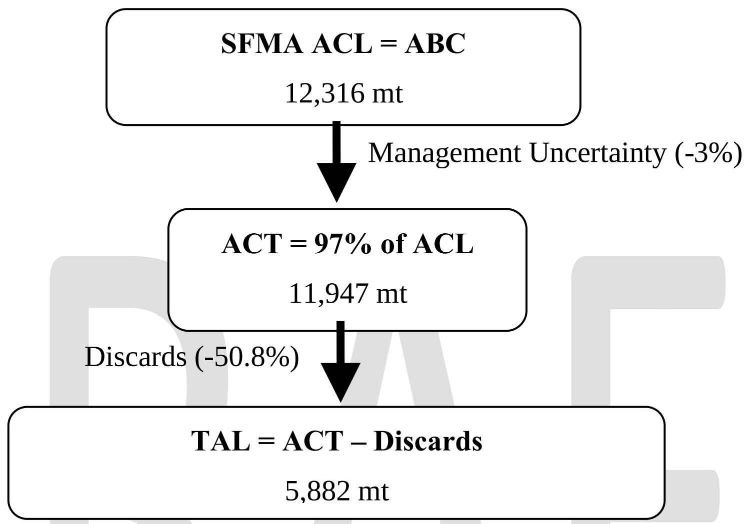
TAL = ACT – Discards
6,624 mt

Rationale: The discard rate is calculated from the ratio between the same 3 years of discards and catch. Under Alternative 2, the years used to calculate the discard rate were 2016-2018.

(See next page for Southern Fishery Management Area.)

1.1.3 Alternative 3 - Revised Specifications and Updated Discard Rate for the Southern Fishery Management Area

Under Alternative 3, this option would maintain the specifications (ACL and ACT) for the SFMA as set in Framework 8 (NEFMC, 2014) but would update the discard rate based on the 2019 operational assessment.



Rationale: The discard rate is calculated from the ratio between the same 3 years of discards and catch. Under Alternative 2, the years used to calculate the discard rate were 2016-2018.

DECISION DOCUMENT

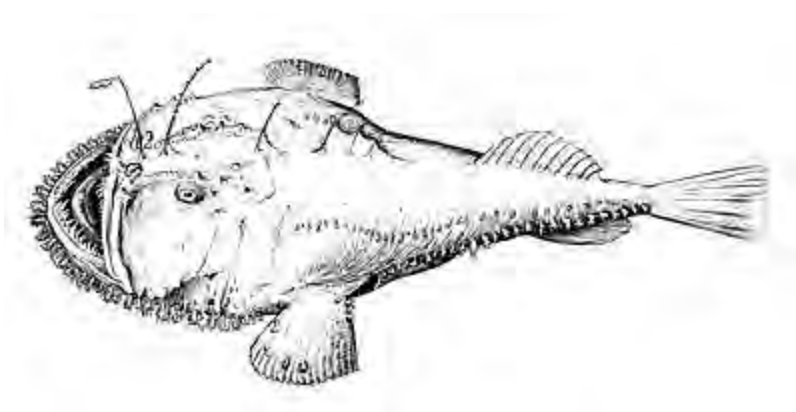
for

Specifications for FYs 2020-2022

to the

Monkfish

Fishery Management Plan (FMP)



NEFMC Council Meeting
September 24, 2019

The following decision table summarizes the discussion on monkfish specifications for FYs 2020-2022.

Section 1.1 – Specifications

Monkfish Committee Motions:

- The Committee recommended modifying alternative 3 to revise SFMA monkfish specifications for FY2020 only and select as preferred
- The Committee recommended alternative 2 (revised monkfish specifications) for FY 2020 only for the NFMA as preferred
- The Committee agreed by consensus to endorse the PDT recommendation to maintain status quo effort controls in both management areas.

Alternatives/Options Under Consideration	Description Three Alternatives
Alternative 1	No Action
Alternative 2	Revised Specifications and Updated Discard Rate for the Northern Fishery Management Area (NFMA)
Alternative 3	Revised Specifications and Updated Discard Rate for the Southern Fishery Management Area (SFMA)
Decisions/Questions to Consider	
• Should specifications be set for 3 years (original priority) or 1 year (AP/CTE recommendation)? • What additional data related to discards could be expected in 2020? • Will the southern monkfish fishery be constrained by the lower TAL in Alternative 3?	
Monkfish Committee Recommendations	
• The Committee recommended setting 1 year (FY2020) of specifications for both NFMA and SFMA. An initial motion to set specifications in the NFMA for 3 fishing years was reconsidered in order to be consistent with the 1 year specifications recommended in the SFMA. • The Committee recommended a subsequent specifications action be added to the 2020 priority list which would also discuss the monkfish discard calculation methodology.	
Monkfish AP Comments/Recommendations	
• The AP recommended that the Committee to select as preferred alternative 1 (No Action specifications) for FYs2020-2022 for the SFMA only. • The AP requested the Committee add to the list of 2020 priorities an additional management action (to set specifications and associated measures) that would revisit the discard estimates (effort and discard mortality research) for the NFMA and SFMA. • The AP recommended that the Committee select as preferred alternative 2 (revised specifications) for FYs2020-2022 for the NFMA	
Other Important Considerations	
• Next monkfish assessment is not expected until 2022, based on the current assessment schedule.	

#5

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Dr. John F. Quinn, *Chairman* | Thomas A. Nies, *Executive Director*

To: Tom Nies, Executive Director

From: Scientific and Statistical Committee

Date: September 18, 2019

Subject: Terms of Reference – Specify overfishing levels (OFLs) and develop allowable biological catch (ABC) recommendations for monkfish for fishing years for 2020-2022.

The SSC met on August 21, 2019 in Providence, Rhode Island, to address the following terms of reference (TORs):

1) Review information from the June 2019 operational assessment for monkfish and provided by the Monkfish Plan Development Team (PDT).
2) Specify OFLs and develop Allowable Biological Catch (ABC) recommendations for both the Northern and Southern Management Areas for fishing years 2020-2022. ABC recommendations should be provided under the current control rule and/or under any new control rule that the SSC might recommend.

To address these TORs, the SSC considered the following information:

B.0 - Terms of Reference – Specify overfishing levels (OFLs) and develop allowable biological catch (ABC) recommendations for monkfish for fishing years for 2020-2022
B.1 - August 16, 2019 memo from Monkfish Plan Development Team to SSC – Monkfish ABCs for FY 2020 - 2022
B.2 - An Excerpt from the "Operational Assessment of the Black Sea Bass, Scup, Bluefish, and Monkfish Stocks, Updated Through 2018"
B.3 - Risk Policy Matrix for Monkfish

<u>TOR</u>

The SSC reviewed the PDT memo as well as the monkfish section in the 2019 operational assessment document, thereby addressing TOR 1. The SSC continues to support the use of the index-based assessment as the source of catch advice for monkfish in both the Southern and Northern Management Areas. The index-based approach precludes formal estimation of reference points and stock status for monkfish in both Management Areas.

The SSC considered the alternatives provided by the PDT for fishing years (FY) 2020-2022 and **recommends the following ABCs: 8,351 metric tons (MT) for the Northern Management Area and 12,316 MT for the Southern Management Area.** Given the absence of analytical assessments for monkfish, the SSC concluded that **OFLs cannot be determined for either the Northern or Southern Fishery Management Areas. Therefore, the current ABC control rule could not be**

used as a basis for ABC recommendations and a different approach was used (see below). This represents the best scientific advice from the SSC and addresses the second TOR.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

As indicated above, the SSC was unable derive OFLs for the monkfish populations in either Management Area. The PDT recommended an increase of 10% in the ABC for the Northern Management Area ABC. The SSC concurred with this recommendation and agreed that a more conservative ABC is appropriate than the 20% increase emanating from the Plan B assessment. The 10% ABC increase was deemed appropriate given the uncertainty associated with the contribution of the 2015 year class to stock biomass over the next 3 fishing years. Also, the 2019 NEFSC spring and autumn trawl survey relative abundance indices for monkfish in the Northern Management area show a decline.

For monkfish in the Southern Management Area, the SSC concurred with the PDT recommendation of a status quo ABC given the flat trend in recent NEFSC survey abundance indices. As noted by the PDT, the status quo ABC specifications for the Southern Management Area have not resulted in catch limits being exceeded since their implementation. Given no evidence of any negative impacts on monkfish in the southern area from the recent management specifications, the SSC recommends that the current ABC in the Southern Management Area continue during the next three fishing years.

ADDITIONAL COMMENTS

The SSC discussed future needs and technical recommendations for the monkfish populations in the two management areas. The SSC recommends gaining improved age and growth information for conducting analytical assessments in the future. If such assessments are able to be performed with the new data, formal estimation of stock status criteria and reference points will be possible.

The SSC also recommends investigating the 2015 recruitment event and its effect on discards and biomass trends. If the high discard rates in the current fishery are primarily due to the 2015 cohort, it is important to understand if discarding will decline as this year class becomes fully recruited to the fishery.

The SSC encourages investigating various alternative approaches for assessing monkfish as recommended by the peer review panel including surplus production models that incorporate process error and other data limited approaches (such as those available in the DLM toolkit and ICES assessment tools).

The SSC discussed examining NEFSC survey abundances for monkfish during the 2020-2022 period to evaluate whether adjustments to the specifications might be needed to account for unanticipated changes in the abundance of monkfish in either of the two Management Areas. The SSC recommended that a “rumble strip” approach be developed (such as the approach used for scup) to ensure that the monkfish ABCs during the specification period are concordant with current stock abundance. The rumble-strip approach could examine various data such as survey abundance, size compositions, and fishery catch and length-frequencies to evaluate whether any unforeseen adverse changes had occurred in the monkfish populations in either of the two Management Areas. If so, a management action might be needed to be address this situation.

Summary of recommendations

1. **The SSC could not determine OFLs for monkfish in the Northern and Southern Management Areas as analytical assessments are not available from which to estimate stock status criteria and biological reference points.**

2. **For FY 2020-2022, the SSC recommends an ABC of 8,351 MT for monkfish in the Northern Management Area, and an ABC of 12,316 MT for monkfish in the Southern Management Area.**

3. **The SSC recommends a research track assessment be pursued for monkfish to develop analytical assessments once the current age and growth research initiatives are completed. In the interim, various data-limited assessment approaches should be investigated.**

B.1

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: August 16, 2019

TO: Scientific and Statistical Committee

FROM: Monkfish Plan Development Team

SUBJECT: **Monkfish specifications for FY 2020 - 2022**

This memorandum forwards the Monkfish PDT recommendation for ABCs for the Monkfish Northern Fishery Management Area (NFMA) and Southern Fishery Management Area (SFMA) for FY 2020 - FY 2022 (Table 1). The operational assessment did not update the SCALE model that had been used since 2007 to assess the monkfish stocks after its use was invalidated by age validation research in 2016. Instead, the stock was assessed using the Plan B methodology that was used in the 2016 operational assessment.

The Plan B assessment methodology calculates the proportional rate of change in smoothed survey indices (average of fall and spring NEFSC surveys) over the most recent 3 years and applies the rate of change to derive guidance on future catch limits.

Operational Assessment

Landings in the Northern area peaked in the early 2000s (Figure 3). Recent management actions that removed the possession limit in the NFMA when fishing on both a Multispecies and Monkfish DAS may have contributed to a recent increase in landings. Landings in the SFMA have remained relative stable in recent years. Large increases in discards were observed in both management areas, especially in the SFMA (Figure 4). This is likely attributable in part to the large 2015 year class. The length frequencies of discards by gear type in both areas highlight the differences in how the fisheries are operated; the Southern fishery is dominated by gillnet gear, while the Northern fishery primarily harvests monkfish using trawls (Figure 5 and Figure 6). The survey trend methodology for adjusting catch advice calculates the proportional rate of change in smoothed survey indices (average of fall and spring NEFSC surveys) over the most recent 3 years and uses the rate of change to revise catch limits. The adjustment factors based on the average of the two surveys were approximately 120% in the Northern area and 100% in the Southern area.

Specifications

The PDT recommends an increase of 10% in the NFMA ABC. This is more conservative than the adjustment factor coming from the Plan B assessment (120%) because of uncertainty about how long the 2015 year class will continue to influence biomass in the next 3 fishing years, the overall trend in the survey indices, and the recent performance of the fishery, which has only been achieving the TAL since FY2016 (Table 3). The PDT recommends a status quo ABC in the SFMA because the adjustment factor coming from the assessment (100%) supported no change in the ABC. Landings in the SFMA have been below the TAL in recent years. Status quo specifications in the SFMA have not resulted in the catch limits being exceeded since their implementation, suggesting low, if any, negative impacts on the stock (Table 4). Specifications were last set in 2016 for monkfish, considering the level of uncertainty the SSC recommended not updating the NFMA and SFMA ABCs at that time and the 2013 ABCs were maintained.

Overfishing Limit

The overfishing limit (OFL) is defined as the product of the fishing mortality threshold (F_{max}) and the current estimate of exploitable biomass. Since the age-based analyses were not updated in the 2019 operational assessment, the fishing mortality threshold was not recalculated. After the 2013 operational assessment, the OFL was revised in Framework 8, however, the ABCs were not revised at that time. The OFLs for the Northern and Southern Fishery Management Areas were 17,805 mt and 23,204 mt, respectively.

Acceptable Biological Catch

The method used to derive Acceptable Biological Catch (ABC) for monkfish reflects the high degree of uncertainty in the assessment results using the SCALE model. The method applied in the past is described in Amendment 5:

> *The SSC observed in its June 23, [2010, following SARC 50] report to the Council that "considerable uncertainties in the assessment model preclude its use to determine probability of exceeding the projected Overfishing Level of catch." Therefore, the SSC recommended the method of determining ABC should be considered an interim proxy until Overfishing Level of catch and its uncertainty can be projected.*
>
> *The SSC recommended [in March 2009, during the development of Amendment 5, and subsequently adopted by the Councils] that the interim ABC should be derived (ABC control rule) as:*
>
> ***the product of the average exploitation rate during the recent period of stable or increasing trend in biomass for each management unit and the most recent estimate of exploitable biomass.***

Revised specifications in the NFMA and status quo ABC in the SFMA would result in ABCs of 8,351 mt and 12,316 mt for the Northern and Southern Fishery Management Areas, respectively (Figure 1 and Figure 2). These were derived from applying the proportional rate of change based on the Plan B assessment to the status quo ABCs from FW10 (7,592 mt in the NFMA, 12,316 mt in the SFMA).

Discards are calculated from the assessment data using the most recent three year moving average of the ratio of discards to total catch for both management areas; in 2016 this was 13.9% in the NFMA and 14.6% in the SFMA. The 2019 operational assessment estimates discards as 18.2% in the NFMA and 50.8% in the SFMA. The large increase in the SFMA discards is likely because of the large 2015 year class and the data show there has been an increase in discards from dredge gear (Figure 4). The current methodology results in calculated discards in the SFMA that are higher than the 2017 discards of 5,250 mt (the highest in the time series; Table 9 in assessment report). The PDT exchanged ideas about alternative discard approaches via email after the call but no alternative approaches appear more appropriate than the current one at this time. As the 2015 year class matures it's possible we'll see lower discards in the near future, and the PDT may investigate alternative discard prediction approaches in future specifications actions. Given recent landings and market conditions, it appears unlikely that the new lower SFMA TAL will be exceeded under current management measures.

Figure 1 - Revised specifications for the Northern Fishery Management Area

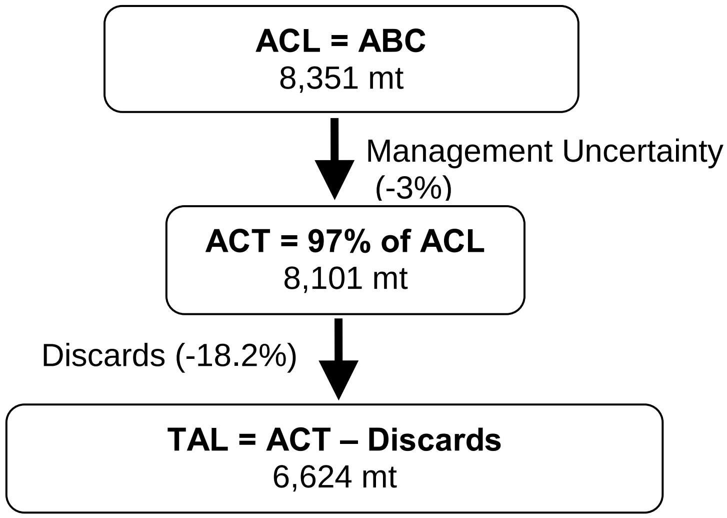


Figure 2 - Revised specifications for the Southern Fishery Management Area

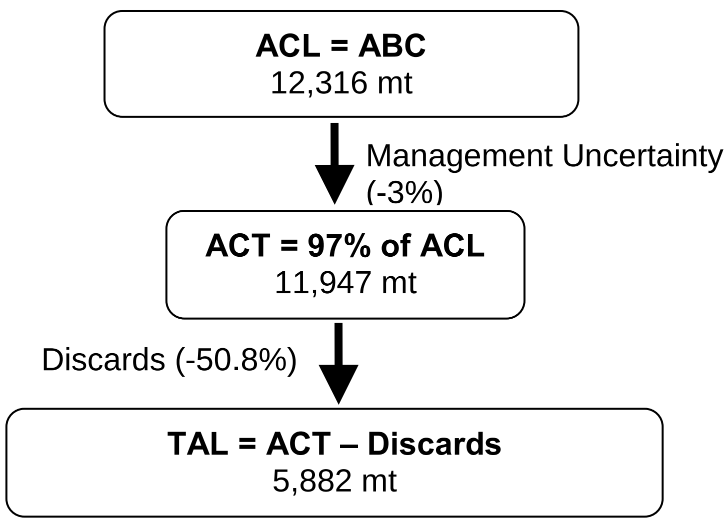


Table 1- Comparison of status quo and alternative specifications for the Northern Fishery Management Area

	ABC	ACT	TAL	Estimated Discards	% Difference in TAL from status quo
Status quo	7,592	7,364	6,338	1,026	0%
Plan B adjustment factor (20%)	9,110	8,837	7,226	1,610	13%
PDT recommended adjustment factor (10%)	8,351	8,101	6,624	1,477	4.4%

Table 2 - Comparison of status quo and alternative specifications for the Southern Fishery Management Area

	ABC	ACT	TAL	Estimated Discards	% Difference in TAL from status quo
Status quo	12,316	11,947	9,011	2,936	0%
PDT recommendation (pending discard discussion)	12,316	11,947	5,882	6,064	-42%

Table 3 – Recent landings in the NFMA compared to target TAL (data from GARFO quota monitoring site)

NMFA			
Fishing Year	Landings (mt)	TAL (mt)	Percent of TAL achieved
2014	3,403	5,854	58
2015	4,080	5,854	70
2016	5,447	5,854	93
2017	6,807	6,338	107
2018	6,168	6,338	97

Table 4 – Recent landings in the SFMA compared to target TAL (data from GARFO quota monitoring site)

SMFA			
Fishing Year	Landings (mt)	TAL (mt)	Percent of TAL achieved
2014	5,415	8,925	61
2015	4,733	8,825	53
2016	4,345	8,925	49
2017	3,802	9,011	42
2018	4,600	9,011	51

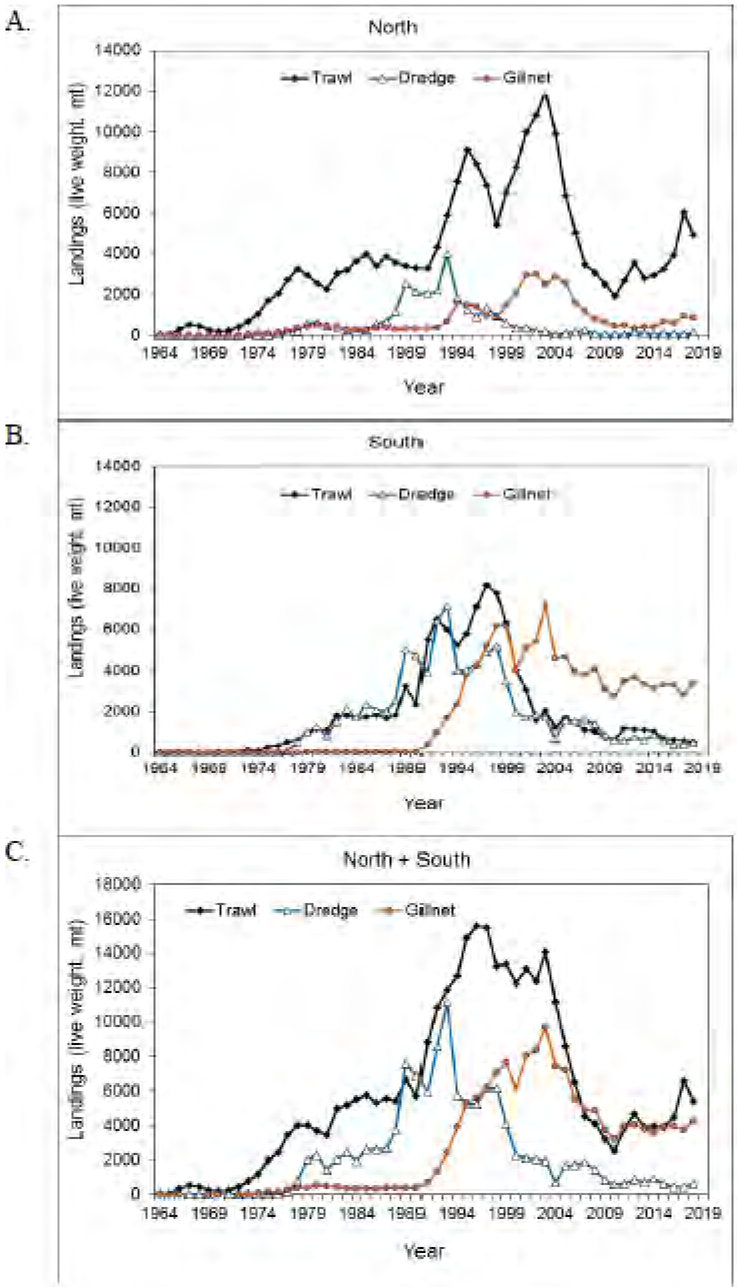


Figure 3 - Commercial landings of monkfish by gear type and management area, 1964-2018. A. Northern management area, B. Southern management area, C. Management areas combined. Figure taken from draft 2019 assessment report.

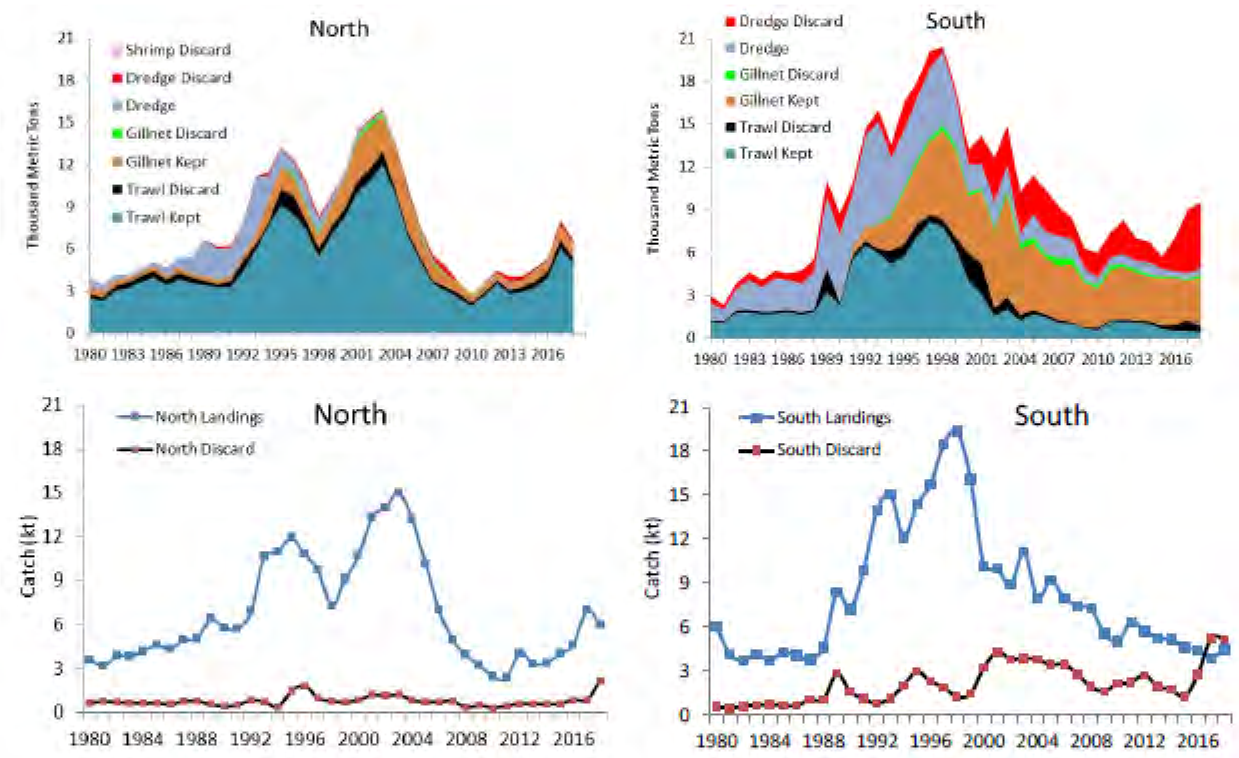


Figure 4 - Monkfish landings and discard by gear type (top panels) and total (bottom panels) for Northern (left) and Southern (right) Fishery Management Areas. Figure taken from draft 2019 assessment report.

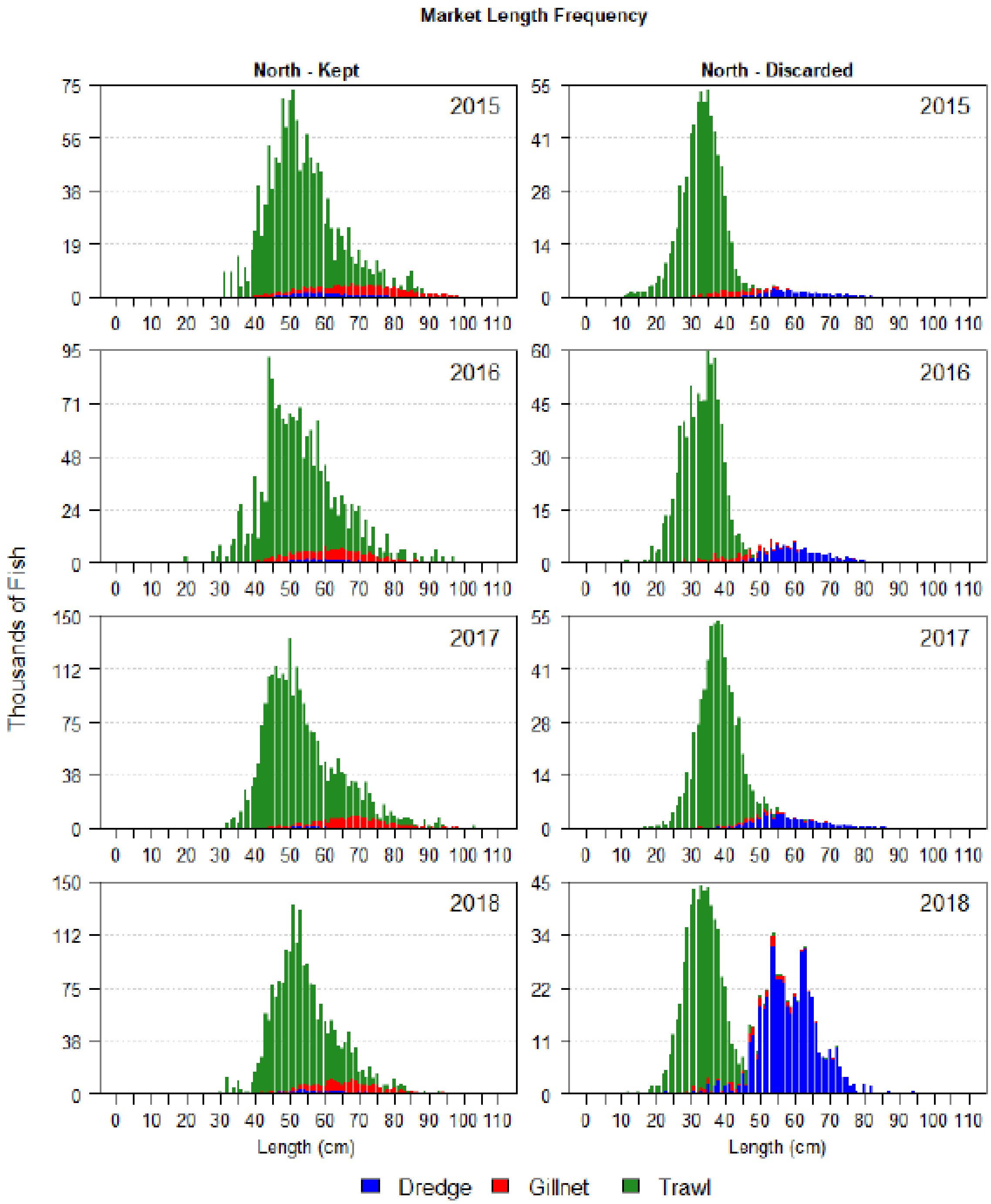


Figure 5 - Estimated length composition of kept and discarded monkfish by gear type in the Northern Fishery Management Area. Figure taken from draft 2019 assessment report.

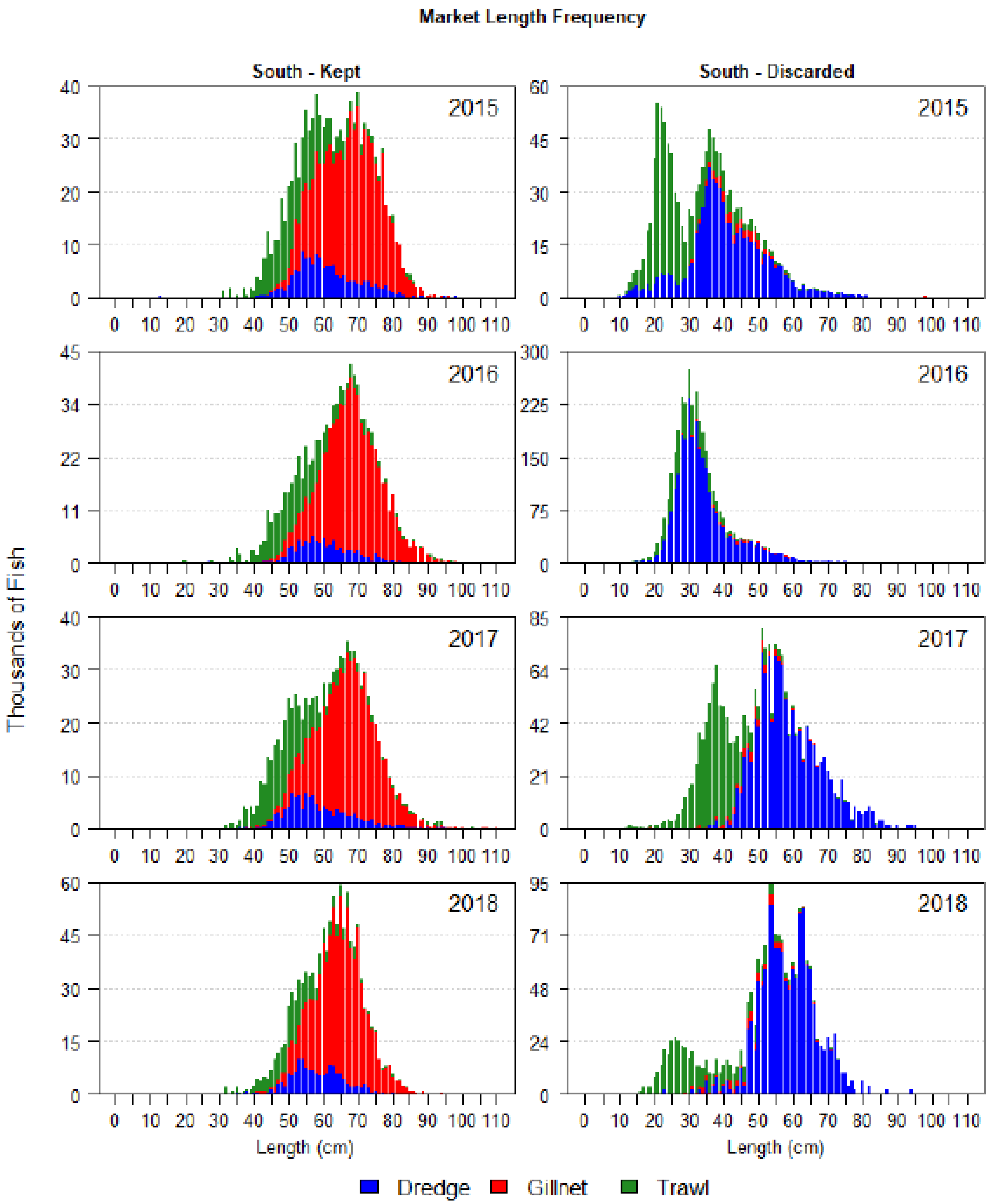


Figure 6 - Estimated length composition of kept and discarded monkfish by gear type in the Southern Fishery Management Area. Figure taken from draft 2019 assessment report.

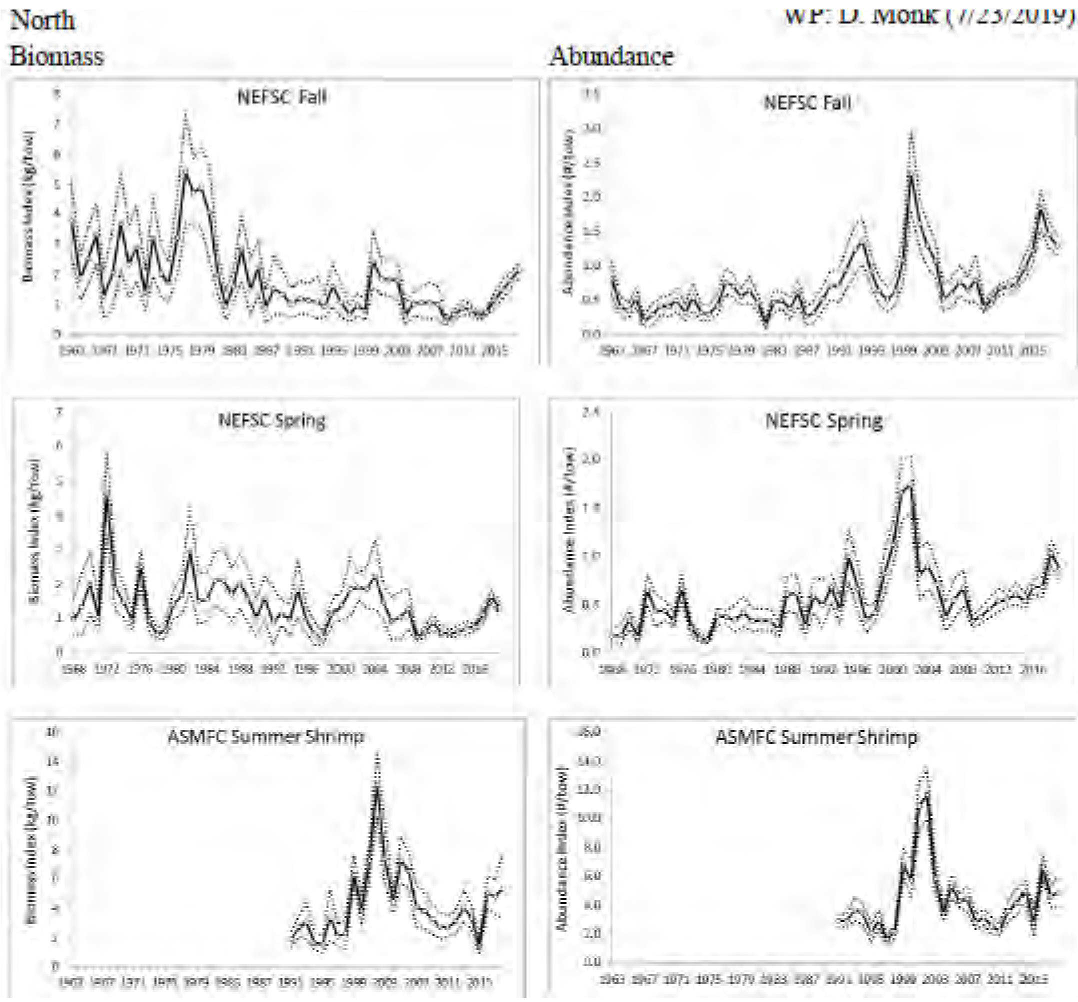


Figure 7 – Survey indices for monkfish in the Northern fishery management area. Points after 2008 in spring and fall surveys are from surveys conducted on the FSV Bigelow, converted to Albatross units. Figure taken from draft 2019 assessment report.

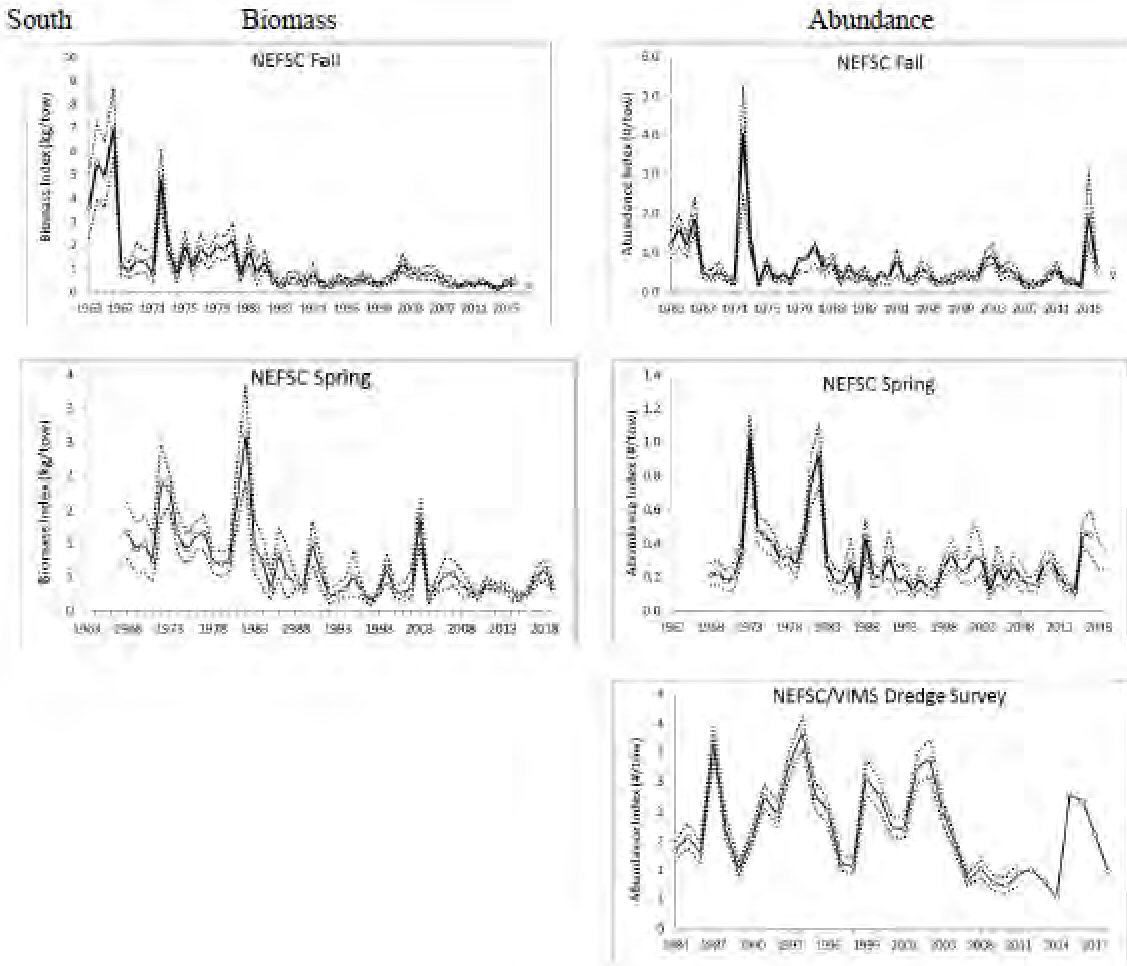


Figure 8 - Survey indices for monkfish in the Southern management area. Points after 2008 for NEFSC trawl surveys were conducted on the FSV Bigelow, converted to Albatross units. Scallop dredge survey indices after 2011 were calculated from combined data from surveys conducted by NEFSC and Virginia Institute of Marine Science. Figure taken from draft 2019 assessment report.

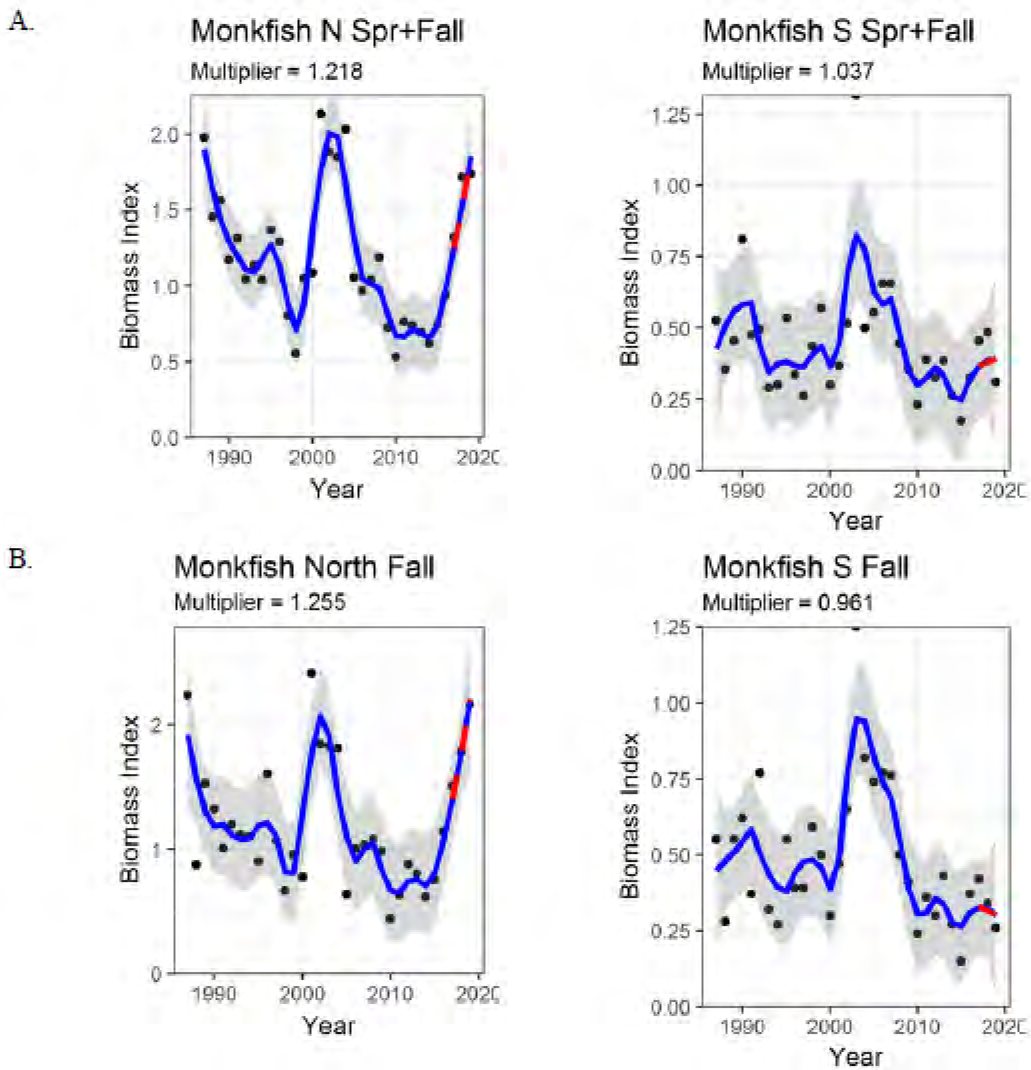


Figure 9 – Results of "Plan B" analysis. Points are observed biomass indices, lines are loess-smoothed indices, "multiplier" is slope of log-linear regression through terminal three smoothed points. A. Results using both spring and fall indices, B. Results using fall survey indices only. Figure taken from 2019 draft assessment report.

New England Fishery Management Council

Monkfish Advisory Panel motions

Revere, MA

September 18, 2019

Meeting Motions

Specifications for FYs 2020-2022

Motion 1: Rainone/Muto

recommend to the Committee to select as preferred alternative 1 (No Action specifications) for FYs2020-2022 for the SFMA only

Motion 1 *carried* 7/0/0

Motion 2: Muto/McCann

recommend to the Committee to select as preferred alternative 2 (revised specifications) for FYs2020-2022 for the NFMA

Motion 2 *carried* 7/0/0

Consensus statement – The AP agreed to status quo effort controls in both the NFMA and SFMA for FYs 2020-2022.

Priorities

Motion 3: Hansen/Rainone

to request the Committee add to the list of 2020 priorities an additional management action (to set specifications and associated measures) that would revisit the discard estimates (effort and discard mortality research) for the NFMA and SFMA

Motion 3 *carried* 7/0/0

The AP also recommended adding management actions to address latent effort in the fishery and the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea to the 2020 priority list.

New England Fishery Management Council

Monkfish Committee motions

Revere, MA

September 18, 2019

Meeting Motions

Specifications for FYs 2020-2022

Motion 1: Pappalardo/Heins

To support recommendation of alternative 2 (revised monkfish specifications) for FYs 2020-2022 for the NFMA as preferred

Motion 1 *carried* 10/0/0

Motion 2: O'Keefe/Pappalardo

To support alternative 3 for the revised SFMA monkfish specifications for FYs 2020-2022

Motion to amend 2a: Reid/Heins

modify alternative 3 to revise SFMA monkfish specifications for FY2020 only and select as preferred

Motion to amend 2a *carried* 5/4/1

Main motion as amended *carried* 9/0/1

Motion 3: Reid/Heins

Motion to revisit Motion 1.

Motion to amend 3a: Reid Heins

Support recommendation of alternative 2 (revised monkfish specifications) for FY 2020 only for the NFMA as preferred

Main motion as amended *carried* 9/0/1

Consensus statement – The Committee endorsed the PDT recommendations that no changes in effort controls are needed in either management area.

Priorities

Motion 4: Pappalardo/Reid

Recommend to the Council for Monkfish priorities for 2020:

- Initiate a monkfish specifications action for FYs2021-2022 including discussion of monkfish discard calculation methodology
- Revisit and consider previous discussions of using the RSA DAS and the ability to flip to a directed day to a RSA DAS while at sea
- Consider latency in the fishery

Motion 4 *carried* 9/0/1

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

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

MEMORANDUM

Date: September 26, 2019

To: Council

From: Jason Didden, staff

Subject: Spiny Dogfish Monitoring Committee (SDMC) Summary and 2020 Specifications Recommendations

The SDMC met on September 16, 2019. SDMC members present included Jason Didden, Fiona Hogan, Conor McManus, Cynthia Ferrio, Dan McKiernan, Angel Willey, and Scott MacDonald (ex officio). Other participants included Kirby Rootes-Murdy, June Lewis, Stew Michels, and John Whiteside. Given the Scientific and Statistical Committee (SSC) endorsed the previously-recommended 2020 Acceptable Biological Catch (ABC) of 31.1 million pounds, and considering recent fishery performance, **the SDMC recommended endorsing continuance of the existing multi-year specifications.** The commercial quota would go up from 20.5 million pounds currently to 23.2 million pounds for the 2020 fishing year (no action needed).

Related to its task to recommend measures necessary to avoid exceeding the Annual Catch Limit (ACL), the SDMC concluded that changes to the current 6,000 pound trip limit do not appear necessary given recent fishery performance. The SDMC noted that as long as the states are adhering to their quotas based on the overall ABC/ACL, different trip limits should not affect stock size. Major changes, such as removing the federal trip limit or removing the complete closure once 100% of the quota is caught, are more appropriate for frameworks or amendments where more analysis and public comment can be evaluated. Allowing states to determine trip limits would add flexibility to the fishery, but the interplay of trip limits and prices may make it difficult to predict fishery responses to modified trip limits.

Relevant materials:

SSC Report (see Committee Reports Tab)
Staff ABC Memo (attached)
Advisory Panel Fishery Performance Report (attached)
Communications (attached)
Staff Fishery Information Document (online supplemental)
NEFSC Dogfish Data Update (online supplemental)
Massachusetts's 2018 Spiny Dogfish *Economic Analysis* (online supplemental)
ASMFC Spiny Dogfish Trip Limit Scoping Comments (online supplemental)

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: August 27, 2019

To: Chris Moore, Executive Director

From: Jason Didden (MAFMC staff) and Fiona Hogan (NEFMC staff)

Subject: Spiny Dogfish ABC Review for 2020 Fishing Year

Dogfish is in multi-year specifications for 2019-2021. The Council's Scientific and Statistical Committee (SSC) is scheduled to review the 2020 dogfish ABC (year 2 of 3) during its September 2019 meeting. The Dogfish ABC is scheduled to increase from 12,914 MT (28.5 million pounds) to 14,126 MT (31.1 million pounds).

A data update from NMFS' Northeast Fisheries Science Center, a fishery information document that supported the Advisory Panel's meeting, and the Advisory Panel's Fishery Performance Report have been posted to http://www.mafmc.org/ssc.

Staff recommends no changes to 2020 dogfish ABCs from the SSC's previous recommendation. While the three-year average of female spawning stock biomass is at a low point since rebuilding, the annual estimate has been trending up since 2017, and the 3-year average may increase next year unless there is a new all-time low for the 2020 index value. Dogfish landings have been below the quota since 2012, but the Advisory Panel has repeatedly noted that the fishery is limited by a weak market for spiny dogfish due to consumer preferences.

Spiny Dogfish
Fishery Performance Report
August 2019

The Mid-Atlantic Fishery Management Council's (Council) Spiny Dogfish Advisory Panel (AP) met via webinar on August 19, 2019 to review the Spiny Dogfish Fishery Information Document and develop the following Fishery Performance Report. 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. A series of trigger questions (see below) were posed to the AP to generate discussion of observations in the spiny dogfish fishery. Please note: Advisor comments described below are not necessarily consensus or majority statements.

Advisory Panel members present: Scott Curatolo-Wagemann, Doug Feeney, James Fletcher, Scott MacDonald, John Whiteside, Jr., Douglas Zemeckis.

Others present: Jason Didden, Fiona Hogan, Cynthia Ferrio, Kirby Rootes-Murdy, Brian Peede, Pat Geer, Alan Bianchi, Stew Michels, Angel Willey, John Boreman, Chris Batsavage, Nichola Meserve, Joanne Pellegrino, Yan Jiao, Sonny Gwin, Chris Hickman, Greg DiDomenico, and Ray Kaine.

Trigger questions:

The AP was presented with the following 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?

Market/Economic Conditions

An advisor noted that markets are extremely limited, though he expects to get close to the 2019 fishing year quota. Self-imposed shipping bans for shark products by the shipping industry have made transport increasingly difficult and negatively affected reaching new markets.

Another advisor stated that improving spiny dogfish demand has been a "slow-go." Getting larger partners (Council, NOAA, MSC, etc.) could help with demand/educational efforts. One advisor suggested that changing the name would help with marketing, but others disagreed that this was a viable/useful approach, and that efforts should concentrate on educating the public that spiny dogfish is a sustainable product. Public concern about conservation of other sharks, including finning concerns, negatively impacts spiny dogfish demand without justification. NMFS staff agreed that spill-over concerns about sharks generally create confusion about whether spiny dogfish is a sustainable seafood choice. An ASMFC advisor noted that from a public relations perspective, the fishery is unfairly "bashed" despite the U.S. having one of the most restrictive shark fisheries in the world and requested a campaign to dispel misinformation about our shark management.

Environmental Conditions

Advisors from VA and NC stated that weather is a major limiting factor for southern landings, and calm weather contributed to higher southern landings in the later portion of the 2018 fishing year.

An advisor from MA indicated that 2018 fishing year landings in MA were off due to skates taking over where the small boats typically fish, which limited the ability of small boats to fish for spiny dogfish. Since mid-summer 2019 there has been better availability for small boats and he expected landings in MA to be higher in the 2019 fishing year.

Management Issues

An advisor noted that the trip limits (federal and state) prevent a large-scale industrial fishery and a large-scale industrial fishery should be given an opportunity, with much higher trip limits (around 30,000 pounds), and possibly separate quotas for food-fish versus industrial uses.

Several AP members recommended leaving the trip limit where it is now, and were concerned that increasing the trip limit within the time frame of the 2019-2021 fishing years, and before demand was improved, would cause problems such as landing more fish for less money, early closures, and/or small boats being driven out of the fishery (large boats could fill the quota and drive prices down).

Advisors were asked for their thoughts on the Atlantic States Marine Fisheries Commission (ASMFC) idea to eliminate the federal trip limit and rely on the states to set trip limits to manage their state or regional quota. Only two advisors voiced opinions at this time, both against, on the grounds that doing so might disadvantage VA/NC fishermen by allowing more northern states' participants to fully supply processors before the fish are available further south. Some concern was also expressed about all fishermen's voices being accounted for in the ASMFC process. Council staff will forward information about ASMFC comment opportunities on this subject to the Advisory Panel.

An ASMFC advisor stated that from the NC perspective it would be useful for VA to allow fishing/landing based on a federal permit. In combination with a NC/VA shared quota this would allow higher landings. He noted that while most people in NC fish in NC state waters, and are not greatly affected by the federal trip limit, it does limit flexibility when fishermen see dogfish offshore; some years it's a major issue, some years it's not.

Other Issues

An advisor expressed concern that no one is seeing (or looking for) male dogfish beyond the survey – but squid fishermen looking for squid in deep water do see dogfish. He also expressed concern that recent science indicating that dogfish spend substantial time outside the survey area or off the bottom has not yet been incorporated into the assessment of spiny dogfish. He also had similar concerns about research regarding pup production, and communicated that catching more dogfish will give other species a chance to rebuild.

Two advisors stated that encouraging the establishment of additional processors, especially in the southern region, would be useful given the shipment costs to the New England processing operations.

Research Priorities

The current spiny dogfish research priorities were reviewed. The advisors were asked to provide input on the current research priorities by email. One comment was received that for the upcoming benchmark, we should look at study fleet data as it could help inform knowledge of how temperature drives distribution and on male/female distribution issues. The same advisor also asked how study fleet data is currently used for spiny dogfish science and/or management; staff will ask for input from the NMFS Science Center.

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 26, 2019

To: Council

From: Jason Didden, staff

Subject: Spiny Dogfish Communications

Two communications were received related to spiny dogfish – they are included below.

From: Greg DiDomenico <gregdidomenico@gmail.com>
Sent: Tuesday, September 17, 2019 2:06 PM
To: Didden, Jason <jdidden@mafmc.org>
Cc: Wark, Kevin <KevinWark@comcast.net>
Subject: Dogfish

Jason
I was too late for the call yesterday.
But just wanted you to know where GSSA is on this topic.

We feel strongly that Dogfish
Management needs to be under the control of the MAFMC .

The trip limit should not only be maintained but should remain the same for federal and state waters.

No other arrangement is prudent or acceptable for this fishery.

Greg DiDomenico
GSSA

From: Douglas Zemeckis <zemeckis@njaes.rutgers.edu>
Sent: Monday, August 19, 2019 7:22 PM
Subject: Re: Spiny Dogfish AP Meeting - Monday, Aug 19 @ 1:30pm

Hello Jason,

My apologies for having to jump off of the call earlier than anticipated this afternoon. I'm heading out on a research trip tomorrow morning aboard a scalloper and some items came up that I needed to take care of before the end of the business day.

I wanted to follow-up with some dogfish research recommendations, many of which were probably brought up after I got off the call. Here are some suggestions and ideas that I had written down in order to add to what was contributed during the call:

- Promotion and Marketing: This seems to be a reoccurring priority and where the conversation ended when I got off the call. Increased promotion and marketing would be very helpful for this fishery which is largely influenced by market demands, including efforts with both foreign and domestic markets. Doug Feeney was describing some of the ongoing efforts in New England, but there currently isn't much south of SNE. This need for marketing and promotion is one that I commonly hear when talking with commercial fishermen here in NJ. In response, I'm part of a team that just submitted a pre-proposal to the NOAA S-K funding opportunity to meet these goals by working with the culinary sector to educate chefs and encourage increased utilization of dogfish. A related hurdle is the lack of processors south of New Bedford. I'd echo the recommendations to promote the opening of a processor near the more southern ports. Also, I've had some conversations with and questions from commercial fishermen in NJ regarding what factors influence dogfish quality upon landing. Research or related recommendations would help with market development by providing as high of a quality product as possible.

- Trawl Catchability: This came up a bit during today's call and I remember seeing it in previous documents; based on the off-bottom movements observed by dogfish in previous PSAT tagging and ecological knowledge of this behavior from fishermen, it would be helpful to better understand the factors influencing dogfish catchability by trawls, particularly given the importance of the trawl survey index for assessing this stock. For example, potential herding behavior would be valuable to understand when interpreting trawl survey data. Some groundfish species have been shown to swim to the bottom when a moving vessel approaches with or without a net in the water. So, even if an animal is off-bottom, it doesn't mean that they are not available to the gear. Also, related to trawl catchability, it seems like it would be valuable to take a closer look at the availability of dogfish to the trawl survey based on previous PSAT tagging (e.g., Carlson et al., 2014) and potentially additional tagging in the future. The butterfish habitat model might serve as a useful example here to evaluate habitats surveyed with respect to those that are utilized by dogfish.

- Stock Structure and Tagging: Have their been any publications from the ECU or NEFSC conventional tagging projects? Fishery catch patterns and PSAT tagging data provide some indications of complexity in popular structure that would be helpful for consideration in the stock assessment and different management options. The results from these previous studies, as well as perhaps future tagging studies or application of other stock ID tools (e.g., genetics), would help provide these insights into stock structure.

Again, my apologies for jumping off the call early today. But, hopefully these add to the points discussed during the rest of the call. Please let me know if you have any questions related to these points and where I might be able to help further.

Cheers,
Doug

Douglas Zemeckis, Ph.D. | County Agent III (Assistant Professor)
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 27, 2019

To: Council

From: Jason Didden, staff

Subject: *Illex* Permitting and MSB Goals and Objectives Amendment

The Council is scheduled to review progress on this amendment and provide direction on further development.

The following documents are included as briefing materials:

-September 2019 MSB Committee meeting summary with action items for October 2019 meeting

-September 2019 Advisory Panel (AP) meeting summary

-Staff memo supporting September 2019 MSB Committee meeting

-Public comments for October 2019 Council meeting received by September 25, 2019

Earlier documents for this action are available via links at http://www.mafmc.org/actions/illex-permitting-msb-goals-amendment.

At the October 2019 Council Meeting, staff will summarize the September 2019 MSB Committee and AP meetings. Based on Council input/actions, development of the amendment will continue accordingly.

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MEMORANDUM

Date: September 25, 2019

To: Council

From: Jason Didden, staff

Subject: September 12, 2019 MSB-COM Meeting Summary; *Illex* Permitting and MSB Goals and Objectives Amendment

1. Introduction

The goal for the Council meeting regarding this action is to review the Atlantic Mackerel, Squid, and Butterfish Committee's (MSB-COM) recommendations and to provide direction on Amendment development.

The MSB-COM met on September 12, 2019 to review and develop options for modifying access to the *Illex* squid fishery as well as for revising the MSB Fishery Management Plan's (FMP) Goals and Objectives. A recording is available at: http://mafmc.adobeconnect.com/pd61pmxhvah0/ .

MSB-COM members in attendance included Peter Hughes (Chair), Sara Winslow (Vice-Chair), Sonny Gwin, Laurie Nolan, Joe Cimino, Stew Michels, Adam Nowalsky, Peter deFur, Andy Shiels, and Eric Reid. Mike Luisi, the Council Chair also attended.

Other attendees included: Jason Didden, Tara Froehlich, Dan Farnham, Brendan Mitchell, Chris Lee, Aimee Ahles, Katie Almeida, Chuck Weimar, Greg DiDomenico, Deirdre Boelke, Jeff Reichle, Jeff Kaelin, Meade Amory, Gerry O'Neil, Doug Christel, Aly Pitts, Meghan Lapp, and Pam Lyons Gromen.

Jason Didden of Council staff provided an overview of the MSB-COM meeting objectives, which were to: 1) Identify problem statements to address and the goals to achieve through this action, and 2) Review and develop initial alternatives in order to provide direction to the Fishery Management Action Team (FMAT) for this action, as well facilitating input from the MSB Advisory Panel (AP) at its September 23, 2019 meeting. A summary of that AP meeting is also included in the briefing materials for the October 2019 Council Meeting.

The meeting started with the Goals and Objectives component and then addressed the *Illex* permitting component. Each component began with a discussion of the problem statement and goals addressed by this action, and then proceeded into discussion of alternatives.

2. MSB FMP Goals and Objectives Component

2A. Problem and this action's goal regarding MSB FMP Goals and Objectives

The "problem" is that there have been no revisions in a long time, and the "goal" is to make sure that the FMP Goals and Objectives are aligned with the Council's current priorities and Strategic Plan.

Council action: Is the "problem" and "goal" for this component described correctly?

2B. Alternatives regarding MSB FMP Goals and Objectives

Council staff reviewed the goals and objectives of the current FMP and those recently developed by the Council for chub mackerel's addition to the FMP. The Council previously indicated that staff should develop a single set of merged goals and objectives that can have call-outs for particular species (i.e. chub mackerel) if appropriate.

The draft unified goals and objectives provided in briefing materials to the MSB-COM are provided below, and some possible additions/changes are noted based on discussions by the MSB-COM. ***Solid underlined, bold, italicized*** font indicates a change the MSB-COM thought should be made, and a ***dotted underline with bold italicized*** font indicates a possible change for further consideration.

- *Goal 1*: Maintain sustainable MSB stocks.
  - *Objective 1.1:* Prevent overfishing and achieve and maintain sustainable biomass levels that achieve optimum yield in the MSB fisheries, with specific consideration of meeting the needs of chub mackerel predators.
  - *Objective 1.2:* Consider ***and strive*** to account for, to the extent practicable, the role of MSB species ***and fisheries*** in the ecosystem, including roles as prey, predator, and food for humans.
- *Goal 2:* Achieve the greatest overall benefit to the Nation, balancing the needs and priorities of different user groups ***and effects of management on fishing communities***.
  - *Objective 2.1*: Provide the greatest degree of freedom and flexibility to harvesters ***and processors (including shoreside infrastructure)*** of these resources consistent with the attainment of the other objectives of this FMP, including minimizing additional restrictions.
  - *Objective 2.2:* Allow opportunities for commercial and recreational MSB fishing, considering the opportunistic nature of the fisheries, changes in availability that may result from changes in climate and other factors, and the need for operational flexibility.
  - *Objective 2.3:* Minimize harvesting conflicts among fishermen.
  - *Objective 2.4:* Balance social and economic needs of various sectors of the ~~***chub mackerel***~~ ***MSB*** fisheries (e.g., commercial, recreational, regional) and other fisheries, including recreational fisheries for highly migratory species.
- *Goal 3:* Support science, monitoring, and data collection to enhance effective management of MSB fisheries.

- *Objective 3.1:* Improve data collection to better understand the status of MSB stocks, the role of MSB species in the ecosystem, and the biological, ecological, and socioeconomic impacts of management measures, including impacts to other fisheries.
- *Objective 3.2:* Promote opportunities for industry collaboration on research.

There was concern voiced about the ability to quantify MSB species' roles in the ecosystem given the similar difficulties previously discussed for just chub mackerel. Specifically, does including Objective 1.2 set the Council up for failure? Staff noted the relevant objective (1.2) states this is to be done "to the extent practicable," and that for butterfish there actually is already a direct and quantifiable integration of ecosystem considerations via the chosen fishing mortality target. An alternative approach was not proposed, and discussion (including preliminary NMFS legal input) noted that goals and objectives can be qualitative and something to strive for.

There was also discussion about whether the call-outs for chub mackerel (see highlighted instances above) were necessary or whether more generic language should be used. The MSB-COM identified one potential change from chub mackerel to MSB more generally, noted above.

Public comment supported additional focus on fishing communities (including processors) in the goals and objectives given the investments that must be made in terms of vessels and shore-side infrastructure for MSB fisheries, especially given the dependence on MSB species for specific communities. There was also a request for recirculation of a list of goals/objectives that had been sent to staff previously from a group of Advisory Panel members (Greg DiDomenico, Jeff Kaelin, Katie Almeida, and Meghan Lapp) who were concerned that the overall MSB goals and objectives "not be based upon what was done for the Chub Mackerel amendment." That list is included below:

1. Maintain sustainable stocks, prevent overfishing, and achieve and maintain sustainable biomass levels that achieve optimum yield in the fisheries and meet predator needs, while acknowledging environmental variables and drivers.
2. Maintain viable fisheries and fishing communities.
3. Allow opportunities for commercial and recreational fishing, considering the opportunistic nature of the fisheries, changes in availability that may result from changes in climate and other factors, and the need for operational flexibility.
4. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.
5. Increase understanding of the conditions of the stocks and fisheries and promote opportunities for industry collaboration on research.
6. Maximize US fishing opportunities by making extra quota available to the US fishery if other areas outside our jurisdiction under harvest scientifically developed quota on the same cross- border stocks, in absence of international agreement.

There was also public comment supporting the added ecological considerations, and requesting that the impact of fisheries on the ecosystem be specifically included given the Council's Strategic Plan. There was also a question whether goals and objectives from FMPs in other Councils were considered. Staff responded that they were not; staff used the outline of the chub mackerel goals and objectives given the Council had recently and extensively considered the chub mackerel goals and objectives. Public comment also noted that ecosystem considerations are already addressed when the Scientific and Statistical Committee (SSC) sets Acceptable Biological Catches (ABCs).

Council action: Are the above unified goals and objectives appropriate? Are any modifications warranted? What is the Council's preference regarding the noted potential edits?

3. *Illex* Permitting Component

3A. Problem(s) and this action's goal regarding *Illex* Permitting

Staff summarized previous FMAT input regarding the *Illex* Permitting issue (http://www.mafmc.org/s/Illex-FMAT.pdf) and the way the recent longfin squid permitting amendment addressed "problems" and "goals." Staff noted that the Magnuson-Stevens Act (MSA) prohibits measures that have "economic allocation" as their sole purpose.

The "problems" from the status quo situation discussed (by the MSB-COM and/or the public) during the meeting included (and will be developed further – there was not consensus):
-Difficulty of timely closures with more vessels participating.
-Potential for *racing to fish* to lead to increased bycatch (bycatch has not been an issue for *Illex* through 2016 when discards were last examined – updated data will be examined during development of the action).
-Potential for *racing to fish* to lead to safety issues (weather, maintenance, overloading).
-Disruptive early closures; loss of quota access for vessels with historical dependence on *Illex* as well as associated fishing community impacts.
-Catching the quota earlier in the year may mean more, potentially less valuable, small/immature squid are caught before they have an opportunity to spawn.
-Activation of previously latent permits may exacerbate *racing to fish* (public comment noted several large vessels are being built to participate in the *Illex* fishery).

The "goal" of the Amendment related to the *Illex* permit component would therefore be to consider further limiting access to the *Illex* fishery and consider the appropriate number of vessels and types of access that could address the above problems. The FMAT has noted before that a permit requalification is unlikely to completely and/or permanently solve *racing to fish* issues, since the remaining vessels often still have incentives to increase their fishing power over time (other measures, such as individual fishing quotas can address racing to fish more directly).

Council action: Does the Council have any additional input on the "problems" and "goals" for this component as they are further refined by the FMAT?

3B. Alternatives regarding *Illex* Permitting

The MSB-COM discussed that given the nature of the *Illex* fishery (high variability), days at sea/ trip limits/ area closures are not practical solutions to *racing to fish*. The MSB-COM also passed a motion that it believes Individual Transferable Quotas (ITQs) are not appropriate at this time (Note: "ITQ" was discussed to include similar types of measures):

-I move that the Committee recommend that ITQs not be included in this Amendment.
Nolan/deFur, Motion passes via Consensus (Motion from Committee, Council action needed)

Public comment was mostly (but not universally) opposed to ITQs as well, partly to avoid delays with implementing this action given the additional requirements for ITQs. There was public interest in considering community development quotas or other community support measures should the Council pursue ITQs in the future.

A discussion regarding the control date (Aug 2, 2013) noted that the Council can use (or not use) the control date. The primary purpose of a control date is to notify the public that access to the fishery may change in the future, and to discourage speculative entry/investment for those who were not active before the control date. Analyses to date have used the full year of 2013 data, in a similar fashion as the longfin squid permit amendment. There was public comment for both using the control date and for not using the control date, as well as potentially considering a separate permit for vessels that had substantial landings since 2013 but would not qualify if a control date was used.

Staff reviewed a set of possible requalification criteria and previous FMAT recommendations (which were general in nature – see http://www.mafmc.org/s/Illex-FMAT.pdf). There was substantial discussion by the MSB-COM and public regarding the pros and cons of various options relative to both qualifying years and landings thresholds. Based on that discussion, the MSB-COM requested further information regarding several permit requalification options (varying time periods and thresholds). Those options and the numbers of qualifying moratorium permits for each option are provided in Table 1 below. If this range appears suitable to the Council, the FMAT will develop impact analyses for the various options. There are options that both use and do not use the 2013 control date. There was a request for additional information about how many vessels have participated at higher poundage thresholds, and staff is investigating whether doing so would violate data confidentiality requirements. Much of the conversation centered on whether recent entrants would endanger the viability of historical participants, and the consideration of the investments in the fishery made by various participants at various times.

The MSB-COM passed two motions that particular options did not warranting further development. There was public comment on each side (pro/con) of these motions.

-I move to recommend removing all the options that use a 10,000-pound single trip threshold (under any time period). Nolan/Gwin, 5/3 Motion Passes (Motion from Committee, Council action needed)

-I move that the Committee recommend removal of qualification dates that extend through 2019. Nolan/Gwin, 6/1/1 Motion Passes (Motion from Committee, Council action needed)

The prevailing rationale for the first motion was that a 10,000-pound trip is the incidental trip limit, and a single 10,000-pound trip would not signify substantial directed effort. There was a question by a MSB-COM member attempting to explore how different the 10,000-pound single trip criteria was from the option that is currently set as a 48,000-pound single trip criteria. Depending on the time periods selected, it appears that about 4-6 vessels are affected by using the 48,000-pound version versus the 10,000-pound version (staff compared Table 1 below to Table 1 in the September MSC-COM meeting briefing memo). Upon request to estimate based on related analyses, staff estimated that most vessels that would qualify under a 10,000-pound single trip criteria are also the same vessels that would qualify under a 50,000 pound best year total criteria. Staff will confirm this in later follow-up analyses of permit crossover between these options. Discussion also noted that impacts from not requalifying may be mitigated by additional lower-level tiered access for non-requalifiers.

The prevailing rationale for the second motion (regarding 2019) was that the main point behind requalification is to avoid a substantial new/recent influx of effort, and extending the qualification date through 2019 would be contrary to the goals of the action. The Amendment was also well underway before the start of the 2019 fishing year, with scoping taking place in February-April 2019. Council and GARFO staff had a discussion regarding whether certain technical economic analyses would need to consider impacts on non-requalifying vessels based on their landings through 2019, but this was a separate question from whether having options that considered landings through 2019 would be necessary to appropriately consider "present participation in the fishery" as required by the MSA. GARFO staff noted (and Council staff agrees) that qualifying criteria for limited access do not typically include partial in-year data, and that including qualifying landings through 2018 (and related analyses) should satisfy the MSA requirements to consider "present participation in the fishery."

There was discussion of including a 2004-2013 time period option, and GARFO staff was able to include it in the preliminary requalifier analysis below.

There was substantial discussion by the MSB-COM and public about whether there should be provisions for non-requalifying vessels beyond the existing open-access "Squid/Butterfish Incidental Catch" permit[1] that allows retention of up to 10,000 pounds of *Illex* "as an incidental

[1] https://www.greateratlantic.fisheries.noaa.gov/aps/permits/forms/_initlins19__.pdf

catch in another directed fishery.[2]" There was interest in provisions for non-requalifying vessels, but concern that if such provisions were too liberal then non-requalifying vessels may be able to continue as if they had requalified, undermining the goals of the action. Concern was voiced by the public that for non-requalifiers, trip limits could be wasteful, but also that percentage sub-quotas may be challenging to monitor/enforce. Discussion was not clear whether these provisions would apply universally to all non-requalifiers, or only non-requalifiers who also had substantial landings after the 2013 control date. This issue was left unfinalized, with a general request for staff to develop options. Additional direction on this topic would be useful, especially which time periods are of most concern in terms of possible non-requalifier accommodation.

Staff notes that under most of the thresholds (see Table 1 below), including landings from 1997-2018 versus 1997-2013 adds 5-8 vessels due to more recent landings. Comparisons also indicate that starting in 2004 versus 1997 removes 3-6 vessels (depending on the threshold) that were apparently active between 1997-2003 but not between 2004-2013.

One potential option for requalification that was mentioned but not substantially discussed was to consider only years with low landings, to emphasize dependence. After considering public input, the MSB-COM endorsed by consensus a range of qualifying years and thresholds as described in Table 1 below.

Council actions:

Are the requalification options summarized in Table 1 the options the Council would like the FMAT to continue analysis on at this time? Are any additions or modifications appropriate? Can any be eliminated to simplify analyses?

In what direction would the Council like the FMAT to work on in terms of accommodations for non-requalifiers? Based on the overall discussion at the MSB-COM meeting, staff proposes the following structure:

-2 "standard" options for non-requalifiers for further development: the current open access permit and trip limit (10,000 pounds) or a new permit ("Tier 3") with a trip limit of 20,000 pounds to acknowledge their original qualification (similar to approach with longfin squid).

-Another permit level (Tier 2), that could be combined with the 2 "standard" options above, where permits that don't requalify but have some higher level of recent participation would get a higher level of access than the above "standard" options to acknowledge their present participation. This may principally apply if the 2013 control date is used. Trip limit and/or sub-quota percent limitations (like Atlantic mackerel Tier 3) could be developed by the FMAT.

[2] https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=1e9802ffddb05d0243d9c657fade956c&rgn=div5&view=text&node=50:12.0.1.1.5&idno=50#se50.12.648_14 (Title 50 → Chapter VI → §648.4 Vessel permits)

Table 1. Requalification Options the MSB-COM Expressed Interest In for Further Development

Note: All re-qualifier estimates preliminary.		More re-qualifiers →						Less re-qualifiers
Percent in parenthesess is percent reduction of MRIs	**76 *Illex* Moratorium MRIs[1] currently (Unlimited trip limit when fishery is open)**	**At least 50,000 pounds in any one year**	**At least 100,000 pounds in any one year**	**At least one trip above 48,000 pounds [2]**	**At least 300,000 pounds in any one year**	**At least 500,000 pounds in any one year**	**At least 1,000,000 pounds in any one year**	**Only requalify MRIs that accounted for 95% of total landings in time period [3]**
More re-qualifiers	1997-2018	**50 (-34%)**	**48 (-37%)**	**48 (-37%)**	**44 (-42%)**	**41 (-46%)**	**30 (-61%)**	**24 (-68%)**
↓	1997-2013	**43 (-43%)**	**42 (-45%)**	**40 (-47%)**	**38 (-50%)**	**35 (-54%)**	**28 (-63%)**	**24 (-68%)**
	2004-2013	**39 (-49%)**	**38 (-50%)**	**36 (-53%)**	**35 (-54%)**	**31 (-59%)**	**22 (-71%)**	**21 (-72%)**
Less re-qualifiers	Need landings in **both** 1997-2013 ***and*** 2014-2018	**26 (-66%)**	**26 (-66%)**	**25 (-67%)**	**23 (-70%)**	**17 (-78%)**	**13 (-83%)**	**13 (-83%)**

(1) A Moratorium Rights Identifier (MRI) is a unique NMFS-issued number that identifies a unique permit history, and may move between vessels over time.

(2) 48,000 pounds is the trip size (rounded to 1000s of pounds) that accounts for 95% of total landings from 1997-2018

(3) And these vessels are those with the highest total landings in the time period. While the 95% option (far right column) could be a stand-alone option, it also provides information regarding all the other options in the same row. For example, about 50 vessels would requalify if a threshold of 50,000 pounds was used over 1997-2018 (upper left option), and 24 (upper right option) of those 50 MRIs accounted for 95% of landings during that time period.

Two related issues were mentioned in the meeting briefing memo and discussed. First, whether to require a fish hold capacity measurement and use it as a baseline in terms of upgrade limitations; and second, to clarify that daily Vessel Monitoring System (VMS) catch reporting is required for *Illex*.

The FMAT has noted some concerns about the enforceability of fish hold measurements as an upgrade restriction, and can provide additional information if the Council wants further development of such a measure. Public comment was supportive of additional consideration of the fish hold requirement as a way to control capacity in this fishery. The MSB-COM expressed support for additional development of the fish hold issue by the FMAT and to include clarification in this action that daily VMS catch reporting is required for *Illex*.

Council action: Does the Council endorse further development of the fish hold and VMS reporting issues?

A final issue raised during public comment was whether to consider a particular start date (perhaps late May or early June) for the *Illex* fishery to improve squid size/value, avoid butterfish bycatch issues, and allow for scheduling of vessel maintenance. Allowing additional incidental *Illex* catch retention before the start of any set season was also mentioned in order to avoid regulatory discards if a start date was used. There was not universal support in public comment. Staff offered to generate some preliminary analyses (e.g. when has the fishery typically started) for additional input by the Advisory Panel and Council on this topic. These analyses were not yet ready at the time of the briefing book mailout but will be reviewed at the meeting if practicable.

Council action: Does the Council endorse further development of fishery start date options?

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MEMORANDUM

Date: September 27, 2019

To: Council

From: Jason Didden, staff

Subject: September 23, 2019 AP Meeting Summary; *Illex* Permitting and MSB Goals and Objectives Amendment

1. Introduction

The Atlantic Mackerel, Squid, and Butterfish Advisory Panel (MSB AP) met on September 23, 2019 to review and provide input on options for modifying access to the *Illex* squid fishery as well as for revising the MSB Fishery Management Plan's (FMP) Goals and Objectives. A recording is available at: http://mafmc.adobeconnect.com/pnx2a8hsgf7w/.

AP members in attendance included Katie Almeida, Leif Axelsson, Eleanor Bochenek, Gregory DiDomenico, Joseph Gordon, Emerson Hasbrouck, Jeff Kaelin, Howard King, Hank Lackner, Meghan Lapp, Pam Lyons Gromen, Sam Martin, Gerry O'Neill, and Robert Ruhle.

Other attendees included: Jason Didden, Ryan Clark, Dan Farnham, Brendan Mitchell, Eoin Rochford, Chris Lee, Meade Amory, Jeff Reichle, Zack Greenberg, Doug Christel, Aly Pitts, Kara Gross, David White, Steven Follett, Donald Fox, Mike Roderick, Jimmy Elliott, Noah Clark, Philip Merris, and Sonny Gwin.

Jason Didden of Council staff provided an overview of a recent MSB Committee meeting and facilitated discussion by the AP and public. Issues were discussed in the same general order as the MSB Committee meeting and its summary, and input from the AP is summarized with the same general organizational structure.

Comments are reported by topic and not by person. For most topics, there were multiple people on each side of an issue. If a comment was made by the public and also by an AP member, it is included in the AP section and not repeated in the public section. For most points identified in the AP section, there were one or more members of the public who also agreed with the point.

2. MSB FMP Goals and Objectives Component

2A. Problem and this action's goal regarding MSB FMP Goals and Objectives

No comments were provided regarding 2A.

2B. Alternatives regarding MSB FMP Goals and Objectives

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-Chub mackerel should not be specifically highlighted – the concepts apply to all species.
-The NAFO/international quota access issue identified by several AP members should be included as a goal.
-More detail/clarification should be included for Objective 2.3 – does that mean additional requalifications will occur in the future or also further restrictions? This conflicts with Objectives 2.1 and 2.2 – 2.3 should be removed.
-If 2.4 is made more general, then the specific reference to HMS should also be removed.
-The concept of dependence by various species on MSB species (including chub mackerel) role in the ecosystem should be maintained.
-Recognizing the effects of fisheries on the ecosystem is important, though 2.1 may need to be word-smithed.
-A goal or objective regarding reducing bycatch should be added.

Additional points raised by one or more public included:

No additional comments.

3. ***Illex* Permitting Component**

3A. Problem(s) and this action's goal regarding *Illex* Permitting

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-Latent effort activation should be highlighted as part of the problem. Even a relatively small number of vessels, potentially as low as 11, have the potential to shut this fishery and there is a lot of latent effort.

-This topic was already shelved once and doing that again could have serious impacts on the fishery – vessels used to be able to fish into October or November and some boats that have fished *Illex* for many years are tied to the dock for up to 3 months with these early closures.

-It would be useful to know what percent of landings typically occur after August.

-The reason that historical participants have not caught the quota is due to availability and markets – the historical participants, who have often harvested the majority of landings, have always had the capacity to catch the quota.

-Adding more boats without adding to the quota takes away from the historical participants. We don't know what the *Illex* workgroup(s) will produce.

-The real problem seems to be more of a quota issue – the Council should shelve this action and not reduce participants and/or eliminate livelihoods until the results of the workgroups analyzing *Illex* quota modifications are available.

-This action seems to be addressing a purely economic issue.

-Size issues may relate more to start date considerations rather than requalification issues.

-There are specific markets for smaller squid, so smaller squid are not a problem.

-Catching smaller squid may be an issue because you are catching more individuals before they spawn.

-There is no information that current catches, including early season catches, have caused any biological issues.

-There should be consideration if high *Illex* removals may be having localized ecological effects.

Additional points raised by one or more public included:

-Even if the quota is raised by 20%-30% there still would be excessive capacity.

-Bycatch shouldn't be a justification for limiting access - bycatch hasn't been an issue for the *Illex* fishery.

-Historically we've had higher effort during years of higher abundance. How can you justify removing participants when you've only caught the quota 5 times in the last 38 years and you are trying to maximize output – you'll leave poundage and dollars on the table unless there are enough participants during the less abundant years.

-If you eliminate participants now, you may not have enough effort in the more Northern areas if ocean warming trends continue.

-The fishery was established by a few entities that made direct investments in this fishery and that needs to be looked at – we wouldn't have this fishery if not for that investment.

-Both vessel and processor dependencies of historical participants need to be considered.

-With dependence, you need to consider that a lot of permits have changed hands and are with new participants.

-Given the poundage and value of the fishery, if you allocate this to a small number of vessels you are giving a lot of dollars to a small group of vessels.

-A start date and loss of flexibility could pigeonhole the fishery if availability shifts.

-Regarding a start date, market conditions have and can manage whether vessels target smaller squid given the relatively low number of vessels and processors.

3B. <u>Alternatives</u> regarding *Illex* Permitting

<u>3B1. ITQs</u> - No comments.

<u>3B2. Control Date & 2019</u>

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-It's important to use the 2013 control date to account for impacts on communities that developed this fishery. Using the control date is particularly important given the opportunistic activity in the last 3 years.

-The public has been aware of the control date so it's not a surprise. Recent entrants were doing something before jumping into the fishery in recent years so are not as dependent.

-The core group that established this fishery are the ones that really need to be remembered as they are out of business by mid-August now. You need to protect the historical participants.

-Hold to the 2013 control date with a tier for recent participants until we know more, and then if more quota is added they can have additional opportunity as well.

-It's not appropriate to include landings from 2019, i.e. after this action began.

-Options should extend through 2019 to account for present/recent participation and be able to see what adding 2019 results in. This is by nature an opportunistic fishery and people have invested in opportunity.

-If the Council goes forward, the broadest range of qualifying years should be used (and not the control date).

-Landings though 2019 should be included as an option to round out the range given the MSA requirements for limited access programs and see how many boats are affected by different options.

-It would be useful to know how many vessels had zero landings.

-Vessels shouldn't be penalized for depending on multiple species.

-Most participating vessels have multiple permits.

-It would be useful to know something about the dependency of the vessels that became active after the control date versus others, and what proportion of landings newer entrants accounted for after 2014.

-The Council should consider whether reducing permits indirectly creates excessive control (taking product, prices, etc.) of the fishery by the processing sector due to fewer independent operators.

-Even including landings through 2019 at the lowest threshold will eliminate a lot of vessels.

Additional points raised by one or more public included:

-This process is moving fast and some people who have made major investments are going to lose out.

-Considering landings past the 2013 control date through 2019 is necessary to maintain flexibility in the fishery.

-To be able to evaluate the data we need to see landings and qualifiers through 2019.

-The recent fresh/iced entrants with smaller capacity and associated processing has allowed an opportunity for vessels that could not participate before.

-Some have substantial investments that will be impacted so data through 2019 needs to be considered. When the Committee voted to not include 2019 it was not aware that active boats would be affected.

-One thing that needs to be considered is that if you eliminate a bunch of ice boats, the processing will go away so even some requalifiers will be negatively impacted due to the processing constraints.

-It would be a shame to eliminate boats in a fishery that we don't know much about, and we might need more boats up north given shifting environmental conditions.

-Even with substantial vessel reductions there will still be substantial excess capacity. The fewer number of vessels that participated in 2017 caught the quota rapidly – we don't need a lot more.

3B3. Thresholds

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-Support not including a 10,000 pound single trip qualifier since it is just the incidental trip limit.

-Support for including a 10,000 pound qualifier and analysis of how many boats landed zero pounds to have a good range of options and see who is affected by different options.

-For the dual time frame option (needing landings in both 1997-2013 and 2014-2018) the original intent was not for the poundage requirements to be in any one year in both time periods, but to be cumulative through both time periods. A cumulative approach should replace the current single year approach with the same thresholds.

Additional points raised by one or more public included:

-If the Council moves forward, it should do a basic requalification and then consider other options later after performance under the new system can be evaluated.

3B4. Non-requalifiers and Tiers

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-Support analyzing a Tiering system with a percent limitation like Mackerel Tier 3 to reduce derby fishing and protect the longevity of the fishery later into the year, which also improves data collection. Both trip limits and a temporal basis could be analyzed. Measures for all Tiers could be adjusted over time if the quota changes.

-Some support for a Tiered system was conditional upon it being similar to the one done for longfin squid, i.e. not giving a lower Tier near the same level of access as those who do fully requalify.

-Comparing longfin and *Illex* is an apples to oranges comparison.

-Opposition to Tiers, but if Tiers are used to account for recent participation, need to make sure the access is sufficient to sustain continued participation or it's just another less direct way to eliminate vessels.

-Opposition to assigning sub-quotas if Tiers are used (only use trip limits).

-The Council should consider a Tier system without trip limits and only percent of quota limitations.

-Tiers should not be considered permanent – new science could indicate additional participation is appropriate.

-Need to be clear and unambiguous about what open access and incidental permits mean. Would like some open access for directed fishing to allow for ingenuity and experimentation.

-Some vessels directed with the 10,000 pound incidental trip limit in recent years after the closures.

Additional points raised by one or more public included:

-Tiers with percentages are basically just ITQs and there has been widespread opposition to ITQs.

-Especially for ice boats, the trip limits for any Tier will be critical and need to be studied carefully based on how the various vessels actually operate.

-Temporary measures will cause problems.

3B5. VMS

There was no opposition on the call that it would be useful to clarify that daily VMS catch reporting for *Illex* is required. A public comment noted that additional monitoring or closure buffers could also avoid quota overages related to the problems identified as part of the rationale for further limiting access.

3B6. Hold Capacity

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-Even more conservative re-qualifications resulting in fewer vessels will still leave excess capacity, and the *Illex* quota working group may only result in small changes. Hold capacity restrictions would be an important part of restricting capacity.

-Hold modifications to a few boats could undo the effects of requalification, and three boats are being rebuilt from freezer boats into RSW currently.

-If used, holds would need to be determined from current measurements.

Additional points raised by one or more public included:

-This was done for mackerel and would be a critical part of this action. Horsepower and hold capacity are the critical aspects of fishing power for high volume fisheries. Mackerel permits are being moved between vessels and they have had to make accommodations for hold accommodations.

-Locking in hold capacities favors those who already modified their vessels.

-Like mackerel, hold size would have to be from this point forward. How would CPH permits be handled? A fishery participant reported that with mackerel, the vessel that CPH permits were put on when they came out of CPH defined the hold size.

3B7. Start Date

Points raised by one or more AP members, or points raised by the public and reiterated by one or more AP members, included:

-Opposition because it takes away freedom and flexibility to meet market demands and considering the variability in when squid of different sizes appear.

-Support inclusion for consideration to evaluate bycatch issues and biological effects of retaining more smaller and immature squid earlier in the year. We have seen some bycatch recently earlier in the fishery.

-If used, would need adjustments to the incidental trip limit to avoid regulatory discards before the start date, especially for freezer boats that may be out for up to 20 days in the winter.

-A start date would allow for orderly maintenance and contribute to safety.

Additional points raised by one or more public included:

-Market forces and availability have dictated the start date for many years – I'm concerned about the unknown consequences if things change that we didn't foresee and we'll have to wait potentially years to fix new problems if negative consequences arise.

-Opposition to a start date – would be counter to FMP objectives to increase flexibility and minimize additional restrictions.

-Length and weight information provided to NMFS should show that early starts have resulted in catch of small animals that have not spawned. During good years, delaying until June 1 will allow plenty of opportunity to catch the quota given available capacity, and avoiding catching immature animals can't hurt the resource.

-We don't know enough about the scientific aspects to tell people when they have to go fishing, especially with more squid showing up further north.

-The start date will take care of itself, especially with other measures being considered.

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MEMORANDUM

Date: September 6, 2019

To: Atlantic Mackerel, Squid, and Butterfish (MSB) Committee

From: Jason Didden, staff

Subject: *Illex* Amendment, MSB Committee Meeting

The objectives for the September 12, 2019 MSB Committee meeting (http://www.mafmc.org/council-events/2019/msb-committee-webinar-sept12) are to:

1. Identify a problem statement to address and the goals the Council wants to achieve through this action, especially in regards to the *Illex* permitting component. This will help the Fishery Management Action Team (FMAT) assess if particular measures address the problem/goals and ensure that the measures cannot be argued to have economic allocation as their sole purpose (which is prohibited). It would be helpful to discuss why recent participation has been problematic and needs to be addressed.

2. Review the initial draft alternatives, and provide direction to the FMAT regarding additional alternative development and analyses. There will be other opportunities to refine/add alternatives, including at the October Council meeting after the Advisory Panel (AP) meets. Based on the input from the FMAT and input from the Council at the June 2019 meeting, staff has drafted an initial set of alternatives in this memo for review and further development. A meeting to gather input from the MSB AP is scheduled for September 23, 2019 and a summary of that meeting will be included for the October 2019 Council meeting. After input from the MSB Committee, AP, and Council, staff will work with the FMAT to refine analyses related to particular alternatives.

1. Amendment Background

The amendment has two components: 1) Consider modifications to the *Illex* permitting system and 2) Consider revising the MSB Fishery Management Plan's (FMP) goals and objectives (all species). The *Illex* permitting issue arose due to increased participation from recently inactive permits and early closures in 2017 and 2018 (this also occurred in 2019). The MSB goals and objectives revision component arose out of the 2014-2018 Strategic Plan objective to evaluate the Council's FMPs and to "Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable" (Strategy 11.2). Since the FMP goals and objectives may guide other FMP decisions, they are addressed first. Staff notes there is a separate effort/working group looking at ways to make in-year adjustments to the *Illex* quota.

2. Goals and Objectives

Staff and the FMAT have previously noted that the Goals and Objectives reflect the policy preferences of the Council. As long as those policy preferences do not conflict with applicable law, the Goals and Objectives are not really a technical matter for FMAT analysis. In June 2019 the Council endorsed an effort to merge the existing MSB objectives with the recently-adopted chub mackerel goals and objectives. The existing objectives/goals, and a draft merged single set follow immediately below.

Current MSB FMP objectives:

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.

2. Promote the growth of the U.S. commercial fishery, including the fishery for export.

3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.

4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.

5. Increase understanding of the conditions of the stocks and fisheries.

6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.

Current Chub Mackerel Goals and Objectives:

- *Goal 1*: Maintain a sustainable chub mackerel stock.
    - *Objective 1.1:* Prevent overfishing and achieve and maintain sustainable biomass levels that achieve optimum yield in the fisheries and meet the needs of chub mackerel predators.
    - *Objective 1.2:* Consider and account for, to the extent practicable, the role of chub mackerel in the ecosystem, including its role as prey, as a predator, and as food for humans.
- *Goal 2:* Optimize economic and social benefits from utilization of chub mackerel, balancing the needs and priorities of different user groups.
    - *Objective 2.1:* Allow opportunities for commercial and recreational chub mackerel fishing, considering the opportunistic nature of the fisheries, changes in availability that may result from changes in climate and other factors, and the need for operational flexibility.
    - *Objective 2.2:* To the extent practicable, minimize additional limiting restrictions on the *Illex* squid fishery.
    - *Objective. 2.3:* Balance social and economic needs of various sectors of the chub mackerel fisheries (e.g., commercial, recreational, regional) and other fisheries, including recreational fisheries for highly migratory species.
- *Goal 3:* Support science, monitoring, and data collection to enhance effective management of chub mackerel fisheries.
    - *Objective 3.1:* Improve data collection to better understand the status of the chub mackerel stock, the role of chub mackerel in the ecosystem, and the biological,

ecological, and socioeconomic impacts of management measures, including impacts to other fisheries.
    - *Objective 3.2:* Promote opportunities for industry collaboration on research.

Suggested New Unified MSB FMP Goals and Objectives:

- *Goal 1*: Maintain sustainable MSB stocks.
    - *Objective 1.1:* Prevent overfishing and achieve and maintain sustainable biomass levels that achieve optimum yield in the MSB fisheries, with specific consideration of meeting the needs of chub mackerel predators.
    - *Objective 1.2:* Consider and account for, to the extent practicable, the role of MSB species in the ecosystem, including roles as prey, predator, and food for humans.
- *Goal 2:* Achieve the greatest overall benefit to the Nation, balancing the needs and priorities of different user groups.
    - *Objective 2.1*: Provide the greatest degree of freedom and flexibility to harvesters of these resources consistent with the attainment of the other objectives of this FMP, including minimizing additional restrictions.
    - *Objective 2.2:* Allow opportunities for commercial and recreational MSB fishing, considering the opportunistic nature of the fisheries, changes in availability that may result from changes in climate and other factors, and the need for operational flexibility.
    - *Objective 2.3:* Minimize harvesting conflicts among fishermen.
    - *Objective 2.4:* Balance social and economic needs of various sectors of the chub mackerel fisheries (e.g., commercial, recreational, regional) and other fisheries, including recreational fisheries for highly migratory species.
- *Goal 3:* Support science, monitoring, and data collection to enhance effective management of MSB fisheries.
    - *Objective 3.1:* Improve data collection to better understand the status of MSB stocks, the role of MSB species in the ecosystem, and the biological, ecological, and socioeconomic impacts of management measures, including impacts to other fisheries.
    - *Objective 3.2:* Promote opportunities for industry collaboration on research.

3. *Illex* Permitting

Staff's understanding is that the Council wants to consider revising the *Illex* permitting system to minimize harvesting conflicts among the participants. Concerns have increased in recent years that reactivation of latent permits is closing the fishery too early, causing a race to fish, and disrupting access for vessels that have participated more regularly (and therefore have higher dependence on access to the *Illex* quota). Accordingly, the Council wants to consider further limiting the number of participants in the fishery to alleviate this issue. NMFS staff identified 76 moratorium permits, and 10 of those are in confirmation of permit history (CPH). CPH permits are "on the shelf" and not currently associated with a vessel, but could be reactivated.

Related to this permitting/access concern, the FMAT provided the following input after its April 2019 meeting: "the benefits related to extending the *Illex* season from a simple permit requalification or even tiering may be short lived. The remaining vessels can increase their effort or fishing power leading to a race to fish. With a quota based management system, the most direct way to end the race to fish is through an individual transferable quota (ITQ). An alternative would be to implement effort control options, such as days at sea limits, trip limits, or closed areas to meet the TAC or extend the season, if the Council is interested in such approaches." The April 2019 FMAT Meeting summary has been posted to the web pages for this action and for the September 12, 2019 MSB Committee Meeting.

Regarding requalification considerations, the FMAT noted in April 2019 that: "Use of the current 2013 control date is reasonable as a potential alternative, but the previous 2003 control date is not reasonable. There should be some alternatives that include landings through 2018 to appropriately consider recent participation. Data since 1997 is the best quality due to mandatory reporting requirements since 1997. Considering trip based, annual ("best year"), or cumulative landings criteria all seem feasible." Since 2019 data will be available by the time of Council decision making, Council staff recommends that one alternative extend re-qualification through 2019 to ensure a reasonable range of alternatives has been considered.

Staff is not aware that the Council is interested in pursuing days at sea limits, trip limits, or closed areas to meet the quota or extend the *Illex* season. These measures also seem potentially problematic given the rapid changes in availability that characterize the *Illex* fishery (they might make optimum yield difficult to achieve on an ongoing basis). Therefore, the preliminary draft alternatives on the next pages focus on ITQs and permit requalification (with the knowledge of requalification's potentially limited effectiveness). These alternatives are designed to explore potential approaches and generate discussion, and are based on approaches from the longfin squid requalification action, where some options went back to 1997 (data is more reliable since 1997 and is more than 20 years ago), some options utilized the 2013 control date, and some options utilized recent landings. The FMAT can develop alternatives using days at sea limits, trip limits, or closed areas to meet the quota or extend the *Illex* season if the Council indicates it is interested in such options.

Non-Requalification Options

Since what happens to non-re-qualifying vessels may affect how the Council re-qualifies more active vessels, it may be useful to consider some possible options for these vessels first. For longfin squid, the Council decided to assign a 5,000 pound longfin squid trip limit for moratorium permits that did not otherwise requalify (above the 2,500 pound incidental trip limit). This provision was designed to recognize their historical participation that qualified them for the original longfin/butterfish moratorium permit. Given that trips under 50,000 pounds have typically accounted for about 5% of *Illex* landings, a possible option could be to provide non-requalifiers with a new permit, that initially had a 50,000 pound trip limit, which could be adjusted in the future if that group of vessels began to utilize an unexpectedly high portion of the quota. Alternatively, a new permit for non-requalifiers could have triggers, for example allowing them 100,000-pound trips until that group caught a combined 10% of the quota, then 50,000 pounds until that group caught a combined total 15% of the quota (10% plus 5%), and then the 10,000 pound incidental trip limit after that. The trigger percentages could also be modified if the *Illex* quotas change in the future. The main point is that there can be various accommodations for non-requalifying permits.

ITQs

The FMAT noted that ITQs would eliminate the race to fish. In doing so, ITQs often reduce bycatch, improve safety, increase profits for ITQ holders, lead to consolidation, and reduce jobs in a fishery. So there are trade-offs to consider with ITQs. A typical option for ITQ quota assignment is based on historical landings, and date ranges of 1997-2013, 1997-2018, and 2010-2019 would all be viable options. To get a sense of how an ITQ allocation might work out, based on 2009-2018 landings, the top 5 vessels landed 66% of the *Illex*, and the top 15 vessels (top 5 and next 10) landed 94% of the *Illex*. The FMAT can calculate similar percentages for various criteria, but based on the nature of the *Illex* fishery, most time spans seem likely to have a similar pattern of landings among top vessels. Another theoretical option is to allocate quota evenly among qualifying ITQ holders, and then allow trading to optimize the distribution.

An ITQ program, known more formally in the Magnuson-Stevens Act (MSA) as a limited access privilege program (LAPP) and often less formally as a “catch share” system, has a variety of other implementation requirements (e.g. issues that must be considered, measures to avoid excessive concentration, transferability provisions, program review provisions, additional data collection, etc.). These would be developed by the FMAT if the Council wants to pursue ITQ options. A clip-out of the MSA requirements for LAPPs has been posted to the web pages for this action and for the September 12, 2019 MSB Committee Meeting.

Requalification Options

Per the MSA, limited access systems must take into account:

(A) present participation in the fishery;
(B) historical fishing practices in, and dependence on, the fishery;
(C) the economics of the fishery;
(D) the capability of fishing vessels used in the fishery to engage in other fisheries;
(E) the cultural and social framework relevant to the fishery and any affected fishing communities;
(F) the fair and equitable distribution of access privileges in the fishery; and
(G) any other relevant considerations;

These considerations would be explored for requalification options that the Council identifies for further development. Some preliminary options for requalification that should allow accounting for present and historical participation are listed in Table 1 on the next page. Table 2 provides a history of vessel participation (based on annual federal vessel permits) and landings over time.

The numbers of requalifiers for alternatives that match those described in the action that requalified longfin squid permits are somewhat higher than in the previous analyses. (No action was taken on *Illex* in the longfin squid permit action, but *Illex* alternatives were included for consideration.) This is due to the previous action tracking vessel permit numbers, while the current analyses trace the movement among vessel permits within and between years via the *Illex* moratorium "Right ID #," which will better predict the final number of re-qualifiers. Re-qualifier numbers are still approximates based on preliminary analyses. Currently there could be 76 vessels total with *Illex* moratorium permits.

In response to a question staff received from an AP member related to this action, in 2019 (preliminary), all trips over 50,000 pounds made up 95% of landings, all trips at or over 100,000 pounds made up 72% of landings, all trips at or over 200,000 pounds made up 51% of landings, and all trips at or over 300,000 pounds (39 trips) made up 30% of landings. Similar detail on just trips over 400,000 pounds may reveal confidential data. Also related, in 2019, based on preliminary data, there were 26 vessels that landed over 500,000 pounds of *Illex* (Table 2). These 26 vessels accounted for over 96% of all landings (25,600 MT out of 26,600 MT total). Based on calls with several AP members to determine the refrigeration types, these included 4 freezer trawlers (two larger and two smaller), 9 fresh/ice vessels, and 13 refrigerated seawater (RSW) vessels. The majority of 2019 landings were from RSW vessels - further breakdowns may reveal confidential data.

Table 1. Initial Requalification Discussion Options and Approximate Qualifiers.

Years	Threshold	Approximate Qualifiers
1997-2013	had at least 50,000 pounds in any one year	43
1997-2013	vessels that have accounted for 95% of landings	around 15-20
1997-2013	had at least one >10,000 trip in any year	46
1997-2013	had at least one >trip size that accounts for 95% of landings (47,000)	less than 46
1997-2018	had at least 50,000 pounds in any one year	50
1997-2018	vessels that have accounted for 95% of landings	around 15-20
1997-2018	had at least one >10,000 trip in any year	52
1997-2018	had at least one >trip size that accounts for 95% of landings (49,000)	less than 52
2009-2018	had at least 50,000 pounds in any one year	38
2009-2018	vessels that have accounted for 95% of landings	16
2009-2018	had at least one >10,000 trip in any year	41
2009-2018	had at least one >trip size that accounts for 95% of landings (53,000)	less than 41

Other alternatives that came up during scoping that may assist with controlling and monitoring landings include adding a hold capacity baseline and adding a requirement for daily *Illex* VMS reporting (many vessels already report daily due to other permit requirements). Like with mackerel, some form of marine surveying would likely be needed in order to establish a solid hold baseline. FMAT members have expressed some concern about the enforceability of vessel hold baselines and will be further exploring this issue.

Table 2. Vessel Activity and Landings Over Time (2019 preliminary)

YEAR	# Vessels 500,000+ pounds	# Vessels 100,000 - 500,000 pounds	# Vessels 50,000 - 100,000 pounds	# Vessels 10,000 - 50,000 pounds	Total # Over 10,000 pounds	Landings (MT) (includes foreign up to 1986)
1982	7	7	0	10	24	18,633
1983	1	8	7	11	27	11,584
1984	4	15	4	6	29	9,919
1985	2	6	4	3	15	6,115
1986	8	6	4	3	21	7,470
1987	7	10	2	1	20	10,102
1988	3	3	1	2	9	1,958
1989	8	5	1	3	17	6,801
1990	12	3	0	1	16	11,670
1991	12	1	1	0	14	11,908
1992	16	1	0	1	18	17,827
1993	19	3	1	3	26	18,012
1994	21	7	5	8	41	18,350
1995	24	5	2	7	38	13,976
1996	24	5	6	4	39	16,969
1997	13	9	2	0	24	13,356
1998	25	4	1	3	33	23,568
1999	6	9	2	10	27	7,388
2000	7	7	0	2	16	9,011
2001	3	4	1	2	10	4,009
2002	2	3	1	1	7	2,750
2003	5	6	1	2	14	6,391
2004	23	5	2	0	30	26,097
2005	10	10	2	2	24	12,011
2006	9	8	1	2	20	13,944
2007	8	2	1	0	11	9,022
2008	12	4	0	0	16	15,900
2009	10	3	1	1	15	18,418
2010	12	3	0	6	21	15,825
2011	17	4	2	0	23	18,797
2012	8	3	2	2	15	11,709
2013	5	4	3	5	17	3,792
2014	5	3	2	2	12	8,767
2015	3	0	1	1	5	2,422
2016	4	3	3	2	12	6,682
2017	14	6	0	0	20	22,516
2018	19	7	0	5	31	24,117
2019	26	7	0	2	35	26,603

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

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

MEMORANDUM

Date: September 26, 2019

To: Council

From: Jason Didden, staff

Subject: Amendment Communications

Several communications were recently received before the briefing book deadline related to *Illex* permit requalification – they are included below.

From: Star2017 <star2017@aol.com>
Sent: Friday, September 20, 2019 11:50 AM
To: Didden, Jason <jdidden@mafmc.org>
Subject: Illex permitting

Hi Jason
Please review my comments below for consideration.

I am currently an Illex permit holder and I have been in the squid fishery for nearly 40 years. I would like to support a tiered system for Illex permits.

The reason I support a tiered system is to protect the current large capacity vessels that have landing history before the control date. The fishery with the current quota cannot support any more large capacity vessels.

A tiered system would alleviate this potential issue of too many large capacity vessels entering into the fishery.

Please consider a tiered system approach when determining the Illex quotas and permitting requirements.

Thank you.
Chuck Weimar
F/V Rianda S
Montauk NY

From: Jim Lovgren <jlovgren3@gmail.com>
Sent: Sunday, September 22, 2019 10:21 PM
To: Didden, Jason <jdidden@mafmc.org>
Subject: Re: MSB Ongoings

Jason, I was hoping to be able to join in on the discussion tomorrow on the Illex amendment, but I just can't participant right now as I am in the middle of some boat renovations that I'm already behind on since the welding shop doesn't work weekends, and I need to get them finished ASAP. For the record I only possess an incidental permit for Illex, and have never targeted them nor do I plan on it, so my observations will be in general and are from an impartial standpoint utilizing my long history in fishery management.

First regarding goals and objectives, I find that while they all sound well and good in their bureaucratic vocabulary, in the real world its just scientific *[redacted]* particularly in the case of Illex and Loligo squid. These two species live less then one year [although that life span has changed regularly depending on who is in charge of the science] so any thought that you can estimate recruitment and population is simply egotist crap from from a scientist who thinks he can count every fish in the ocean. There should be absolutely no catch limits on either Loligo or Illex squid as it is impossible to predict what their annual population is because while you're busy counting, they are busy dying of old age, if they're there, lets catch them and help our fishing communities survive.

I think the main problem that the Illex fishery faces is the fact there there was never a vessel upgrade limitation in place unlike most other mid Atlantic fisheries. Unlike the loligo fishery which had a substantial amount of participants both directed and incidental, or State permitted, the Illex fishery has been limited throughout the years by the fact that Illex do not stay fresh for long and the fishery takes place in the offshore waters eliminating small vessel participation. Consequentially there are less then 100 permitted vessels presently. Many of them have no landings for 2 decades, yet the spectre of latent permits being activated to take advantage of the recent spike in Illex prices has the present participants in that fishery rightly concerned. Conversely those that do have that permit that they did originally qualify for are also concerned about losing assess to a fishery that they used to participate in. I think the important point in this permit issue is that the historical fisheries of the Mid Atlantic/ southern New England region has always been based on multispecies participation, years ago no one specialized in any one fishery they changed fisheries like a person would change clothes because of the migratory nature of the MA/SNE fisheries. Whether you fished for a certain species for a few weeks, or months or even years generally depended on the fishes availability and the price you could attain from them. NMFS and the Fishery Management councils have blatantly failed to acknowledge this multispecies aspect to the fisheries and has for years forced fishermen into one fishery or another while stealing their ability to fish in their historical mode by taking their permit if, in their judgement they haven't participated enough. I look at the vessel upgrade issue which is now defined as fish hold capacity and know that this is a serious problem. I relate it it to the person who pays for a volkswagon but expects it to be a mercedes. If you want a Mercedes then buy one, a 50 foot boat should not be allowed to become a 150 foot Henry Bigelow white elephant, then be dependent on that fishery and cry that they need all the fish or they're go out of business.

I'm a firm believer in control dates and the present control date 8/2/13] is not stale so anybody that has become a participant after that date should've been very aware of it and the risks involved in investing in that fishery after that date.

Personally I support the 50,000 best year option using the years from 1997 to 2013, because that uses the longest time frame for participation before the control date, but I can understand going beyond the control date as it involves only a few more vessels. The big thing is stopping the Volkswagons from becoming Mercedes so fish hold capacity is the critical point. Thanks Jim

-----Original Message-----
From: Hank Lackner <jdhlcl@aol.com>
Sent: Wednesday, September 25, 2019 12:38 PM
To: Didden, Jason <jdidden@mafmc.org>
Subject: Illex squid public comments

Dear Council Members,
My name is Hank Lackner, I am the owner and operator of the purpose built Illex squid trawler, F/V Jason & Danielle..I am sending these comments today to enlighten committee and council members of some of the issues traditional Illex boats are now facing.

I would also like to point out I was the one who foresaw the current latent effort issue two years ago. And if nothing is done this time we will have a fishery no one will be proud of.

Since the day it was built, my vessel has done nothing but Illex squid fish from late May until late September. That is until recently.. As we are all aware of. The quota has been filled in each of the last 3 years resulting In a mid August closure. In fact, in 2017 the quota was caught by just 20 vessels! Those vessels being the historical fleet. The boats that rely on this fishery year in and year out. In other words IN 2017 THE FISHERY WAS ALREADY FULLY CAPITALIZED!!!!!

I have fished for Illex squid during times of low abundance as well as low price in an attempt to gain access to worldwide food markets. Yes, the historical participants have suffered alot to finally make Illex a species worth targeting..

The early closures I speak of are a direct result of what one might call speculative or opportunistic vessels.. (I will describe new vessels in the fishery as latent vessels) These latent vessels I speak of, could not have cared about Illex squid at any time but the last two years. They carry many other permits and have always found a way to survive..These OPPORTUNISTIC LATENT VESSELS have caused my boat-and the twenty or so other historical vessels to lay idle for months at a time, when i would normally be harvesting Illex squid.

I am asking the council to move forward with this amendment.. I am also asking you to please use the CONTROL DATE of 2013. This will help our historical fleet.

When looking at qualifiers please keep in mind illex is a high volume fishery. In this fishery 500,000 lbs and 1,000,000 pounds of landings are not big numbers for traditional vessels.
I am also asking that a TIERED SYSTEM be implemented. Similar to the ones used in Mackeral and loligo squid... By doing so, new entrants to the fishery will not be eliminated, they will just be fishing at a different threshold..

Also please support the committee motion to remove the 10,000 lbs qualifier from the analysis as well as the removal of 2019 landings.
10000 lbs is the current incidental trip limit(not a directed trip).. Vessels with only 2019 landings were just trying to establish some form of catch history.

Industry was put on notice in 2003 with a control date and it was reaffirmed in 2013. As well as illex being looked at at as a possible species for permit requalifying in 2017!!
In closing vessel dependency should play a large role in your decision process. EARLY CLOSURES WILL EVENTUALLY LEAD TO VERY LARGE VESSELS ENTERING INTO OTHER FISHERIES where issues already exist..

Lastly and most importantly, the council needs to look at a FISH HOLD BASELINE measurement to freeze effort of any qualifying vessels. This is a very important component otherwise all efforts made in this amendment will be compromised..
Thank You,
Hank Lackner

-----Original Message-----
From: Leif Axelsson <fvdyrsten@yahoo.com>
Sent: Wednesday, September 25, 2019 8:46 PM
To: Moore, Christopher <cmoore@mafmc.org>
Cc: Didden, Jason <jdidden@mafmc.org>
Subject: Illex squid public comment

To Chris Moore and council:

My name Leif Axelsson, MSB Ap member and Captain of the F/V Dyrsten a family owned business out of cape may NJ. I am sending this email to you and the council for my public comment on the upcoming Illex re permitting.

I am a 3rd generation squid fisherman our family has relied on Illex and long fin squid fisheries since the early 80s. Our boat the Dyrsten is a purpose built squid trawler and has been since the early days of U.S. caught and U.S. landed Illex squid, it was part of the joint venture days of Illex squid and one of the first to bring Illex squid to a U.S. shore side facility, and one of the first U.S. freezer boats along with Seafreeze. Our family used to own 2 squid vessels but because of restrictions and other reasons we ended up selling the F/V Flicka 4 years ago. I guess what I Am saying is that my family has invested millions of dollars into the Illex squid fishery over the years, we fished for them when they were considered a trash fishery and not worth it by many of the boats that are now entering into the fishery, and in doing so we lost our ability to participate in the very same fisheries that they can and will if it suits them better should the Illex not show some years. We used to be able to fish Illex until October November but are now sitting idle from august on the last few years, we have perfected a method of catching Illex and it has been a very clean fishery over the years. But in recent years that cleanliness has been strained by latent effort boats getting into the fishery (Im sure the observer data will confirm) which can cause problems down the road.

The capacity is there in the traditional fleet (the 24 permits that account for 95% of the landings since 1997-2013) to harvest the quota and more if we were allowed to the only restrictions have been availability and market. My family and I have fished for Illex even when we lost money (along with the Traditional shore side facilities) in doing it, just to keep a U.S toe hold in the markets that we had. In the last few years we have more and more permits getting involved that have never relied on Illex, they are opportunistic and do not truly rely on Illex to survive like we do.

We support a tiered system because we do not believe every one should be shut out completely but that the ones who made this fishery what it is today should not have to suffer early closures because of opportunistic latent effort permits jumping into the fishery. The Illex fishery is a high volume fishery and landings of even a million pounds are NOT big numbers for traditional vessels in this fishery, a 10,000 pound qualifier should not even be considered (its an incidental amount anyway). If the only year a vessel has to qualify for is 2019…. is that vessel truly dependent in Illex? Should he be given the same as a vessel that has landed Illex squid consecutively since 1997 or the early 80s for that matter. Also 2013 is not he first time a control date was put in place, 2003 was put in and re confirmed in 2013 (also the first qualifier was put in in the 90's for the moratorium permits) so anyone buying into or getting into the FISHERY AFTER 2013 WAS WELL AWARE OF THE RISK THAT THEY WERE TAKING. Any vessel that has recently got into the fishery has only done so because of the opportunity and will switch out of this fishery and into another one as soon as it doesn't suit them leaving again the traditional vessels to carry on (like we did when they were not worth fishing for) and keep the markets viable at yet again ours and the traditional shoreside plants cost. Because of these early closures it has been forcing the "offshore" boats to consider inshore fisheries as a way to stay viable. We have spent millions and sacrificed more to become effective offshore vessels (and would like to stay that way) but because of the recent early closers we are having to look into the late summer early fall inshore fisheries just to keep the wheels turning (the very same fisheries that the bulk of the latent effort permits would lose there minds if we decided to get into)

In closing we do support a tiered system for this fishery as a fair way to to allow access while protecting the traditional permits in the fishery. But we do not support the recommended 100,000lbs minimum for any boat that qualifies for less than a tier 1 permit most tier 1 qualifying permits can only carry that amount and that would not be fair to them (a 50,000lbs trip limit would make more sense if a boat does not make a tier 1 and it would still be finacaly viable). We do support the committees decision to remove the 10,000lbs qualifier, in this high volume fishery that is not considered very much, and very far from what a traditional Illex boat has and will do on a yearly basis. We also support the decision to remove the 2019 landings as any form of qualifying, for a permit to only make qualifying by one year of fishing hardly constitutes any form of dependency. We would like to see the council move forward with this amendment and use the 2013 control date, as said before this was not the first control date and the public and others were made well aware that Illex permitting was up for a change so no surprises for the people just getting into the fishery, a potential for a change was made public a long time ago (why did it take 16 years for people to care about Illex all of the sudden? Obviously they were not depending on Illex then or for the last 16 years so why do they need it so bad now?) The traditional fleet has become very efficient at maximizing this fishery we work with the markets the seasonal availability. We have spent years in honing our skills as a fleet to keep by catch extremely low (which observer data will back up) that latent efforts could compromise by lack of experience and by creating a race to fish. And that could cause problems for the fishery in the future. Latent effort permits will also force a traditionally offshore fleet into inshore fisheries which will cause user conflict issues but what options will we have. I urge you to consider all of this as this goes and hopefully does move forward in the process.

Thank you,
Leif Axelsson

From: captjimmy@aol.com <captjimmy@aol.com>
Sent: Wednesday, September 25, 2019 11:05 PM
To: Moore, Christopher <cmoore@mafmc.org>
Cc: Didden, Jason <jdidden@mafmc.org>
Subject: Fwd: ILLEX COMMENTS

GREED!!!!!!!

To the Council

I am not a scientist , I will admit I'am not the smartest , Honestly to stay in this industry must be pretty stupid at times , but this is the cards I'am dealt. I am though a common sense person/owner of 2 Illex vessels. A lot of the times thats what gets looked over COMMON SENSE. What I am about to write may not make any sense of all. . Be warned there will be some misspelling and scatter brained thinking as I type , but it should be understandable..

I was dialed in to a webinar on 9-23-19 and like the title says above GREED thats what I got out of it. Processor/ Fleet owners and a couple individual owners serving on an AP wanting to make fishing schedules, catch limits and qualifications based on their needs not a fishery in WHOLE. Dont totally get me wrong there were some good points made and some good feed back butt.

Actually it seemed like 2 processors reps, and a couple individual owner getting together to take control of a fishery, Just saying

Some examples
Start dates and by catch/incidental landings
Some people want a start date. No real reason scientific wise from what I gathered . One fisherman likes doing his maintenance in May. So a start date in June would fit their individual schedule. The other group want it because they said we would be taking juvenile fish , but then minutes later the same individuals made suggestions of a higher by catch/ incidental catch rate of ILLEX and accumulative D.A.S. for their lolligo freezer boats in the winter .. Winter time is when the ILLEX are the smallest and in my experience deeper then the lolligo . You get too deep you get ILLEX shoal up more Loligo. So the contradiction is ..... They want a start date of June cause they feel any time earlier is killing juvenile fish and not really marketable, but then put a suggestion of a higher by catch / incidental rate increase when the illex are the smallest !!!????. WHICH IS IT ??? Cant have it both . ill tell ya what it is a certain group also participate in another high volume fishery in the spring and begining of summer and they will miss out on a piece of the pie. The council should be very wary of this . The by catch / incidental catch of ILLEX should stay at 10,000 LBS per trip. Anything more that its a directed fishery and will be exploited . Thats a guarantee!! No start date! Plan your maintenance and fishing schedules accordingly. and dont try and figure out a back door way around knocking down a quota. If the fish are marketable in MAY so be it. they are there to catch. They get older by the day and are closer to death day by day.This stock seems like they now stretch from the Canadian border to the southern boundaries of the Carolinas. We really need to update the science and the stock before we put fisherman and certain markets out of business.

Also on the Race to fish issue and safety. I think a start date puts a bigger strain on the race. You will have 50 boats sitting on a line at one time . No start date leaves flexibility and spread out of boats departing. Most people also out there have safety on the top of thier list.

Qualifiers
When purchaisng my permits i did my home work . I was told make sure to have landings before the control date. Know one said how big of landings. Just make sure ya have some you sould be fine . HA HA HA
I have 2 illex permits. One that what I thought to be very good landings which looking at some the options in qualifying chart has me wondering. The other not so great . Both permits fished before the control date and after.
AS stated in a previous comment sent in I do believe some control needs to be taken in this illex fishery. I do beleive we need to get the 0 pound landings disqualified as of 2019. I am gonna step back on my previous comment during previous scoping hearings. I commented on a 2016 control date. I would like the Council to consider 1997- 2019 vessel with a 50,000 pound landed in a given year qualifier. Here is why.. One of my permits would qualify in the 1997-2013 or from 1997 to present in 3 of the 4 options and misses one of the more restrictive by about 5000 short of (1,000,000) . The other would qualify before control and make it with the less constrictive options . Here is the thing i am an ice boat . Most processors dont take ice boats . I've asked . I have an email from one processor saying no . I had another conversation with another processor telling me no , but they would like all my other fish and scallops though HA. i live in NJ and my boats have

to participate in this illex fishery having to fish in RI and NB .Why? Because out of the 3 bigger players Lunds, Seefreeze and TownDock . Town Dock is the only processor that accepts ice illex TownDock vessels and some RI vessels have brought back an iced illex fishery. Some of these vessels do have weak landings , but i do believe it was due to the incapability of landing when a RSW fishery took over. .Not all of us have endless $$ to tie boats up for 6 months pay up to $600,000 in RSW upgrades The boats up here have not only developed an iced market , but a food market. If the council decides to make qualifying very restrictive you will not only take fisherman away , but also a whole developed market. I guess also it would be very hard for me to maintain landings with out a market. No boats , no fish = lost market = no place to pack. Just like what has happened time and time again. You restrict a fishery you loose markets , boats and processors.This has happened in Summer Flounder , DogFish n Ground fish then years later it miraculously gets given back or becomes less restrictive years down the road when the markets are gone and the cutting houses and docks have closed . Also does the council really wanna see this come to a 13 boat operation where big fleets and big business prevail who also are selling out or have been sold to NON American Companies. Competition in markets is good it keeps everyone honest.

On another note the development of this north east illex fishery took some strain off the Nantucket Lolligo fishery. Nantucket did have one of their longer Loligo summer seasons in a while with 10-12 or better less boats there. Remember take a fishery away more stress gets added to another. I believe this is one of the reasons why the whiting fleet did not go through a re qualification.

The ice fishery up here east of block canyon is hard , timely and costly. Weather you catch or not you have $2000 a trip in ice alone.. but it works. We get by. It takes 15-18 hours from RI or NB to the grounds. We only fish 1 daylight maybe part of 2nd daylite then its 15-18 hour steam in. Then pack, clean re ice back out. if your lucky you might get 3 landings a week , but for the most part 2 landings in a given week. . Most of the ice vessels up here stock and catch in one season what the southern larger vessels due in a week or 2. The Cape May steam is 8 hours . These larger vessel have 250,000-500,000 lb hole capacity back in and back out in a day when the season is rocking . Like I said earlier GREED is what's driving this push . Do the " Common Sense" math thats $100,000-$200,000 a trip What they do in 2 weeks takes some of these smaller entities a season to do . So excuse me if i am not shedding a tear. Dont take it wrong i respect them but some of them chose not to be diversified and put some of there eggs into one basket.. Actually in looking at a memorandum from Sept 6 2019. I am seeing that in 1994-1996 there was more vessel representation then 2019 . it worked then it can work now. Make the qualifier low and let everyone get a piece of this expanded fishery.

I do not believe in a tier system. I should have the same opportunity to up grade, stretch , convert and change my vessel legitimately every way possible within the current regs and laws just like alot of these bigger fleet owner/processing comapnies and some of these people that also serve on the AP have just done to some of their vessels before slamming the door shut. on others and myself.. " What's good for the goose should be good for the gander. "

I do not support a tier system . Everything should be a level playing field

"If there was a tier anything less than 150,000 lbs is not acceptable .As stated earlier this fishery up north is a time consuming one and has less landing capability as others. .

With all that being said ii would like to ask the council too look at the individual vessel participation years 1997 to present in vtr chart areas 533,534,541,526,525, 537, 552. and compare to the southern canyon chart areas . I think you will find the fishery is starting to grow with a larger availably of a stock that really isn't being accounted for.

In closing i am asking the Council dont rush an amendment out of what seems to be a GREED driven push on an amendment, Lets get the Science, Economic, and Environmental studies done properly. Let the Illex steering/assessment team do their jobs. Lets get real assessment of the stock that appears to be in the canyons from the Canadian border to the Carolinas. Lets not take away jobs , and newly developed markets with out facts . Best approach move the control date ,eliminate the 0 pound permits and lets get the rest of this rite

Thank You
Jimmy Elliott

F/V Maizey James
F/V M.F Hy-Grader

Virginia Seafood Council
P. O. Box 2
Kilmarnock, VA 22482
vaseafoodcouncil@gmail.com

Dear Dr. Moore:

Regarding the current Illex Amendment the Virginia Seafood Council thoughts are as follows:

- I support focusing on the qualification range of 1997-2019 and a best year qualifier of either 50,000 lbs or 100,000 lbs.
- I do not support tiers to further restrict certain participants in the Illex fishery.
- I do not support a hard start date.
- I do not support vessel capacity limitations.
- I support no permits be removed until the Council has reviewed findings from the Illex Working Group

The Illex stock seems to be healthy, and my belief is that the current quota is too low. Once the Council has had an opportunity to review scientific data collected by the Illex Working Group, I believe it will see that the issue is not too many permits, it's a low quota.

Increasing the quota, rather than removing permits, will keep the fishery competitive, keep fishermen employed, and keep communities working and not turn the Illex fishery into a monopoly.

Sincerely,

Meade Amory
Board Member
Virginia Seafood Council

Atlantic Capes
FISHERIES, INC.

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MAFMC
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Dover DE 19901

RE; Illex Permitting MSB FMP Goals and Objective Amendment

Council and Staff,

Atlantic Capes Fisheries Inc. (ACF) owns and operates vessels that are permitted for Illex with historical participation.

We are opposed to enforcing the 2013 control date at this time. Doing so would cut the fishery participation down dramatically. It would cut it almost in half and if high qualifiers are used the participation could be down as low as 13 vessels.

We feel that this is a purely economic decision in violation of the MSA and no action should be taken. The reason for the proposed action alternatives is based upon the quota being caught a few years in a row. This represents a robust fishery. There is capacity in the fleet to catch the quota just as in other fisheries, but eliminating a portion of the fleet for the sole purpose of earlier participants catching more is purely an economic decision.

There are no biological, bycatch or discard problems with this fishery. In fact, there is a working group seeking to be able to raise the quota dramatically because of the robust nature of the fishery. If participants are reduced and the quota is increased this will result in a windfall economically to those who are allowed to stay in the fishery.

If the council feels they must push forward on this economic decision, then we propose qualifying years from 1997-2019 to allow all current participants that have invested in this fishery even in recent years to see a benefit from their company's economic decisions. The qualifying pounds should be 50,000-100,000 pounds' in any one of the years. This will take out permits or capacity by 30% by ones that have not economically befitted from the fishery, thereby accomplishing the intended purpose of reducing capacity while not effecting the viability of those that currently do benefit.

We are against any type of tiered system for those that may be considered as lesser qualifiers after 2013. Tiers likely will be chosen amounts that it will not make those trips profitable in a cheap ex-vessel price fishery.

Thank you for considering my comments.

Sam Martin
Atlantic Capes Fisheries Inc., COO

Dear Mid Atlantic Council,

I am writing again about the Illex Amendment. We're upping the quota and the stock has such a large range I don't understand why we are trying to remove people from a fishery that have already qualified. Other than coming from a strictly economic reason and trying to remove competition there is no other reason to remove permits from this fishery. Your job is to look out for the fisheries and fishermen as a whole, not protecting special interests, but I don't know what else to make of this.

I hope you can see that the people who are asking for limits on vessel capacity just finished increasing their own capacity. And I hope that you can see that the two-tier system never shakes out fair. It all just looks like some people trying to limit competition. And then you add in some other things, like the hard start date, to try to make it seem more like that is for the fishery. Let's wait and see what the Illex working group has to say about the science before we rush in to restrict permits on a species that is doing just fine.

Although I vote no action, it seems that the Council is moving forward with this, so I hope you focus on a best year qualifier of either 50,000 lbs or 100,000 lbs and a qualification range of 1997-2019. It seems like a compromise if there must be one on a problem that doesn't seem to exist.

Sincerely,

Steve Follet

F/V Heather Lynn

Steven P Follett

F/V Heather Lynn

Dear Director Moore,

As active Illex fishermen we would like to take this opportunity to comment on the Illex Amendment.

This Amendment aims to reduce the number of permits for a fishery that is so plentiful that the quota has been increased. There is simply no reason to remove permits under these conditions.

Having said that and seeing that the Council is moving forward with this Amendment, out of the alternatives presented so far, I think a qualification range of 1997-2019 and a best year qualifier of 50,000 lbs would be the best option.
With those options you're not cutting out those who have been actively fishing Illex and rely on it to make a living.

We don't support tiers to restrict the Illex fishery. Having two tiers will only mean more squid for the few large vessels.

We also don't support a hard start date. We all need flexibility to begin fishing when we're ready.

Vessel capacity limitations only limits competition. Anyone in favor of this has already increased their vessel capacity.

If anything, the quota should be reviewed more closely before making decisions that will reduce competition and negatively affect people's livelihoods. This is a very important decision and there is a group working on collecting data to find out more about this species and perhaps even increase the quota even more. It seems like it would be wise to wait for more information before the Council makes any major changes.

Sincerely,

F/V Determination – David Monahan

F/V Excalibur -Phil Merris

F/V Lightning Bay -Jeff Wise

F/V Rebecca Mary – Kevin Ralph

F/V Susan Rose – Jamie McCavanaugh

Seafreeze Ltd.

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

September 25, 2019

Comments Re Illex Permitting Amendment

Dear Council Members,

Following September's Committee and Advisory Panel meetings, we offer the following comments:

We continue to maintain, as detailed in our scoping comments, that we support a permitting system consistent with a permit holder's historic participation in the fishery prior to the control date. Unlike many of the Mid Atlantic Council's other managed fisheries, the illex fishery has been comprised of a small number of participants over a very extended time frame. According to the SSC, most of the landings during 1996 to 2015 were harvested by 6 to 15 vessels.[1] According to Council staff's Committee Summary, 95% of total landings from 1997-2013 were harvested by 24 vessels.[2]

Seafreeze vessels were specifically designed and built in the 1980s to target illex. Our vessels have harvested illex every year for over 30 years. From 1997 to 2013, the two Seafreeze vessels accounted for 40% of all illex landings in the United States. In some years, our vessels accounted for 86%, 83%, 71%, 55%, etc., of all U.S. illex landings in any given year. The illex fishery has been an integral part of our entire business plan, freezer facility, sales strategy, fishing plan and hundreds of millions of dollars of investments for over 30 years.

However, due to activation of latent effort from 2017-2019, our vessels have been tied to the dock for 3-4 months a year for 3 years in a row following unprecedentedly early closures. While our vessels normally target illex from approximately June-October/November, we have now lost this opportunity and several months of fishing. We no not have any other options.

This exact scenario is one of the reasons listed in the Magnuson Stevens Act for establishment of a limited access system. The MSA states that the Council, in developing such a system, take into account "the capability of fishing vessels used in the fishery to engage in other fisheries".[3]

At Seafreeze, we do not have any other options. Our vessels and business are dependent on the illex fishery. We cannot transition to go fluke, scup, black sea bass, groundfish, scallop, etc., fishing once the illex season closes. That is why our vessels are tied to the dock for months every year following an

[1] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5ad7b1f8562fa75adb8ba50a/1524085242200/Illex+illecebrosus_data_update_report_for_2018_MAFMC_SSC_ABC_meeting.pdf, p. 2.

[2] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5d84e60a7cad0a24b53a5436/1568990730382/2019-09-12+Committee+Meeting+Summary.pdf, Table 1, p. 8.

[3] MSA Section 303(b)(6).

early closure. We do not have other species that our vessels can target during this timeframe. Other species that our vessels are built to target are not available offshore until winter. Our vessels are designed to fish offshore, not nearshore; and due to our vessel size we are actually excluded from some fisheries available to smaller vessels. The Seafreeze Ltd. land-based facility was purpose-designed to receive frozen product from the two Seafreeze freezer vessels. It cannot receive fresh product. Our building does not therefore have the opportunities open to other processor/dealers of continual product flow from various sources. Once the Seafreeze vessels are tied up, the Seafreeze Ltd. dealer facility becomes dormant.

Considerable discussion at the Committee and AP meetings took place regarding "dependence" on this fishery, from both a vessel and processor/dealer perspective. In our opinion, there is a marked difference between "opportunism" and "dependence". Vessels and processor/dealers who took advantage of the unprecedented availability of the stock and unprecedented high prices during 2017-2019 are opportunistic, but are not dependent. In all years prior to 2017, these vessels and processor/dealers were targeting and marketing other species. Their existence and revenues did not depend on illex. Their business strategy centered around other fisheries, other stocks, and these "new entrant" entities still have those options available to them. They will not go out of business should their access to the illex fishery be restricted. These vessels will not be tied to the dock for 3-4 months at a time should the illex fishery close early. They have other options, i.e., the fisheries in which they have always historically participated during the summer/fall months. The same is true for recent entrants on the processor/dealer side; these facilities have been built on product of fisheries from which they have historically purchased. Years marked by opportunism such as occurred in 2017-2019 should not be translated into "dependence" on the illex fishery.

This does not mean that all opportunity in the illex fishery for non-historic participants is lost should the Council restrict permits via the Illex Permit Amendment. Vessels with historic landings have been, and are, available for investment. As is the standard practice in any U.S. fishery, particularly one with a control date, true investment in any fishery involves researching and availing of permits with history before the control date. This is not a new concept, or foreign to anyone in U.S. commercial fisheries, whether owner/operators or vertically integrated entities. While recent landings may be considered in some form of access, the fact that they do not necessarily qualify for the same access to a fishery demonstrated by historic landings prior to a control date is widely understood in the commercial sector. This is standard methodology employed by the Mid Atlantic Council for management actions, including the recent longfin amendment, which is also well understood by commercial fishery participants in the MSB fisheries.

Currently, the number of historic participants already have the capacity to harvest the quota. Although only a fairly small number of latent permits compared to the total existing 76 illex permits were activated in 2017-2019, this activation alone has resulted in consecutive early closures, to the detriment of historic illex participants which were consequently prevented from availing of a full season.

Below are our comments specific to the Council staff Draft MSB Committee meeting summary presented at the MSB AP meeting:[4]

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[4] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5d84e60a7cad0a24b53a5436/1568990730382/2019-09-12+Committee+Meeting+Summary.pdf.

1 . Illex Permitting Goal:

We do not see the Illex Permitting Amendment as being substantially different than the recent longfin squid Amendment 20/Squid Capacity Amendment, with the exception that in the longfin amendment the Council took action to limit permits based on speculation that latent effort could close the fishery early, while in the illex amendment increased recent participation has closed the fishery early for 3 years in a row.

Amendment 20 was originally entitled the "Squid Capacity Amendment" in the Scoping Guide and subsequent meetings and Council materials.[5] The reason that the Squid Capacity Amendment was initiated did not involve Trimester 2 or additional issues, which were only added later during the Amendment process and considered in a separate section.

The original longfin squid Amendment 20/Squid Capacity Amendment Scoping Guide, under the heading "Why is this action being proposed?" stated, "The Council is proposing to develop this amendment because there is considerable latent capacity in both the longfin squid and Illex squid fisheries. In most years, the majority of landings are harvested by a small portion of vessels with limited access permits. The Council is concerned that activation of the existing latent capacity could cause problems such as shortened seasons and increased incidental catch of non-target species. Although participation has not increased in recent years, the possibility of effort transfer from other fisheries exists. This could negatively impact current participants if quotas are caught more quickly, causing closed seasons. In addition, if excess effort causes a "race to fish," there could be an increase in non-target species interactions that could lead to other restrictions for the squid fisheries".[6] The only initial amendment options presented were permit requalification, tiered limited access system, and limited access privilege programs (LAPPs). [7]

In the Final Amendment 20 EA, the document states, "In this Amendment….the Council considers measures to reduce latent (unused or minimally used) longfin and illex squid permits…" and the Council's preferred alternative, which later became regulation, defined whether these permits were unused or minimally used based on their fishing history prior to the fishery control date of 2013.[8]

The Final Rule of Amendment 20 states, "The Mid-Atlantic Fishery Management Council is concerned that unused longfin squid/butterfish moratorium permits could be activated. This could lead to excessive fishing effort, which could lead to premature fishery closures and reduced access to available longfin squid quota by vessels with a history of higher landings in recent years. Excessive effort may also increase the bycatch and discards of both longfin squid and non-target species."

In the illex fishery, we are not dealing with potential early closures or potential activation of latent permits which were inactive prior to the control date; we are dealing with the reality.

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[5] See Scoping Guide at https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5519af61e4b043a1fee2d29d/1427746657099/Squid+Capacity+Scoping+Guide.pdf and Squid Capacity Amendment tab at the June 2016 Council meeting: http://www.mafmc.org/briefing/june-2016.

[6] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5519af61e4b043a1fee2d29d/1427746657099/Squid+Capacity+Scoping+Guide.pdf, p. 2.

[7] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5519af61e4b043a1fee2d29d/1427746657099/Squid+Capacity+Scoping+Guide.pdf, p. 2.

[8] See EA document at https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5c113b1f70a6ad290cf75cfd/1544633161550/20181018_Squid-Amendment-Final+EA.pdf. See Council's preferred alternatives at http://www.mafmc.org/newsfeed/2017/mid-atlantic-council-approves-squid-amendment.

2. <u>Comments on Committee Motions Regarding Alternatives</u>:

A. *"I move to recommend removing all the options that use a 10,000-pound single trip threshold (under any time period). Nolan/Gwin, 5/3 Motion Passes (Motion from Committee, Council action needed)".* We support the Committee motion. Ten thousand pounds is the incidental, open access trip limit. An incidental limit available to all GARFO permit holders should not qualify for access in a limited access, high tonnage fishery such as illex.

B. *"I move that the Committee recommend removal of qualification dates that extend through 2019. Nolan/Gwin, 6/1/1 Motion Passes (Motion from Committee, Council action needed*)". We support the Committee motion. This amendment was already ongoing in 2019. Vessels which only entered the fishery in 2019 were fishing solely for history, for the purpose of amendment qualification. In our opinion, this is an unacceptable metric for inclusion.

3. <u>Council Staff Recommendations for analysis (Tiered Permitting Options):</u>[9]

A. *"2 standard options for non-requalifiers for further development: the current open access trip limit (10,000 pounds) or a new permit with a trip limit of 20,000 pounds to acknowledge their original qualification."* We support this analysis and it is consistent with previous Council action. We believe that following the format of the longfin Amendment 20/Squid Capacity Amendment re-permitting and requalification is appropriate. In that action, the Council created Tier 1 permits for historic participants with unlimited access, Tier 2 permits with trip limits of twice the current incidental/open access trip limit (which in the case of illex would be a 20,000 lb trip limit), and then a Tier 3 permit of the current incidental/open access trip limit (which in the case of illex would be 10,000 lbs).

Some discussion was had at the AP meeting creating an illex tiered permitting system that would not resemble the action taken in longfin. In that discussion, a tiered illex permitting system was suggested where Tier 1 permits would retain unlimited access, Tier 2 permits would have a currently unspecified trip limit, which was suggested at 100,000 lbs, and Tier 3 permits would have a 20,000 lb trip limit. According to our knowledge of vessel capacities, this type of permitting system would continue to present the same problems that the Council is trying to address.

There are vessels with significant historic participation in this fishery, i.e. would-be Tier 1 permits, which only have a capacity themselves of approximately 100,000 lbs. Additionally, a vessel with a 100,000 lb hold capacity is capable of harvesting millions of pounds of illex in a given season. Allocating this type of trip limit to a Tier 2 permit would not prevent early closures or the other issues the Council is attempting to address. It is also important for the Council to note that last year, some smaller vessels profitably directed on the 10,000 lb incidental/open access trip limit in certain areas.

B. *"Another permit level, that could be combined with the 2 standard options above, where permits that don't requalify but have some higher level of recent participation would get a higher level of access than the standard (10,000-20,000 pounds) options, to acknowledge their present participation. This may principally apply if the control date is used. Trip limit and/or sub-quota percent limitations (like Atlantic mackerel Tier 3) could be developed by the FMAT."* We support this analysis and it is consistent with previous Council action.

4. <u>Fishery Start Date:</u>

A fishery start date may be a workable option for the RSW fleet, which stays out at sea for 2-3 days at a time, but would create unintended regulatory discards for our vessels. Our freezer vessels stay out during the winter months at the beginning of the fishing year for up to two weeks or more at a time.

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[9] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5d84e60a7cad0a24b53a5436/1568990730382/2019-09-12+Committee+Meeting+Summary.pdf p. 7.

During these months, we are targeting various other species, but may encounter illex in doing do, particularly on high availability illex years as we have seen the past few years. We do not want to create a situation where we would be forced to discard this fish. Should the Council further develop analysis of this option, we would request an exemption for freezer trawlers, or a daily incidental catch limit for freezer trawlers that could be cumulative over the course of a trip so as not to create discards.

We respectfully request that the Council continue to move forward with this Amendment to prevent continued new speculative entry into this important fishery to the detriment of historic participants. Thank you for your consideration.

Sincerely,
Meghan Lapp
Fisheries Liaison, Seafreeze Ltd.

2 State Street | PO Box 608
Narragansett, RI 02882

Dear Director Moore,

I am writing regarding the *Illex Permitting and MSB Goals and Objectives Amendment*.

The Town Dock has been a significant buyer and processor of illex squid for many years. We purchase illex from our owned fleet of illex permitted boats, independently owned illex permitted boats, and other shoreside processors of illex squid.

Illex squid is a success story. The TAC is being maximized, reaching optimum yield; vessel price has increased over recent years; vessel permit value has multiplied several times (once thought to be worth $25,000, illex permits are now worth hundreds of thousands of dollars); and overall profitability supports reinvestment back into the fishery and infrastructure. Part of what is driving this success is the fact that the marketability of illex has expanded. Illex squid now enjoys a wide array of demand from the traditional bait markets and into the food markets worldwide. We expect this to continue for this important resource.

At the highest strategic level, we believe that economics is the main underlying driver – possibly the sole driver – of this recent Illex Permitting Amendment discussion.

After reviewing documents provided by the Council staff, and combined with our own knowledge of the illex situation, our company urges the Council to consider the following options:

- **Delay any requalifying action until the two Illex Working Groups have had a chance to explore opportunities to work with NMFS/GARFO to obtain more quota in this healthy fishery.** There is a real chance for obtaining more quota and if successful, it will mean more squid to catch for all existing permit holders. This would positively impact all permit holders and supporting infrastructure where everyone benefits, instead of creating winners and losers with a requalification.
    - *Can you imagine how an existing illex permit holder would feel if their permit/vessel was disqualified by the Council in 2020, only to see a significant quota increase enacted soon after?*
- **Should the Council choose to proceed with Illex Requalification, we urge the Council to consider the minimum qualifying options as a conservative approach.** They may include the following:

2 State Street | PO Box 608
Narragansett, RI 02882

- Including requalifying years <u>1997-2019</u> in order to capture all active participation.
- Examination of the <u>lowest</u> qualifying "best year" landings, including data for 50,000 lbs.
- Holding off on implementation of any further requalification, or <u>disqualification</u> parameters, including enforcement of the 2013 control date, tiers, start dates, fish-hold capacity limitation, and ITQ. From a purely economic sense, these options above are thinly veiled ways of giving more squid (and dollars) to a select group of permit holders, benefitting certain shoreside processors over others, and leaving many of the small pool of only 76 Illex permit holders with a fraction of their fishing potential, if any.

For example, we have significant concern with the table 1 in the MSB-COM packet that shows even the *most conservative* option of permit requalification in the upper left-hand side of the grid shows a potential to remove ***34%*** of only 76 Illex Moratorium permits.

A removal of 34% of permit holders in a fishery with minimal bycatch and virtually no biological stock issues is already a drastic move.

We urge the Council to look at how many stakeholders we keep in this successful illex fishery, rather than how many we can exclude. This is not an Amendment that was started out of concern about a species on the brink of overfishing or collapse. This is a species that seems to be in such a good state that we have increased the quota in recent years, with good potential to raise the quota further in the future. We urge the Council to carefully consider any requalification, or disqualification, of permits in a fishery with an increasing quota.

Sincerely,

Ryan Clark
President and CEO
The Town Dock

cc: Katie Almeida

Gabby G Fisheries Inc.
Po Box 2242
Montauk, NY 11954

Executive Director Dr. Moore,

I am writing to you in regards to the illex squid amendment as an owner of the fishing vessel Gabby G. Illex squid are a short-lived species with their abundance being highly volatile from year to year. While the nature of this species makes the science side of management more difficult there is no evidence at this time that the stock is overfished or that overfishing is occurring. The past two years have seen exceptionally large biomasses of Illex and to that end the SSC just added 2,000 MT to the ABC for 2019, and there are currently efforts by the council to do a benchmark stock assessment and research on how to increase the TAC in years of high abundance. Historically, industry landings been as volatile as the population itself and mirrored the availability of the species with the TAC being reached only five times in the last 38 years. In the last three years it is not so much an increase in effort but an increase in availability of Illex that resulted in the TAC being reached.

While the scoping document states that action is being proposed due to "considerable latent effort in the Illex squid fishery" this is not the case, there are only 78 permits in the fishery with a many as 41 being active within a single season. In addition requalification of Illex permits would be counter to the MSB FMP objectives 2 and 3.

> 2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
> 3. Provide to the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of the FMP.

To consider removing permits and cutting people out of a fishery, while simultaneously looking to increase the quota of the fishery seems counter intuitive, and makes the amendment look like it is being solely pursued as a means of economic allocation of what is now more than a $20 million dollar fishery. As such I would like to express my desire for the council to use the most liberal of qualifiers and use landings through the 2018 fishing year. I feel this most closely mirrors the current FMP objectives, there is no issue with recruitment in the fishery, and the stock is not overfished nor is overfishing occurring.
I am not in favor of a tiered approach at this time, but if one were to be used it should be trip limit based with no set quota allocation to individual tiers and no ITQ, IFQ or catch share system.

While I understand the council's thoughts behind the scoping process, this is a healthy stock and fishery with a biomass that is only increasing at this time. There are no significant bycatch issues in the fishery either that would warrant curtailing effort. I implore the council not to limit opportunities to fishermen to flex into this fishery when other opportunities are not present.

Thank you for your time and consideration of my comments.

Daniel J. Farnham
Gabby G. Fisheries

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 | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 26, 2019

To: Council

From: Jason Didden, staff

Subject: *Illex* In-Year Quota Adjustment Working Group Terms of Reference Review

The *Illex* In-Year Quota Adjustment Working Group is close to finalizing its *terms of reference*, which describe the relevant tasks that seem feasible and productive in the short and long terms.

Staff will provide an overview of the current draft terms of reference and summarize recent input from the MSB Advisory Panel and the Scientific and Statistical Committee (SSC). The working group will use the recommendations from these groups and the Council's input to finalize the terms of reference and begin several of the potential short-term projects.

The draft terms of reference and MSB Advisory Panel (AP) input are provided below (the MSB AP was asked for input and a joint comment for four AP members was submitted). The SSC's input is contained in the Committee Reports tab of this (October 2019) briefing book.

Draft Terms of Reference for *Illex* Quota Working Group
August 28, 2019

The *Illex* Working Group will address two closely related problems. The first is to develop an approach for in-year quota adjustments. The second is to lay the basis for a benchmark stock assessment (Research Track) in 2021. To some extent the data needs and analyses overlap. Each task will require involvement of scientists, industry, and managers. Both tasks are focused on the challenge of identifying appropriate catch limits for a dynamic, short-lived species whose survival, growth and abundance on the US shelf are driven by a complex interplay of environmental conditions. The relationship between removals and stock abundance is poorly understood; as a result no stock assessment model has been developed for this stock. The potential data needs and approaches for *Illex* are numerous, so the working group has first identified several topics/tasks that can potentially be addressed in a 4-8 month timeframe and might produce information useful for in-year quota adjustments. More complex and longer-term data collection and research projects are described second.

<u>Short-Term Topics/Tasks</u>

In the short term, the only currently-identified practicable process would be for the SSC to identify certain measurable conditions that would be hard-wired into the specifications to automatically adjust the ABC. For example, the existing quota might be adjusted upwards or downwards depending on the real-time trend in CPUE after X% of the quota had been taken. Alternatively, a swept-area biomass estimate from a stratified survey conducted after catching Y% of the quota might also serve as a basis for adjusting the quota within previously defined bounds. Environmental conditions could also be used as a basis for adjustment if such information can help estimate stock availability. A sequence requiring an SSC evaluation of performance in-season, followed by a Council meeting and NMFS rulemaking does not appear practicable given the required timelines. Hardwiring in-year quota adjustments is feasible within current specifications processes <u>if</u> a justification can be made and <u>if</u> the necessary data will be available.

1. Review assessment and management approaches for ommastrephid squid populations (like *Illex illecebrosus*) used worldwide and summarize previous attempts for real-time management (RTM) in Northeast US.

2. List key existing available data sources for *Illex*

   -Sources: Dealer, VTR, observer, surveys, Study Fleet, fishery participants, environmental data

   -Elements: data fields that are recorded and available for analysis

   -Metadata: design elements like duration, area covered, etc.

-Timeliness of data reporting and availability
-Cost and burden

3. Describe what we know (highlight our relative confidence) and don't know, about typical patterns of *Illex* growth and distribution on the NE shelf. Describe the fine-scale changes in average size-at-capture over the fishing season and in NEFSC spring and fall bottom trawl surveys, and relevant differences among years.

4. Use samples collected by industry in 2019 to expand knowledge of *Illex* aging and growth. Council staff requested sample collection by several fishery participants and is exploring options for processing and aging.

5. Identify a meaningful measure of effort for each component (freezer, RSW, fresh/ice) of the *Illex* fleet, or identify a path toward doing so. Evaluate utility of CPUE by fleet for estimation of *Illex* productivity.

6. Evaluate CPUE and environmental parameters as potential real-time predictors of defined relative abundance conditions (e.g., poor, average, good). Examples include, but are not limited to Markov and hierarchical models. Can system state {poor, average, good} be identified with partial year empirical data? What fraction of year is required to determine system state?

7. Consider (and if appropriate design) pilot pre- and/or mid- and/or post-season industry-platform based surveys (any or all) to inform in-year quota adjustments.

<u>Long-Term Topics/Tasks</u>

1. Explore use of acoustics for *Illex* assessment.

2. Explore alternative processes for in-year quota adjustments.

   a. Define the ideal management timeline. With respect to this timeline, address the following questions regarding needed data (any type):
      i. What will be collected?
      ii. Who will collect?
      iii. Who will process?
      iv. Who will monitor (at-sea observers and quota or effort monitoring)?
      v. What are the costs?
      vi. When are the data needed?
      vii. What can we do under the applicable law
   b. Address impacts of
      i. Imprecise data (i.e. responding to noise versus actual situation)

ii. Lagged data (i.e., time between data collection and availability for scientific use)
iii. Non-biological factors, especially market effects
iv. Delayed Decisions (e.g., close too early or too late)
v. Assumption about self-regulated effort during low abundance years

3. Describe the in-season dynamics of fishing effort and catch with a particular focus on:

a. Market prices
b. Species abundance/availability on the U.S. shelf
c. Influence of pending quota decisions and other regulations
d. Using the above factors and others, distinguish between poor, average and good abundance years.
e. From an economic perspective, determine magnitude of acceptable change (e.g., +/- 10%, +/-20%). associated with potential in-season catch adjustments.

4. Address influence of harvesting on stock dynamics.

5. Systematically determine age composition of catches prior to, during and after the fishery using a structured sampling design to identify the cohorts (and seasonal and spatial differences in age composition). Also determine age composition of NEFSC spring and fall survey catches.

6. Explore other real-time management approaches, e.g. tow-based real-time e-VTR data and biological data (similar to NEFSC 1999-2001 *Illex* RTM project).

7. Determine persistence of linkages (CPUE, environmental) to abundance across years. Consider the same for effort (e.g. market conditions).

8. Develop a prototype model of *Illex* immigration/emigration dynamics on the US shelf during the fishing season that includes seasonal changes in relative abundance as influenced by oceanographic conditions. Much of this work will be speculative, but it will help to piece together different perspectives of stock dynamics. A key concern will be evaluation of feasibility of migration of large squid to spawning areas.

a. Determine if meaningful biological reference points (e.g., target of 40% spawner escapement) can be developed, especially with respect to critical biomass levels.

b. Estimate *Illex* fecundity and reproductive state by size and age (age data are critical).

September 6, 2019

Dear Jason:

We would like to jointly submit the following initial comments on the Draft TORs for the *Illex* Quota Working Group:

Introduction:

The draft TORs state that *"Each task will require involvement of scientists, industry, and managers".* However, with the exception of MSB Committee Chair, Mr. Hughes, the Working Group members are all fisheries policy makers or fisheries scientists. While they bring an expertise crucially important to this issue we feel strongly that we also have equal expertise to offer.

We appreciate this opportunity and believe it is the first step for meaningful development of an effective approach to science and management of this stock or to fulfill the Working Group tasks as stated. This is particularly important when considering that only the industry has true access to the stock and the ability to provide important, applicable data.

Short-Term Topics/Tasks:

Here, the draft TORs state that the *"currently-identified practicable process would be for the SSC to identify certain measurable conditions that would be hard-wired into the specifications to automatically adjust the ABC. For example, the existing quota might be adjusted upwards or downwards depending on the real-time trend in CPUE after X% of the quota had been take (Option1). Alternatively, a swept-area biomass estimate from a stratified survey conducted after catching Y% of the quota might also serve as a basis for adjusting the quota within previously defined bounds (Option 2)".*

Option 1: An index based on real-time trend in CPUE, requires an in-depth understanding of the socio-ecological drivers of the fishery including: a) the economics of the fishery relative to area-specific shoreside and at sea processing capacity and investment; and differences in CPUE of the vessels in the fishery, and; b) the potential impacts of Gulf Stream ring dynamics and other physical and biological drivers of stock availability and fishing effort.

Option 2: A swept- area biomass estimate derived from an in-season survey, requires defining what party(ies) will conduct the survey, and if the survey would be an industry-based survey using standard gears/protocols, or if it would be a Science Center-driven survey.

Both options require deep understanding of the investments made by the fishing industry, at least in terms of the opportunity costs of underutilizing the resource available annually. Both options will be difficult but may be achievable, and could be complimentary, but only if there is significant engagement with the fishery as an equal partner in the co-development of the science and policy, and the distribution of costs, from the beginning.

While we have some trepidation about a survey leading to fluctuations in quotas, we believe that recent and historic performance of the fishery indicates that catches up to 26,000 mt have not been detrimental to the resource and expect that quotas should not fall below that amount in the future.

The introduction to this section states that *"Environmental conditions could also be used as a basis for adjustment if such information can help estimate stock availability."* Extensive research including field research and evaluation over the long term would be required to develop a tool with enough accuracy and precision that it could serve as a part of the foundation for timely management decisions. To effectively conduct this research, full industry partners are necessary.

Topic #3: Suggests "Describ(ing) the fine-scale changes in average size-at-capture over the fishing season and in NEFSC spring and fall bottom trawl surveys, and relevant differences among years." We do not know to what degree size/abundance at capture in the NEFSC survey have to do with population process or inter-annual variations in factors driving availability of different age classes during the fixed periods of the NEFSC surveys.

Understanding this will require significant research involving members of the fishing industry who have access to the shelf break and the fish during times when the NEFSC surveys are not being conducted. Similar research/engagement will also be necessary to understand the relevance of data coming from the industry, including the potential for sampling catch with fish in spawning condition. It is not clear that the current Working Group has enough direct engagement with the industry to accomplish these tasks but we are committed to fostering that relationship and achieving mutually important scientific goals.

Thank you for the opportunity to comment.

Sincerely,

Meghan Lapp, Seafreeze Ltd.

Jeff Kaelin, Lund's Fisheries, Inc.

Greg DiDomenico, GSSA

Katie Almeida, Town Dock, Inc.

Mid-Atlantic Fishery Management Council

Comprehensive Five Year (2020 – 2024) Research Priorities

Discussion Document and Draft Priorities

October 7, 2019

Durham, North Carolina

Introduction

The 2006 reauthorization of the Magnuson-Stevens Act (MSA) required that each federal Council develop a five-year research priorities document. The research priorities developed by the Council should address "fisheries, fisheries interactions, habitat and other areas of research that are necessary for management purposes." NOAA Fisheries and the regional science centers are to consider these research priorities when developing their own research priorities and budgets within the region of the associated Council(s).

The Mid-Atlantic Fishery Management Council (Council), in coordination with the Scientific and Statistical Committee (SSC), completed its first research priorities plan in 2008. That plan was primarily informed by reviewing research recommendations within the various stock assessment documents and the Council's Research Set-Aside Program. The current version of the research plan (2016 – 2020) was approved in 2015 and the Council's Visioning Project and Strategic Plan played a critical role in developing and identifying key themes and elements contained in the document. The current five-year research priorities document runs through 2020; however, the Council agreed to update the research plan early in order to align with and be informed by the development of the Council's next Strategic Plan (2020-2024), the new 5-Year Cooperative Agreement and other Council priorities and guidance documents.

Throughout 2019, Council staff solicited input on the existing research plan and potential priorities from the Advisory Panel, Monitoring Committee and SSC for each species/FMP as part of the fishery specification review process. The staff lead and NEFSC assessment lead then reviewed, or will review, all of the species/FMP specific input received and provide recommendations for Council consideration. The SSC also provided extensive feedback and input regarding existing and potentially new research priority themes.

This discussion and draft priorities document begins with a review of the current research priorities document to evaluate the use and utility of the document to the Council and its regional partners. Updated draft research themes are then included that incorporate SSC input and stakeholder feedback received during the current Strategic Plan development. Revised and re-prioritized species/FMP specific research lists for a few Council-managed species are then provided as examples for Council consideration. Lastly, staff offer potential strategies to improve the plan's effectiveness, including a review process to track research priority progress and the future direction of a comprehensive research and implementation plan.

At the October 2019 meeting, the Council will review and provide feedback on the appropriateness and scope of the draft research priority themes, the organization and prioritization of the species/FMP specific research lists, and approaches to improve the effectiveness of the current document. Council feedback and recommendations will then be incorporated into a revised research priorities document. Final approval of the five-year (2020 – 2024) research priorities is scheduled for the December 2019 meeting.

Review of Current Five-Year Research Plan

As mentioned above, the MSA specifies the Council develop a list of research priorities and those lists be provided to NOAA Fisheries and the NMFS Northeast Fisheries Science Center (NEFSC) to help inform science and budgeting needs and priorities for the region. However, there is little information or understanding as to how these research priority documents have been utilized by the Council and the NEFSC in allocating resources to address the identified science and management priorities. Understanding the utility and applicability of this document may be particularly important to understand given potential differences in overall science goals, objectives, and time/funding scales between the Council and NEFSC. These differences were noted by the SSC at their March 2019 meeting and they questioned how the plan is used by the Council and the NEFSC to inform priorities for funding and requested information on what research priorities in the current plan were addressed and if any of the research was used within the management process.

A review of Mid-Atlantic Council supported scientific and management projects from 2015-2018, not including any Research Set-Aside projects, was conducted to try and evaluate the use and utility of the current research plan (Table 1). During this time period, the Council supported 21 different projects covering all six fishery management plans (FMPs) and nine different species. These projects covered a wide range of topics including biological information, survey data, stock assessments, social and economic trade-offs and management strategies. Council staff reviewed each project to determine if the project was identified in the current five-year research plan and whether or not it was used to help inform a stock assessment or management. Based on the staff review, the results indicate relatively high overlap of the research priorities plan to inform Council supported projects. Of the 21 total projects, 14 projects (67%) addressed specific research priorities (10) or addressed aspects of the priority themes (4) that are identified in the current research plan. When considering the applicability of the projects, the results are even greater. Over 90% of the projects (19 of the 21) have been, or likely will be in the future, used to support or inform a stock assessment or management action. While the results show high applicability of Council supported projects to inform stock assessments and management, how the current research priorities document was utilized by the Council and staff to inform priority projects and resource allocation is unclear. In 2016-2017, the Council's Collaborative Fisheries Research Program utilized the current five-year research priorities document to identify general specific research priority categories in the RFP and ultimately funded four projects specifically listed under the different species/FMP research needs. How the current five-year plan was used to inform and identify other Council supported projects (10 projects) is not as straightforward. Identifying and prioritizing these projects was largely driven by emerging issues and needs to inform a specific stock assessment or management question, but the research priorities document was not specifically considered.

A comprehensive evaluation of the utility and use of the research plan by the NEFSC is difficult to conduct and is not included here. However, the NEFSC 2016-2021 Strategic Plan[1], the FY2020 Annual Guidance Memo[2], and the 2020-2023 Greater Atlantic Region Strategic Plan[3] include a number of research and science priorities that align with the broad research themes and needs identified in the Council's current five-year priorities document. Common priorities between the Council, NEFSC, and NEFSC/GARFO plans include: improving fishery data collection through increased use of electronic technologies, incorporation of ecosystem level information into stock assessments, improving stock assessment information, modelling approaches and capacity, and increased utilization and incorporation of social and economic information into the management process.

Consideration should be given for a more comprehensive review and evaluation of the various (Mid-Atlantic, New England, NEFSC) research plans and priorities to align similarities, highlight differences, and ensure continued communication and coordination to maximize limited resources.

[1] The 2016-2021 Northeast Fisheries Science Center Strategic Plan can be found at: https://nefsc.noaa.gov/rcb/stratplan/
[2] The FY2020 Annual Guidance memo can be found at: https://nefsc.noaa.gov/rcb/stratplan/agm-fy20-final.pdf
[3] A presentation outlining the strategic goals of the 2020-2023 Northeast Regional Plan can be found at: https://s3.amazonaws.com/nefmc.org/14a.-190531_Strat-Plan-Presentation.pdf

Table 1. Summary of Mid-Atlantic Fishery Management Council supported projects from 2015-2018 used to support science and management needs.

Project Title (Year Started)	Primary Species/FMP	From 5-year research plan (Y/N)	Used in Assessment and/or Management (Y/N)
Acceptable Biological Catch (ABC) Control Rule and Risk Policy Management Strategy Evaluation (2017-2018)	Omnibus	Y	Y - Management
Surf clam species diagnostics and population connectivity estimates to inform management (2018)	SCOQ	N	Possibly Yes in future
Summer Flounder Recreational Management Strategy Evaluation (2018)	Summer Flounder	Not specific research item but related to issues addressed in introduction	Likely Yes in future
Summer Flounder Commercial/Recreational Allocation Model (2016)	Summer Flounder	Y	Y - Management
Summer Flounder Commercial/Recreational Allocation Model Update (2018)	Summer Flounder	Y	Likely Yes in future
Summer Flounder Recreational Measures Model (2015)	Summer Flounder	N	N
Estimating and mitigating the discard mortality rate of black sea bass in offshore recreational rod-and-reel fisheries (2016)	Black Sea Bass	Not specific research item but related to issues addressed in introduction	Not yet
Determining Selectivity and Optimum Mesh Size to Harvest Three Commercially Important Mid-Atlantic Species (2016)	SF/S/BSB	Not specific research item but related to issues addressed in introduction	Y - Management
Collaborative development of a winter habitat model for Atlantic Mackerel, version 2.0, for the identification of "cryptic" habitats and estimation of population availability to assessment surveys and the fishery (2016)	Atlantic Mackerel	Y	Y - Management
Changes in availability of Mid-Atlantic fish stocks to fisheries-independent surveys (2016)	SF/BSB/Spiny Dogfish	N	Not yet
Fisheries-independent pilot survey for golden (*Lopholatilus chamaelonticeps)* and blueline (*Caulolatilus microps*) tilefish throughout the range from Georges Bank to Cape Hatteras (2017)	Golden Tilefish and Blueline Tilefish	Y	Y - Management
Developing and Testing Stock Assessment Models for Black Sea Bass Using Stock Synthesis (2016)	Black Sea Bass	Y	Not directly, support for primary assessment model
Black Sea Bass Habitat Research Needs in the Mid-Atlantic (2017)	Black Sea Bass/Habitat	N	N?

Evaluating the Importance of Chub Mackerel in HMS Diets (2018)	Chub Mackerel	N	Not yet
A Genetic-based Investigation of Blueline Tilefish: Development of molecular markers and an assessment of stock structure and connectivity (2015)	Blueline Tilefish	Y	Y - Both
Blueline tilefish biological sample collection (2016)	Blueline Tilefish	Y	Y - Assessment
Atlantic mackerel stable isotope analyses (2017)	Atlantic Mackerel	Y	Y - Assessment
Blueline Tilefish DLM Toolkit - ABC Recommendations (2017-2018)	Blueline Tilefish	N	Y
Delphi Process - Blueline Recreational Catch (2016)	Blueline Tilefish	N	Y
Mackerel Quota DLM/MSE (2017)	Atlantic Mackerel	Y	Y
Implementing Electronic Logbook Reporting for Mid-Atlantic For-Hire Fisheries (2016 - 2017)	Omnibus / Recreational Fisheries	Not specific research item but one of major themes	Y - Management

Draft Research Priority Themes

Key research themes were included in the current priorities document and were to address broad concepts that were responsive to input received during the Visioning Project and development of the original Strategic Plan regarding the data and science used in the management process. For example, the current five-year research priorities document includes a number of key science and research themes to address the Strategic Plan Science Goal to improve the timeliness and accuracy of the information used by the Council.

The Council is currently developing an updated Strategic Plan that will guide Council priorities and activities for the next five years (2020-2024). The Council recently agreed to update the Science goal that seeks to *ensure that the Council's management decisions are based on timely and accurate scientific information*. The Science goal was modified to address public comments that “focused on data accuracy and credibility, followed by inclusion of on-the-water observations and use of collaborative research in the scientific and decision-making processes.” This simplified Science goal focuses on the core of the Council’s mandated science-based decision-making process. In addition, the updated Strategic Plan will include an Ecosystem goal that specifies the Council *support the ecologically sustainable utilization of living marine resources in a manner that maintains ecosystem productivity, structure, and function*. This goal seeks to address a wide range of Council issues related to climate change, forage, habitat, species interactions, and other factors that impact the health of the marine ecosystem.

Similar to approach taken with the current research priorities, the updated document seeks to align research priorities with the updated Strategic Plan to ensure consistency, appropriately prioritize Council resources, and improve coordination of science and management efforts throughout the region.

Provided below are the broad research priority themes, along with a short narrative, staff propose to include in the updated research priorities document. These priority themes reflect feedback received from the SSC and include some topics contained in the current document as well as new themes. These are provided to solicit Council feedback on the appropriateness of the existing themes and recommendations for new/additional themes that will align with the new strategic plan.

Stock assessment improvement (existing)

Improvements to the data and analysis supporting the stock assessment process was identified as the Council's top priority in the current research priorities document. At their March 2019 meeting, the SSC commented the next research priorities document should continue to focus on stock assessment improvements. Significant stock assessment improvements have been made for a number of Council managed species including black sea bass, ocean quahog, Atlantic surfclam, and summer flounder. A major focus of the current plan was for all Council-managed species to have a quantitative assessment. While not all species have a quantitative framework, Atlantic mackerel now has an approved benchmark assessment with fishing and biomass proxy reference points, and *Illex* squid is scheduled for a research track assessment in the fall of 2021. However, since implementation of the current research document, the Council has added two more species (blueline tilefish and chub mackerel) to its list of managed species responsibilities, neither of which has acceptable quantitative stock assessments. The Northeast Region Coordinating Council (NRCC) recently approved a new stock assessment process that makes assessments more flexible, increases research opportunities and establishes a long-term assessment schedule. This process will provide more timely stock assessment information and should provide for significant advancements in the regions stock assessment capabilities and capacity.

While advancements have been made and new information obtained (see Table 1 for examples), continued focus and advancement of data collection programs that improve size/age composition of the catch, discard estimates and associated mortality rates, and fishery independent abundance information remains a priority. Feedback obtained during the development of the new strategic plan also highlight the need for continued science-based industry collaboration and increased utilization of fishing fleet information and on-water observations. In addition, building off the efforts in the recent summer flounder benchmark that included the development of the Ecosystem Context for Stock Assessment report, continued development and inclusion of ecosystem factors and environmental covariates in stock assessments should remain a priority.

Research to support measures which reduce/eliminate discards (existing)

Obtaining accurate discard information and the management challenges to reduce regulatory discards remain, particularly within the recreational sector. Stakeholder feedback during the development of both strategic plans and during many Advisor Panel meetings focus on the need significantly reduce discards and develop new management strategies to convert regulatory discards into harvest to provide both economic and biological benefits. As noted in the current priorities document, reducing regulatory discards through improved gear performance, and the development of management procedures and approaches to allow for greater retention of catch or the avoidance of unmarketable, sub-legal or otherwise prohibited species should continue to be explored.

The Council has supported a variety of discard related projects (see Table 1), primarily in the summer flounder, scup and black sea bass fisheries. Findings from those projects have yet to directly change management approaches and additional research, data collection and management strategies are needed. In addition, there is a need for continued focus on collaborative research opportunities with both commercial and recreational vessels to evaluate gear selectivity, discard mortality estimates, and innovative management strategies to avoid and minimize discards.

Collect and incorporate social and economic data into fishery management decision process and stabilize yields (existing)

The continued collection, analysis, and increased utilization of social and economic information in the Council's decision process remains a high priority for the Council and stakeholders. While the Council has been successful in meeting the biological mandates of the MSA, the resulting social and economic consequences have been viewed as unnecessarily severe by both commercial and recreational stakeholders.

Over the last several years, the Council initiated or implemented a number of socioeconomic related policy and management actions. One policy within the Council's EAFM guidance document is to evaluate ecosystem-level trade-offs, including social and economic considerations. The Council has made significant EAFM advancements including the completion of an EAFM risk assessment which identified 12 different social and economic risk elements that may threaten achieving the social and economic objectives the Council may have for its fisheries. Building off the results of the risk assessment, the Council is currently piloting the development a summer flounder conceptual model that will consider the biological, socioeconomic, and management high priority risk elements affecting summer flounder and its fisheries. Once complete, the Council will consider conducting a comprehensive management strategy evaluation (MSE) to answer management questions and objectives identified from the conceptual model which may focus on social and economic targets, thresholds, and trade-offs. Development of MSE approaches for its managed species was identified as a high priority by the Council in the current priorities document and the need for continued investment in collection and development of EAFM information, analytical tools and management strategies remains.

Beyond EAFM related activities, the Council is currently considering potential changes to its risk policy to more fully account for economic objectives. Utilizing the results of two different MSE projects, the Council is evaluating nine different risk policy alternatives that consider both biological and economic impacts and trade-offs associated with the alternatives. For the future, the Council has expressed interest in explicitly including both biological and economic factors in the risk policy and the potential development of a forage-based specific risk policy. Additional data collection programs and quantitative modeling approaches need to be conducted to more comprehensively evaluate the biological and socioeconomic implications of these risk policy modifications.

In addition, in 2018 the Council approved changes to the acceptable biological catch (ABC) control rule to allow for constant, multi-year ABCs using the average ABCs (or average risk of overfishing) to provide for management and fishery stability (a goal identified in the current research plan). However, the social and economic implications and trade-offs of this approach have not been conducted. Lastly, a recent joint Council-SSC meeting primarily focused on increased capacity and utilization of the SSC to provide needed social and economic science information to the Council, highlighting the continued importance and prioritization of this theme.

Evaluation of Existing Allocations to Fishery Sectors (existing)

A number of Council managed species allocate the acceptable biological catch (ABC) by fishery sector and, in some cases, by state. The fairness, equity and overall management structure of many of the current allocation scenarios have been questioned by stakeholders and fishery managers. In addition, stakeholders have noted the general inflexibility of the fixed quota allocation system currently in place and recommended that the Council consider alternative methods to allocate annual quotas. Changing species distributions, stock productivity and the recently updated MRIP recreational catch timeseries have only added to the desire to reconsider current allocation scenarios. The EAFM risk assessment results indicated "allocation" was a high risk element for 12 of the Council's fisheries and/or sectors, the most of any risk element considered. Recent Council actions (e.g., Summer Flounder Commercial Issues Amendment) have tried to address allocation issues, but not all stakeholders have been supportive of the efforts to date and many more allocation decisions remain. Therefore, there remains a strong need to identify methods and analyses (i.e., management strategy evaluation, scenario planning) that determine optional allocation options that incorporate biological, social and economic considerations.

Recreational Data Collection (new)

During the March 2019 meeting, SSC members noted that recreational data collection may be a priority theme the Council may want to consider in the updated research priorities document. The incorporation of the new MRIP recreational catch timeseries into stock assessments and the implications within the management system are just beginning to be considered and addressed by the Council. The SSC noted the inclusion of the new MRIP catch timeseries and the differential catch trends among Council managed species introduces an important new source of scientific uncertainty. The recent passing of the Modernizing Recreational Fisheries Management Act of 2018 adds to the uncertainty of recreational fisheries management but may also provide for opportunities to collect new/additional information and dedicate resources to improving management approaches for recreational fisheries. For example, Sections 201 and 202 of the Act require increased incorporation of various recreational data sources and an evaluation of alternative data collection methods (e.g., smart phone apps).

Collect ecosystem data and development of ecosystem tools and management strategies to support EAFM initiatives (new)

The Council's new 2020-2024 Strategic Plan, the 2016-2021 NEFSC Strategic Plan and the 2020-2023 Greater Atlantic Region Strategic Plan all include a focus on ecosystem science as a major goal, theme or strategy. There is broad support for the continued collection of ecosystem-level climate, habitat, fleet dynamics, and species interaction information to help improve our understanding on the current and anticipated impacts of climate change on the region's fisheries and the broader marine ecosystem. Advances in scientific information and understanding will lead to the continued improvement, development, and utilization of ecosystem tools, products, and processes such as the Integrated Ecosystem Assessment, State of the Ecosystem reports, and the Climate-Ready Fisheries Management, respectively. The future success of the Council's EAFM process relies on the continued support of these activities and requires the investment in ecosystem science and data collection.

Climate change impacts on stock productivity and distribution shifts (new)

Climate-related changes in the Mid-Atlantic have already been widely observed and documented by fishermen, managers, and scientists. These changes in the environment have led to shifts in stock distributions, possible changes in stock productivity and have the potential to impact the Council's ability to effectively manage these resources. While this theme is embedded in a number of other included priorities (e.g., stock assessment, socioeconomic considerations, allocation and EAFM initiatives), the SSC felt this should be a stand-alone theme given the importance of this issue and its linkages to other research and management priorities. Incremental scientific advances under this theme can inform efforts and activities under other priority themes. NOAA Fisheries recently released a technical memo[4] outlining a six-step science-management process to incorporate, account for and respond to changing climate conditions and the

[4] Karp, M.A. et. al. 2018. Accounting for Shifting Distributions and Changing Productivity in the Fishery Management Process: From Detection to Management Action. U.S. Dept. of Comm, NOAA. NOAA Technical Memorandum NMFS-F/SPO-188, 37 p. http://spo.nmfs.noaa.gov/tech-memos

impacts to fisheries. Enhanced data collection programs to detect change and the development of short/mid-range distribution forecast models to understand the drivers and magnitude of change and the associated biological and management risks are critical research needs. Developing management strategies and governance structure options through MSE simulation, scenario planning and/or structured decision making are necessary to create adaptive approaches to respond to continually changing conditions and risks.

Draft Species/FMP Specific Priorities List

The current (2016 – 2020) species/FMP specific research priorities were primarily derived from the research needs identified by the stock assessment workgroup from the most recent benchmark stock assessment for a specific species. A broader and more comprehensive process to solicit input on research priorities was undertaken for this document. Input on current and new priorities was provided by the Advisory Panel, Monitoring Committee, and the SSC as part of the specification review/setting process for each Council managed species. Staff then worked with the Council species lead and the NEFSC assessment leads to review all input received, as well as the research priorities identified in the benchmark stock assessment reports and SSC meeting reports, to develop a revised list of species/FMP specific research priorities. Going forward, staff propose an annual or biennial review of the species/FMP specific research priorities be conducted. A more frequent review will help ensure the priorities are reflective of the current state of science (i.e., remove priorities that may have been addressed) and accurately reflects the Council's science and management research priorities (i.e., add new priorities that may develop). This annual/biennial review would not apply to the broader research priority themes which would remain the same for the entire five-year plan.

In addition, staff propose a different organizational and prioritization approach for the species/FMP specific priorities list. Draft research priorities are separated into two different categories, short-term/smaller scale and long-term/larger scale projects. Within each category, the different research projects are then listed in priority order. This type of approach was suggested by the SSC and is meant to reflect the different end users of this document – the Council, the NEFSC and other science partners – and to devise a document that is both tactical and strategic in addressing the most important research and science needs for effective management by the Council. The short-term/smaller scale priorities provide a tactical approach to answer specific scientific and management questions, particularly when limited resources (i.e., funding, expertise and staff) are available. These priorities are where the Council would likely focus its attention and are the types of projects the Council has typically supported in the past when opportunities are available. Addressing these short-term/small scale projects can lead to incremental advances in support of long-term/large scale priorities. These priorities are more strategic and seek to address larger concepts and issues that likely require significant resources over an extended period of time. This approach allows the Council, NEFSC and other partners to leverage resources, for example matching funds and technical expertise, to identify funding opportunities to address these larger projects. If implemented, the SSC indicated they could potentially provide this type of information (i.e., short/smaller versus long/larger) when developing research priorities during the ABC setting process.

Below are updated species/FMP specific research priority lists for a few species that are organized by short-term/smaller scale and long-term/larger scale projects. These are provided as examples in order to get feedback from the Council on this organizational and prioritization approach. Based on Council feedback, staff with then work with the species lead and NEFSC stock assessment lead to finalize the research priority list for each species/FMP.

Draft list of research needs for selected Mid-Atlantic Council managed species

GENERAL

SHORT-TERM/SMALLER SCALE

1. Investigate stock structure utilizing otolith microchemistry and other genetic analyses for different Mid-Atlantic stocks (e.g., blueline tilefish, black sea bass, Atlantic mackerel, and surfclam)

2. Explore the utilization of local ecological knowledge to help characterize and understand fisheries habitat change over time to help identify areas of greatest need of protection.

3. Create a framework to improve social science information regarding crew employment, renumeration and job satisfaction for all Mid-Atlantic fisheries.

4. Evaluate the potential impacts of offshore wind development on habitats and productivity of Council-managed stocks.

5. Evaluate the relationship between changes in landings limits and the rates and magnitude of discarding in the commercial and recreational fisheries.

LONG-TERM/LARGER SCALE

6. Collect accurate size and age composition of commercial and recreational catch (including the discarded component of the catch) to develop or improve catch at age matrices for all managed stocks.

7. Incorporate ecosystem level data (predator/prey interactions, trophic dynamics, etc.) into single and multi-species assessment and management models.

8. Investigate potential sector and region allocation changes and adaptive management strategies to respond to changing environmental conditions.

9. Develop tools to collect representative economic information on fixed and variable trip costs to understand fleet profitability for all Mid-Atlantic fisheries.

10. Evaluate potential socio-economic impacts of offshore wind development on Council-managed fisheries, including changes in fishing behavior, changes in the distribution of fishing effort, changes in revenues, and differential impacts on commercial and recreational fisheries.

11. Implement novel supplemental surveys to derive fishery independent indices of abundance (black sea bass, golden and blueline tilefish, Atlantic mackerel).

SCUP

SHORT-TERM/SMALLER SCALE

12. Evaluate the spatial and temporal overlap of Scup and squid to better understand and characterize Scup discard patterns.

13. Characterize the pattern of selectivity for older ages of Scup in both surveys and fisheries.

14. Explore the relationship between Scup market trends, regulatory changes, and commercial landings and discards.

LONG-TERM/LARGER SCALE

15. Evaluate the role and relative importance of implemented management strategies (i.e., gear restricted areas, increased minimum mesh size, and minimizing scup and squid fishery interactions) versus the long-term climate variability to the increases in stock abundance and high recruitment events since 2000.

16. Characterize the current Scup market and explore the development of new markets.

17. Explore the applicability of the pattern of fishery selectivity in the model to the most recent catch data to determine whether a new selectivity block in the model is warranted.

ATLANTIC MACKEREL

SHORT-TERM/SMALLER SCALE

18. Investigate stock structure and spawning components through additional otolith microchemistry and/or genetic projects.

LONG-TERM/LARGER SCALE

19. Develop methods to implement an acoustic survey for Atlantic mackerel (NEFSC trawl survey or industry-based platform).
20. Explore potential changes in environmental conditions (habitat changes, larval diets, cannibalism, etc.) that impact larval survival and recruitment.
21. Initiate a reproductive study in the U.S. to obtain fecundity estimates and spawning seasonality. Update Canadian fecundity estimates (which are currently based on a 1986 publication) and compare estimates between countries.
22. Obtain biological samples from all components of the fishery and covering both spawning contingents.
23. Investigate possible growth and maturity differences between spawning contingents.
24. Continue to pursue modeling approaches that explicitly account for the spatial structure of the stock (i.e. two spawning contingents).

SPINY DOGFISH

SHORT-TERM/SMALLER SCALE

25. Integrate recent information on the efficiency of the NEFSC survey gear as it relates to: distribution of spiny dogfish beyond the current NEFSC trawl survey geographic footprint (including inter annual differences); gear efficiency; depth utilization within the footprint; distribution within the survey footprint under different environmental conditions.
26. Explore model-based methods to derive survey indices for Spiny Dogfish
27. Investigate alternative stock assessment modeling frameworks that evaluate: the effects of stock structure; distribution; updated biological information such as sex ratio and spiny dogfish productivity; state-space models; and sex-specific models.
28. Evaluate the utility of the study fleet information as it relates to issues identified under priority #25 above.

LONG-TERM/LARGER SCALE

29. Research opportunities to increase domestic and/or international market demand.
30. Expand information on the efficiency of the NEFSC survey gear as it relates to: distribution of spiny dogfish beyond the current NEFSC trawl survey geographic footprint (including inter annual differences); gear efficiency; depth utilization within the footprint; distribution within the survey footprint under different environmental conditions.
31. Continue aging studies for spiny dogfish age structures (e.g., fins, spines) obtained from all sampling programs (include additional age validation and age structure exchanges), and conduct an aging workshop for spiny dogfish, encouraging participation by NEFSC, Canada DFO, other interested state agencies, academia, and other international investigators with an interest in dogfish aging (US and Canada Pacific Coast, ICES).
32. Evaluate ecosystem effects on spiny dogfish acting through changes in dogfish vital rates.

BLUELINE TILEFISH

SHORT-TERM/SMALLER SCALE

33. Identify data sources and sampling methods to improve the accuracy of the commercial and recreational catch timeseries with improved spatial resolution.
34. Incorporate mandatory logbook reporting for all recreational anglers and collect fishery-dependent information such as effort, total catch and length information on harvested and discarded fish.
35. Collect additional biological samples to enhance understanding of the dynamics and biological characteristics of the stock (e.g., age and size of maturity, maximum age, fecundity, spawning periods).

LONG-TERM/LARGER SCALE

36. Collect additional age information from the commercial and recreational sectors and research the reliability of aging methods and determination of growth parameters.
37. Investigate new stock assessment approaches, including non-equilibrium methods, should be explored.
38. Conduct habitat studies of deep-water sites in the mid-Atlantic (Norfolk Canyon, Baltimore Canyon, and Hudson Canyon).

Next Steps and Future Direction

The MSA requires each Council to develop a list of research priorities to help inform the research and budget priorities for the regional science center. However, there is little information or understanding as to how these research priority documents have been utilized by the Council and the NEFSC in allocating resources and address the identified science and management priorities. A review of the current 2016-2020 research priorities document was conducted in order to evaluate its utility and applicability. Based on this review and input from the SSC, staff propose modifications to the organization and prioritization of the document in an effort to develop a more tactical and strategic document to more effectively advance scientific and management information that is aligned with the resources and priorities of the Council and NEFSC. Council feedback on the research priority themes and the species/FMP research priorities list will then be incorporated into a revised 2020 – 2024 research priorities document for Council consideration and approval at the December 2019 meeting.

In an effort to move beyond the current process of creating a long list of priorities that get reviewed every five years which may or may not be used to inform science and budget priorities, staff also propose a new approach and process to evaluate the utility and implementation of the research priorities document. An annual or biennial review of the current priorities list by the AP, Monitoring Committee and SSC will help ensure the document is reflective of the current state of scientific knowledge and Council priorities. In addition, staff propose developing a review process to track the progress toward addressing research priorities and to identify what research has been completed and why other topics may not have been addressed.

Lastly, staff propose more comprehensive review and evaluation of the various (Mid-Atlantic, New England, NEFSC) research plans and priorities. Since the NEFSC serves both the Mid-Atlantic Council and the New England Fishery Management Council, which has its own research priorities list, it must consider both research priority documents to inform research and budget priorities for the entire region. A more comprehensive and holistic review can help identify research similarities, highlight differences, and ensure continued communication and coordination to maximize and leverage limited staff and fiscal resources. This evaluation could lead to the development of comprehensive research priorities plan for the Council to provide a process and approach to effectively and efficiently carry out and address the identified research needs.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 25, 2019

To: Dr. Chris Moore, Executive Director

From: Julia Beaty, Karson Coutre, and Matthew Seeley, Staff

Subject: 2019 Operational Assessments for Black Sea Bass, Scup, and Bluefish

Operational assessments for black sea bass, scup, and bluefish were peer reviewed in August 2019. The prepublication copy of the assessment report and peer review summary is accessible here: http://www.mafmc.org/briefing/october-2019.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 26, 2019

To: Council and Board

From: Matthew Seeley, staff

Subject: 2020-2021 Bluefish Specifications

The Council and Board will consider 2020-2021 specifications for bluefish on Tuesday, October 8, 2019. Materials listed below are provided for the Council and Board's consideration of this agenda item.

Please note that some materials are behind other tabs. Items are listed in reverse chronological order.

1) Monitoring Committee recommendation summary
2) September 2019 Scientific and Statistical Committee meeting report *(behind Tab 18)*
3) Staff memo on 2020-2021 bluefish specifications and management measures dated September 11, 2019
4) Staff memo on 2020-2021 bluefish specifications dated August 20, 2019
5) Bluefish 2019 operational stock assessment *(behind Tab 7)*
6) 2019 Advisory Panel Fishery Performance Report
7) 2019 Bluefish Fishery Information Document
8) ASMFC 2019 Bluefish FMP Review

Bluefish Monitoring Committee
Meeting Summary
September 18, 2018

Attendees: Matthew Seeley (Council Staff), Dustin Colson Leaning (ASMFC), Cynthia Ferrio (GARFO), Mike Celestino (NJ-F&W), Richard Wong (DE-F&W), Eric Durrell (MD-DNR), Nicole Lengyel (RI-DMF), Jim Gartland (VIMS), Tony Wood (NEFSC), and John Maniscalco (NY DEC).

Others in attendance: José Montañez (Council Staff), Hannah Hart (FL), Julia Livermore (RI DEM), Mark Terceiro (NEFSC), Nichola Meserve (MA), Rachel Sysak, and Harold Nugent.

Introduction

The Bluefish Monitoring Committee (MC) received a presentation including a summary of the Scientific and Statistical Committee's (SSC's) acceptable biological catch (ABC) recommendation for 2020-2021, recent fishery performance, and the 2019 bluefish operational assessment. The SSC recommended ABCs using an average and annual[1] approach were 7,385 mt (16.28 M lbs) (average approach) for 2020-2021 and 6,603 mt and 8,167 mt (14.56 M lbs and 18.01 M lbs) (annual approach) for 2020 and 2021, respectively. The ABC recommendation reflects the results of the 2019 bluefish operational assessment, which designated the bluefish stock as overfished and overfishing not occurring. Following the presentation, the MC discussed the average vs. annual ABC approaches, various sources of management uncertainty, estimates of discards (recreational and commercial), 2020-2021 expected recreational landings, transfers from the recreational to commercial fishery, and research recommendations.

Average vs. Annual ABC Approach

The MC recommended the Council select the average ABC approach for the 2020-2021 fishing years. The MC noted that SSB is projected to be above the SSB threshold (½ BMSY = 99,359 MT) in 2020 and 2021 under either ABC approach. Under the average ABC approach, the probability of overfishing decreases from 2020-2021 while increasing SSB by approximately 10,000 mt per year. The average ABC approach offers consistency for a fishery that is predominantly dictated by MRIP estimates. Many bluefish advisors also continue to comment that stability in quotas is necessary to provide flexibility in fishing operations. Furthermore, the consistent ABCs offer stability in a fishery that is currently overfished and scheduled for a research track (benchmark) assessment in 2022.

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[1] The annual approach uses the annual 2020 and 2021 ABCs derived by SSC Council P* policy, whereas the average approach uses the average of the 2020 and 2021 ABCs.

Management Uncertainty

Considering the bluefish flowchart (Figure 1) in the Fishery Management Plan, management uncertainty is accounted for prior to the sector specific annual catch target (ACT) split, which means management uncertainty will affect both the resulting recreational harvest limit (RHL) and commercial quota (CQ), even if management uncertainty exists in only one of the two sectors. The MC discussed various sources of management uncertainty in considering an adjustment from the annual catch limit (ACL) to the fishery-specific annual catch target (ACT). Most comments were related to the recreational sector and centered on estimation methods related to recreational dead releases (see below). Thus, discussion developed related to the ability of the MC to set sector specific management uncertainties. However, the MC does not currently have discretion to apply a direct management uncertainty adjustment to one sector but not the other (see Figure 1). The MC recommended Council consider amending the process by which management uncertainty is incorporated into the specification process, allowing for sector-specific adjustments.

Discards and post release mortality were discussed as the major sources of management uncertainty. The MC decided that discards are explicitly accounted for within the bluefish flowchart, so they should not be further included in the discussion of management uncertainty. Additionally, MC members suggested that post release mortality may be higher than the assumed 15%. However, the recommended discard approach (see below) imposes a large enough decrease in the RHL that the MC recommended imposing no reduction for the associated management uncertainties.

Discards

The MC discussed two approaches used to characterize discards in the recreational fishery. First, the MC was presented with the same approach Council staff used last year, which uses the MRIP estimated mean weight (by wave) of harvested fish (A+B1) times the number of released fish (MRIP-B2s) and assumed 15% mortality. The MC generally agreed that this estimate does not fully capture what is occurring in the recreational fishery because length frequency data suggests that most anglers keep smaller bluefish and release larger bluefish. The second approach uses the Northeast Fisheries Science Center (NEFSC) discard estimates, which incorporates a length-weight relationship for released fish data from the MRIP, American Littoral Society tag releases, and volunteer angler surveys from Connecticut, Rhode Island, and New Jersey. However, this sampling approach does not characterize the entire coast, which adds to the uncertainty in these estimates. Furthermore, NEFSC staff suggested that the uncertainty in these estimates has grown in recent years as availability of bluefish has apparently decreased. In previous years 1,000+ fish were collected, but only 522 were collected in 2018. Moreover, outliers tend to shift the average discard weight.

Despite some MC members supporting the MRIP mean weight approach, the MC ultimately recommended using recreational discard values from the NEFSC to characterize recreational discards in the next specification cycle because they include the length-weight relationship and data from volunteer angler surveys. The MC believes this approach more accurately reflects how the fishery operates. Committee members also recommended working to improve consistency in discard calculations and estimates produced by the NEFSC, Council, and Greater Atlantic Regional Fisheries Office (GARFO)[2].

The MC discussed recent reports of increased commercial discards in the bluefish fishery. Commercial discards were not included in the benchmark stock assessment or operational assessment for a number of reasons (SAW 60). Some MC members indicated that in recent years (i.e., since 2015) localized discards in the commercial fishery are increasing and may not be insignificant. This should be pursued further prior to the 2022 research track assessment.

2020-2021 Expected Recreational Landings

In recent years, expected recreational landings have been calculated from three-year averages using the most recent complete fishing years. This year, the MC recommended that 2020-2021 expected recreational landings be estimated using the three-year average (23.15 M lbs). This recommendation was made because the MC was hesitant to use only the terminal year estimate (13.27 M lbs) since the 2018 fishing year represents the lowest recorded recreational bluefish landings. Furthermore, the MC indicated that bluefish landings have fluctuated in recent years and that a three-year average helps to mitigate the effects of high variability in the terminal year (2018).

Transfers

The MC recommended no transfer be applied from the recreational fishery to commercial fishery. No transfer can occur (as indicated in the regulations) because the recreational fishery is anticipated to harvest the full RHL.

Resulting Commercial Quota and RHL

The resulting RHL and CQ recommended by the MC for the 2020-2021 specifications cycle are 3.62 M lbs and 2.77 M lbs, respectively (Table 1). The decisions made by the MC to recommend NEFSC-based recreational discard estimates and the 3-year average for expected recreational landings when setting bluefish specifications results in very low CQs (-64%) and RHLs (-69%) for 2020-2021. Defining recreational landings and discards in this manner likely accounts for a large amount of the uncertainty present in the management of the bluefish stock, which faces rebuilding over the next few years. The Monitoring Committee acknowledges that such low levels of allowable landings present challenges to managers and fishery participants.

Research Recommendations

The MC recommends that future research focuses on improving the understanding of discards within the recreational and commercial fisheries. Overall, there needs to be a coherent system in place for monitoring discards to account for regional differences in discard length/weight. To bolster this recommendation, MC members suggested looking into including southern states in

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[2] GARFO calculates recreational bluefish discards using the MRIP mean weight (by wave) of harvested fish (A+B1), which coincides with how the Council calculated discards in the last specifications cycle.

the recreational releases data collection program. Additionally, as a lower priority, MC members are interested in better understanding the migration patterns of mature bluefish through, for example, tagging efforts.

Recreational Management Measures

To constrain harvest to the RHL, the MC will likely have to impose one or more management measures. However, the MC needs Council action on the RHLs and CQs prior to identifying the associated management measures. Thus, the MC will reconvene in November 2019 to utilize the Council approved RHLs and CQs to set management measures (similar to summer flounder/scup/black sea bass).

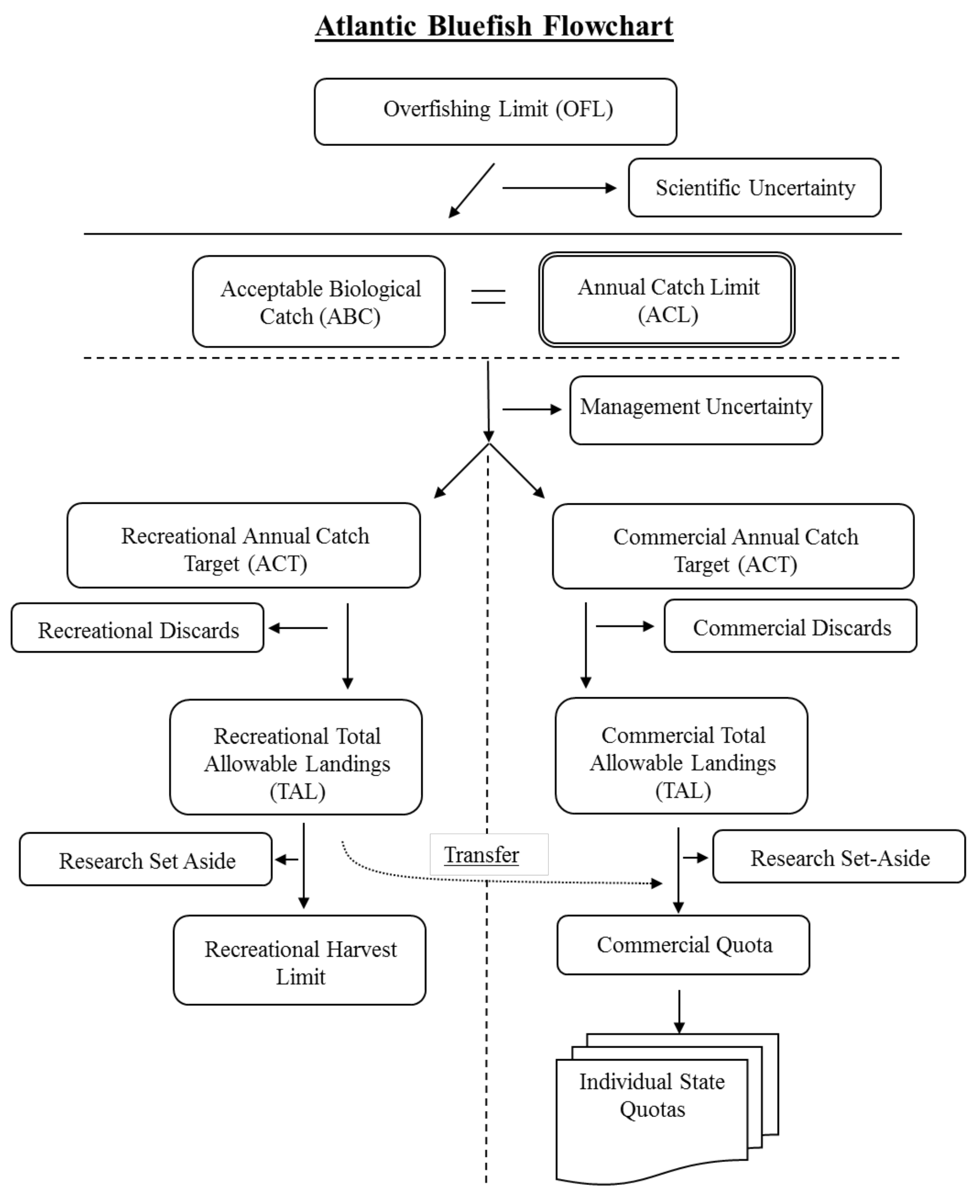

Figure 1. Bluefish specification process as described in Amendment 3 to the Bluefish FMP.

Table 1. Current (2019) management measures and MC recommended bluefish catch and landings limits for 2020-2021.

Management Measure	2019		Basis	2020-2021 (Average)		Basis
	M lb[3]	mt		M lb[3]	mt	
ABC	21.81	9,895	Derived by SSC; Council P* policy	16.28	7,385	Derived by SSC; Council P* policy
ACL	21.81	9,895	Defined in FMP as equal to ABC	16.28	7,385	Defined in FMP as equal to ABC
Management Uncertainty	0	0	Derived by Monitoring Committee	0	0	Derived by Monitoring Committee
Commercial ACT	3.71	1,682	(ACL – Management Uncertainty) x 17%	2.77	1,255	(ACL – Management Uncertainty) x 17%
Recreational ACT	18.11	8,213	(ACL – Management Uncertainty) x 83%	13.51	6,130	(ACL – Management Uncertainty) x 83%
Commercial Discards	0	0	Value used in assessment	0	0	Value used in the assessment
Recreational Discards	2.49	1,129	2017 discards	9.90	4,489	2018 NEFSC estimated discards – value used in the assessment
Commercial TAL	3.71	1,682	Commercial ACT – commercial discards	2.77	1,255	Commercial ACT – commercial discards
Recreational TAL	15.62	7,083	Recreational ACT – recreational discards	3.62	1,641	Recreational ACT – recreational discards
TAL Combined	19.32	8,766	Commercial TAL + recreational TAL	6.39	2,896	Commercial TAL + recreational TAL
Expected Rec Landings	9.52	4,318	2017 Recreational landings	23.15	10,500	Average recreational landings (2016-2018)
Transfer	4.00	1,814	Proposed by the Council via a motion	0	0	Calculated so the expected recreational landings equal the RHL
Commercial quota	7.71	3,497	Commercial TAL + transfer	2.77	1,255	Commercial TAL + transfer
RHL	11.62	5,271	Recreational TAL – transfer	3.62	1,641	Recreational TAL - transfer

[3] SSC recommendations are made in metric tons (mt) and thus, the management measures are developed using mt. When values are converted to millions of pounds (M lb) the numbers may slightly shift due to rounding. The conversion factor used is 1 mt = 2204.6226 pounds.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 11, 2019

To: Dr. Chris Moore, Executive Director

From: Matthew Seeley, Staff

Subject: 2020-2021 Bluefish Specifications and Management Measures

Summary

This memo supplements the "SSC Staff Memo: 2020-2021 Bluefish Specifications" to include updated staff recommended management measures to the Monitoring Committee (MC) post Scientific and Statistical Committee (SSC) meeting.

An assessment update for bluefish was peer reviewed in early August 2019. The assessment incorporates data through 2018, including the recently revised (calibrated) time series (1985-2018) of recreational catch provided by the Marine Recreational Information Program (MRIP).

At the September 18, 2019 MC meeting, committee members will review data from the 2019 operational assessment, recent fishery performance, the SSC acceptable biological catch (ABC) recommendations. Then, the MC will make recommendations to the Council and Board regarding 2020-2021, annual catch targets (ACTs), total allowable landings (TALs), commercial quotas, and recreational harvest limits (RHLs).

This memo provides updated recommendations for setting bluefish specifications for two years (2020-2021) based on the SSC ABC recommendations of 16.28 million pounds (7,385 mt).

Introduction

At the September 9, 2019 SSC meeting, the committee recommended a bluefish ABC of 16.28 million pounds (7,385 mt) for 2020-2021. This recommendation developed through deliberation on the appropriate overfishing limit (OFL) CV group. In the 2015 benchmark stock assessment, an OFL CV of 60% was applied to develop ABCs. Due to uncertainty with the MRIP estimates, discard estimates, the lack of Bigelow survey data in the southern range, and trends in recruitment, the SSC recommended the 100% OFL CV bin (Table 1).

Table 1. 2019 bluefish operational assessment ABC projections for 2020-2021. The projections assume the 2019 ABC of 9,897 mt with recreational catch in 'New' MRIP equivalents will be taken in 2019, providing an estimated catch of 22,614 mt in 2019. OFL Total Catches are catches in each year fishing at F_{MSY} = 0.183, prior to calculation of the associated annual ABC. The projections sample from the estimated recruitment for 1985-2018 and use the MAFMC SSC OFL CV working group recommended OFL CV = 100%.

Annual ABC 2020-2021
Total Catch, Landings, Discards, Fishing Mortality (F)
and Spawning Stock Biomass (SSB)
Catches and SSB in metric tons

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	ABC SSB
2019	15,373	22,614	0.279	0.679	92,773
2020	14,956	6,603	0.078	0.163	102,553
2021	17,355	8,167	0.083	0.183	115,598

Average ABC 2020-2021
Total Catch, Landings, Discards, Fishing Mortality (F)
and Spawning Stock Biomass (SSB)
Catches and SSB in metric tons

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	ABC SSB
2019	15,373	22,614	0.279	0.679	92,773
2020	14,956	7,385	0.087	0.198	102,166
2021	17,228	7,385	0.075	0.154	115,041

Staff Recommendations for 2020-2021 Sector-Specific Catch and Landings Limits

As defined by the Omnibus ACLs and AMs Amendment (Amendment 3 to the Bluefish FMP), the ABC includes both landings and discards, and is equal to the ACLs for bluefish. Based on the allocation percentages in the FMP, 83% of the ACT is allocated to the recreational fishery, and 17% to the commercial fishery.

For 2020 and 2021, staff recommends adopting the management measures associated with the average ABC approach using MRIP discards, as a result of the SSC recommending the 100% OFL CV bin (Table 2).

Table 2. 2020-2021 bluefish staff recommended specifications for the average and annual approach. Note: for the Annual ABCs, #/# correlates to the value for 2020/2021, respectively.

Management Measure	Basis for 2020-2021 Staff Recommendation	2020 - 2021 Average ABC MRIP Discards		2020 - 2021 Average ABC NEFSC Discards		2020 / 2021 Annual ABC MRIP Discards		2020 / 2021 Annual ABC NEFSC Discards	
		M lbs	**mt**	**M lbs**	**mt**	**M lbs**	**mt**	**M lbs**	**mt**
ABC	Derived by SSC; Council P* policy	16.28	7,385	16.28	7,385	14.56/ 18.01	6,603/ 8,167	14.56/ 18.01	6,603/ 8,167
ACL	Defined in FMP as equal to ABC	16.28	7,385	16.28	7,385	14.56/ 18.01	6,603/ 8,167	14.56/ 18.01	6,603/ 8,167
Management Uncertainty	Derived by MC	0	0	0	0	0	0	0	0
Commercial ACT	(ACL – Mgmt. Uncertainty) x 17%	2.77	1,255	2.77	1,255	2.47/ 3.06	1,123/ 1,388	2.47/ 3.06	1,123/ 1,388
Recreational ACT	(ACL – Mgmt. Uncertainty) x 83%	13.51	6,130	13.51	6,130	12.08/ 14.94	5,480/ 6,779	12.08/ 14.94	5,480/ 6,779
Commercial Discards	Value used in assessment	0	0	0	0	0	0	0	0
Recreational Discards	2018 Discards	4.03	1,829	9.90	4,489	4.03	1,829	9.90	4,489
Commercial TAL (pre-transfer)	Comm ACT – Comm Discards	2.77	1,255	2.77	1,255	2.47/ 3.06	1,123/ 1,388	2.47/ 3.06	1,123/ 1,388
Recreational TAL (pre-transfer)	Rec ACT – Rec Discards	9.48	4,301	3.62	1,641	8.05/ 10.91	3,651/ 4,950	2.19/ 5.05	991/ 2,290
TAL Combined	Comm TAL + Rec TAL	12.25	5,556	6.39	2,896	10.52/ 13.97	4,774/ 6,338	4.66/ 8.11	2,114/ 3,678
Transfer	Expected Rec Landings	0	0	0	0	0	0	0	0
Expected Rec Landings	2018 Rec Landings	13.27	6,020	13.27	6,020	13.27	6,020	13.27	6,020
Commercial Quota	Comm TAL + Transfer	2.77	1,255	2.77	1,255	2.47/ 3.06	1,123/ 1,388	2.47/ 3.06	1,123/ 1,388
Recreational Harvest Limit	Rec TAL - Transfer	9.48	4,301	3.62	1,641	8.05/ 10.91	3,651/ 4,950	2.19/ 5.05	991/ 2,290

Average ABC Approach

The average ABC approach offers consistency for a fishery that is predominantly dictated by MRIP estimates. Additionally, the probability of overfishing decreases from 2020-2021 while increasing SSB by approximately 10,000 mt per year. Furthermore, consistent ABCs offer stability in a fishery that is currently overfished and scheduled for a research track (benchmark) assessment in 2022.

Discards

Currently, there are two approaches used to calculate recreational discards. The discard estimates provided in the peer reviewed 2019 operational assessment use the MRIP data and incorporate a length-weight relationship for released fish from numerous sources. The discard estimates provided in the peer review of the new MRIP calibration are calculated by estimating the mean weight per bluefish and multiplying by the released fish (B2s) and then applying a 15% mortality rate. The resulting 2018 discard estimates are 9.90 M lbs (Assessment) and 4.03 M lbs (MRIP-mean), respectively.

Last year, the MC stated; "The MC suggested using recreational discard values from the NEFSC to characterize recreational discards in the next specifications cycle."

The bluefish regulations state; "the Bluefish Monitoring Committee shall recommend measures to ensure the ACL will not be exceeded". To align with how the Greater Atlantic Regional Fisheries Office monitors ACLs and avoids ACL overages, staff recommends using the MRIP mean weight estimated discards for the 2020/2021 fishing years.

Recreational Harvest Limit and Management Measures

The recreational landings in 2018 were 13,270,862 lbs. Pending MC and Council decision, the RHL may range from 3.62-9.48 M lbs using the average ABC approach and 2.19-10.91 M lbs using the annual ABC approach.

Using the average ABC approach and MRIP discards results in an RHL for 2020-2021 of 9.48 M lbs, which equates to a ~29% decrease from the expected recreational landings. Using the average ABC approach and NEFSC discards results in an RHL for 2020-2021 of 3.62 M lbs, which equates to a ~73% decrease from the expected recreational landings. Using the annual ABC approach and MRIP discards results in an RHL for 2020 of 8.05 M lbs, which equates to a ~40% decrease from the expected recreational landings. Using the annual ABC approach and NEFSC discards results in an RHL for 2020 of 2.19 M lbs, which equates to a ~84% decrease from the expected recreational landings.

Due to the variability in bluefish landings in recent years and the large range of potential bluefish RHLs to be selected by the MC, Council, and board, staff recommends a reduction in the amount of fishing days over the course of the season. To estimate the necessary reduction in season to ensure the RHL is not exceeded, staff used a three-year average (2016-2018) by state and wave to present bluefish harvest (Table 3). Furthermore, average bluefish percent reduction in coastwide harvest (lbs) associated with closing one day per wave from 2016-2018 in presented in Table 4.

Considering the staff recommended average ABC approach using the MRIP discards, recreational harvest would need to be constrained to 9.48 M lbs. This ~29% decrease from the expected recreational landings can be accounted for by closing waves 5 and 6 or waves 1 and 2, coastwide. Thus, the MC will need to account for the effects closing certain waves or fishing days will have on some states versus others (north vs. south).

Table 3. Annual average percent of bluefish harvest (lbs) by state and wave from 2016-2018 based on revised MRIP estimates.

Row Labels	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Total
2016	**0.87%**	**11.84%**	**38.12%**	**15.01%**	**28.72%**	**5.44%**	**100.00%**
MAINE	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%
NEW HAMPSHIRE	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
MASSACHUSETTS	0.00%	0.00%	17.97%	39.79%	42.24%	0.00%	100.00%
RHODE ISLAND	0.00%	0.00%	25.01%	34.08%	33.39%	7.52%	100.00%
CONNECTICUT	0.00%	0.00%	5.06%	48.20%	37.68%	9.06%	100.00%
NEW YORK	0.00%	4.87%	48.73%	22.48%	19.70%	4.21%	100.00%
NEW JERSEY	0.00%	9.13%	46.17%	3.41%	33.23%	8.06%	100.00%
DELAWARE	0.00%	0.00%	77.94%	5.97%	16.09%	0.00%	100.00%
MARYLAND	0.00%	0.00%	5.07%	44.78%	49.58%	0.57%	100.00%
VIRGINIA	0.00%	17.67%	41.41%	19.69%	21.11%	0.12%	100.00%
NORTH CAROLINA	0.01%	13.22%	30.31%	24.95%	29.28%	2.23%	100.00%
SOUTH CAROLINA	0.00%	17.14%	10.83%	1.82%	58.12%	12.09%	100.00%
GEORGIA	0.00%	16.89%	34.33%	2.46%	46.32%	0.00%	100.00%
FLORIDA	7.36%	42.45%	27.93%	1.49%	16.01%	4.77%	100.00%
2017	**0.29%**	**43.33%**	**25.84%**	**10.45%**	**12.19%**	**7.91%**	**100.00%**
MAINE	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
MASSACHUSETTS	0.00%	0.00%	25.67%	41.24%	33.09%	0.00%	100.00%
RHODE ISLAND	0.00%	0.00%	27.12%	15.25%	57.60%	0.03%	100.00%
CONNECTICUT	0.00%	0.00%	5.23%	52.22%	42.55%	0.00%	100.00%
NEW YORK	0.00%	0.01%	26.71%	23.77%	24.37%	25.14%	100.00%
NEW JERSEY	0.00%	25.98%	59.14%	4.90%	8.87%	1.12%	100.00%
DELAWARE	0.00%	50.52%	46.97%	0.29%	2.22%	0.00%	100.00%
MARYLAND	0.00%	1.54%	6.67%	58.40%	31.74%	1.65%	100.00%
VIRGINIA	0.00%	26.73%	2.70%	2.63%	7.03%	60.91%	100.00%
NORTH CAROLINA	1.05%	49.05%	28.28%	3.45%	12.99%	5.18%	100.00%
SOUTH CAROLINA	0.00%	49.85%	13.15%	5.94%	17.45%	13.60%	100.00%
GEORGIA	0.00%	0.00%	91.59%	4.99%	2.80%	0.62%	100.00%
FLORIDA	0.57%	92.88%	0.30%	1.69%	0.06%	4.50%	100.00%
2018	**15.84%**	**11.84%**	**21.88%**	**12.42%**	**26.87%**	**11.15%**	**100.00%**
MASSACHUSETTS	0.00%	0.00%	13.89%	53.26%	32.85%	0.00%	100.00%
RHODE ISLAND	0.00%	0.00%	8.35%	14.70%	76.95%	0.00%	100.00%
CONNECTICUT	0.00%	0.00%	3.05%	51.73%	45.22%	0.00%	100.00%
NEW YORK	0.00%	0.00%	55.65%	16.88%	26.30%	1.17%	100.00%
NEW JERSEY	0.00%	0.00%	46.42%	13.10%	40.32%	0.15%	100.00%
DELAWARE	0.00%	0.00%	80.38%	7.07%	11.80%	0.75%	100.00%
MARYLAND	0.00%	0.00%	0.70%	44.08%	55.20%	0.02%	100.00%
VIRGINIA	0.00%	0.58%	3.74%	28.93%	43.37%	23.38%	100.00%
NORTH CAROLINA	0.00%	13.32%	21.84%	8.65%	43.34%	12.85%	100.00%
SOUTH CAROLINA	0.00%	4.22%	36.47%	1.20%	56.38%	1.72%	100.00%
GEORGIA	0.00%	13.66%	36.52%	0.32%	4.06%	45.43%	100.00%
FLORIDA	46.45%	26.37%	1.45%	1.50%	1.70%	22.52%	100.00%
Coastwide	**3.46%**	**26.36%**	**29.35%**	**12.41%**	**20.74%**	**7.67%**	**100.00%**

Table 4. Average bluefish percent reduction in coastwide harvest (lbs) associated with closing one day per wave from 2016-2018 based on revised MRIP estimates.

Sum of Harvest (A+B1) Total Weight (lb) Row Labels	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
MAINE	0.00%	0.00%	1.15%	0.48%	0.00%	0.00%
NEW HAMPSHIRE	0.00%	0.00%	0.00%	1.61%	0.00%	0.00%
MASSACHUSETTS	0.00%	0.00%	0.34%	0.70%	0.59%	0.00%
RHODE ISLAND	0.00%	0.00%	0.37%	0.35%	0.87%	0.04%
CONNECTICUT	0.00%	0.00%	0.08%	0.81%	0.66%	0.07%
NEW YORK	0.00%	0.03%	0.64%	0.36%	0.37%	0.23%
NEW JERSEY	0.00%	0.24%	0.84%	0.08%	0.40%	0.07%
DELAWARE	0.00%	0.55%	0.95%	0.04%	0.10%	0.00%
MARYLAND	0.00%	0.01%	0.06%	0.78%	0.77%	0.01%
VIRGINIA	0.00%	0.27%	0.31%	0.27%	0.36%	0.43%
NORTH CAROLINA	0.01%	0.44%	0.45%	0.20%	0.44%	0.10%
SOUTH CAROLINA	0.00%	0.39%	0.30%	0.05%	0.74%	0.16%
GEORGIA	0.00%	0.21%	0.65%	0.01%	0.11%	0.66%
FLORIDA	0.23%	1.10%	0.09%	0.03%	0.05%	0.15%
Coastwide	**0.06%**	**0.43%**	**0.48%**	**0.20%**	**0.34%**	**0.13%**

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

MEMORANDUM

Date: August 20, 2019

To: Dr. Chris Moore, Executive Director

From: Matthew Seeley, Staff

Subject: 2020-2021 Bluefish Specifications

Executive Summary

An assessment update for bluefish was peer reviewed in early August 2019. The assessment incorporates data through 2018, including the recently revised (calibrated) time series (1985-2018) of recreational catch provided by the Marine Recreational Information Program (MRIP).[1]

Interim 2020 catch and landings limits for bluefish (Table 1) were adopted by the Council and Board in March 2019, intended to serve as a placeholder until the 2019 operational assessment is peer reviewed and used to develop management measures. The interim measures currently implemented for 2020 include an Acceptable Biological Catch (ABC) of 21.81 million lbs or 9,895 mt. Now that the assessment update is complete, the Scientific and Statistical Committee (SSC) should recommend 2020-2021 ABCs, for the Council and Atlantic States Marine Fisheries Commission's (Commission) Bluefish Board (Board) to consider at their joint October 2019 meeting.

Similarly, the Monitoring Committee (MC) should review recent fishery performance and make a recommendation to the Council and Board regarding 2020-2021, Annual Catch Targets (ACTs), Total Allowable Landings (TALs), commercial quotas, and recreational harvest limits (RHLs).

This memo provides recommendations for setting bluefish specifications for two years (2020-2021). <u>For 2020 and 2021, staff recommends an Acceptable Biological Catch (ABC) of 20.92 million pounds (9,489 mt)</u>.

[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, or calibrated, estimates of catch and landings for most years are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall bluefish catch and harvest estimates.

Table 1. Interim 2020 specifications for bluefish (in millions of pounds and metric tons) drafted as status quo from 2019.

Management Measure	2020 (Interim)		Basis
	mil lb.[2]	mt	
Overfishing Limit (OFL)	27.97	12,688	Stock assessment projections
ABC	21.81	9,895	Derived by SSC, based on Council risk policy (2019)
ACL	21.81	9,895	Defined in FMP as equal to ABC
Commercial ACT	1,682	3.71	(ACL – Management Uncertainty) x 17%
Recreational ACT	8,213	18.11	(ACL – Management Uncertainty) x 83%
Commercial Discards	0	0	Value used in assessment
Recreational Discards	1,129	2.49	2017 discards
Commercial TAL	1,682	3.71	Commercial ACT – commercial discards
Recreational TAL	7,083	15.62	Recreational ACT – recreational discards
Expected Recreational Landings	4,318	9.52	2017 Recreational landings
Transfer	1,814	4.00	Proposed by the Council via a motion
Commercial Quota	3,497	7.71	Commercial TAL + transfer
RHL	5,271	11.62	Recreational TAL – transfer

Introduction

The Magnuson-Stevens Act (MSA) requires each Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for 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 addresses scientific uncertainty, while the MC recommends ACTs that address management uncertainty and management measures to constrain catch to the TALs.

In early 2019, the Council/Board adopted recommendations for interim 2020 catch and landings limits for bluefish, with the expectation that these limits would be revisited in early 2020 based on the results of the new assessment update.

Both the SSC and MC will review these 2020 measures and recommend measures for 2020-2021. The Council and the Commission's Bluefish Board will meet jointly to consider these recommendations in October 2020.

[2] Interim specifications are based on BASE "old" MRIP estimates.

The SSC should consider recommending either constant 2-year ABCs (using the standard risk policy application) or average ABCs from 2020-2021 based on recent adjustments to the Council's risk policy that allow for multi-year ABC averaging.

On April 11, 2018, the final rule published implementing the Omnibus ABC Framework Adjustment (Framework 3 to the Bluefish FMP; 83 FR 15511). This framework adjustment allows the SSC to specify constant multi-year ABCs if the average of the probabilities of overfishing meet the Council's risk policy goals and if the resulting ABC always results in less than a 50% probability of overfishing in any one year. Additional considerations and recommendations for ABC averaging are described in the "Staff ABC Recommendations" section of this memo.

Recent Catch and Landings

Commercial and recreational (revised MRIP data) landings and dead discards 1994-2018 are shown in Figure 1.

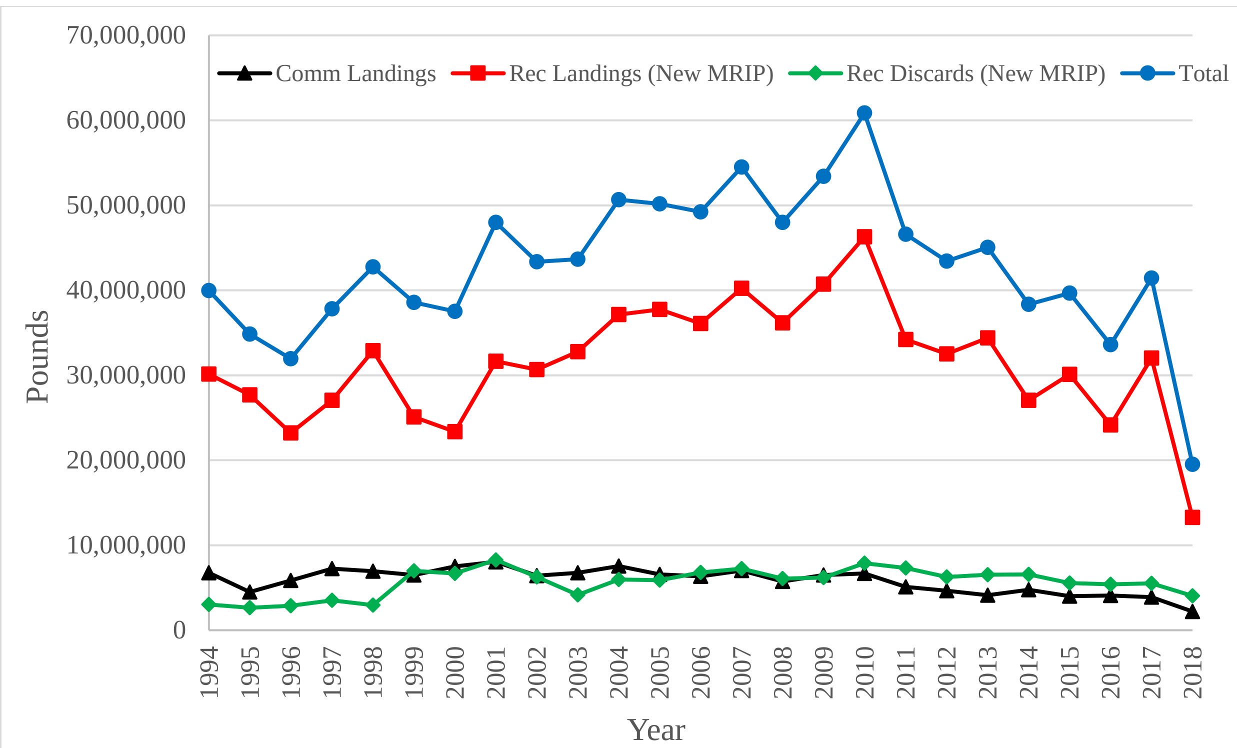


Figure 1. Bluefish catch components 1994-2018 including the revised MRIP time series for recreational data.

New MRIP recreational landings decreased by approximately 59% from 2017 to 2018 (32.02 million pounds to 13.27 million pounds) and reported the lowest recreational landings for the time series in 2018. This coincides with effort, as the number of recreational trips in 2018 (5,749,291) is the lowest reported in the time series.

Commercial landings decreased by approximately 40% from 2017 to 2018 (3.64 million pounds to 2.20 million pounds). This decrease led to the lowest recorded landings in the commercial time series. Landings were broken down with the following gear: gillnet (50%), followed by unknown gear (26%), otter trawl/bottom fish (9%), other (9%) and handline (6%). Commercial (and recreational) landings by state are available in Table 2.

Table 2. 2018 recreational (New and Old MRIP estimates) and commercial landings by state.

State	"New" Recreational Landings	"Old" Recreational Landings	Commercial Landings
ME	0	0	29
NH	0	0	0
MA	611,557	328,240	195,402
RI	210,033	119,961	237,182
CT	340,666	238,815	48,220
NY	1,399,517	425,036	539,345
NJ	2,007,110	613,605	56,210
DE	315,105	238,815	6,486
MD	493,192	152,459	27,353
VA	264,534	70,549	102,630
NC	2,630,685	767,364	765,764
SC	403,141	93,814	0
GA	70,284	10,551	0
FL	4,525,038	741,516	224,999
Total	13,270,862	3,639,697	2,203,620

Review of Prior SSC Recommendations

In July 2018, the SSC recommended to carry forward its 2018 ABC recommendation for 2019, as the SSC was not provided any new stock projections and recent catches remained consistent with previous projections. To make this recommendation, the SSC reviewed 2017 fishery performance, the 2017 data update, and materials from the SAW 60 benchmark assessment. Additionally, in February 2019, the SSC recommended status quo specifications for the interim 2020 measures until the results of the 2019 operational assessment.

To derive the 2018 ABC, a CV of 60% was applied to the OFL to reflect the much-improved treatment of uncertainty in the current bluefish assessment. Three-year specifications were required (at the time). The OFL level for 2016 was determined by using $F_{35\%}$=0.19. The equilibrium catch (a proxy for MSY) under this scenario is 31.84 million lbs (14,443 mt). The SSB_{msy} is therefore 223.42 million lbs (101,343 mt) and SSB_{2014} = 190.78 million lbs (86,534 mt), so the SSB/SSB_{msy}=0.85, with an SSB threshold of 111.71 million lbs (50,672 mt). The SSC applied the Council policy of P* = 0.307 in 2016. This resulted in ABCs of:

2016: 8,825 mt (P* = 0.307)
2017: 9,363 mt (P* = 0.328)
2018: 9,895 mt (P* = 0.327)

The 2019 ABC recommendation was status quo from 2018.

2019: 9,895 mt (P* = 0.327)

The SSC considered the following to be the most significant sources of uncertainty associated with the determination of the OFL and ABC (July 2018 SSC Report):

- The SSC-recommended ABC is based on rolling over a projection from 2016 for 2018 for an additional year.
- Uncertainty in the stock recruitment relationship adds to uncertainty in appropriate reference points.
- The uncertainty in MRIP sampling overall, which is the most influential data in the assessment. Questions have been raised about the uncertainty in the historical MRFSS/MRIP estimates in general and are particularly relevant here given the highly episodic nature of Bluefish catches in the recreational fisheries coast wide.
- Approximately 60% of the population biomass is in the aggregated 6+ age group for which there is relatively little information.
- Commercial discards are assumed to be insignificant, which may not be the case.

Stock Status and Biological Reference Points

Projections

In August 2019, a bluefish operational assessment, which included revised bluefish MRIP estimates through 2018 changed the stock status and biological reference points from SAW 60, which utilized data through 2014. All information from this operational assessment were and should be interpreted as preliminary results until publication of the final report.

The biological reference points for bluefish revised through the 2019 operational assessment include a fishing mortality threshold of $F_{MSY} = F_{35\%}$ (as the F_{MSY} proxy) = 0.183, and a biomass reference point of $SSB_{MSY} = SSB_{35\%}$ (as the SSB_{MSY} proxy) = 438.10 million lbs (198,717 mt). The minimum stock size threshold (1/2 SSB_{MSY}), is estimated to be 219.05 million lbs (99,359 mt); Table 3. SSB in 2018 was 200.71 million lbs (91,041 mt) (Figure 2).

Operational assessment results indicated that the bluefish stock was overfished and overfishing was not occurring in 2018 relative to the biological reference points. Fishing mortality on the fully selected age 2 fish was 0.146 in 2018, 80% of the updated fishing mortality threshold reference point F_{MSY} proxy = $F_{35\%}$ = 0.183 (Figure 3). There is a 90% probability that the fishing mortality rate in 2018 was between 0.119 and 0.205.

Table 3. Summary of changes in biological reference points and terminal year SSB and F estimates resulting from the SAW/SARC 60 process.

	SAW/SARC 60 (2015) Biological Reference Points and most recent update stock status results (data through 2014)	**Bluefish Operational Assessment (2019) Biological Reference Points and stock status results (data through 2018)**
Stock Status	Not Overfished, Not Overfishing	Overfished, Not Overfishing
SSB_{MSY}	223.42 million lbs (101,343 mt)	438.10 million lbs (198,717 mt)
½ SSB_{MSY}	111.71 million lbs (50,672 mt)	219.05 million lbs (99,359 mt)
Terminal year SSB	*2014:* 258.76 million lbs (86,534 mt) 85% of SSB_{MSY}	*2018:* 200.71 million lbs (91,041 mt) 46% of SSB_{MSY}
F_{MSY}	0.190	0.183
Terminal year F	*2014:* 0.157 83% of F_{MSY}	*2018:* 0.146 80% of F_{MSY}

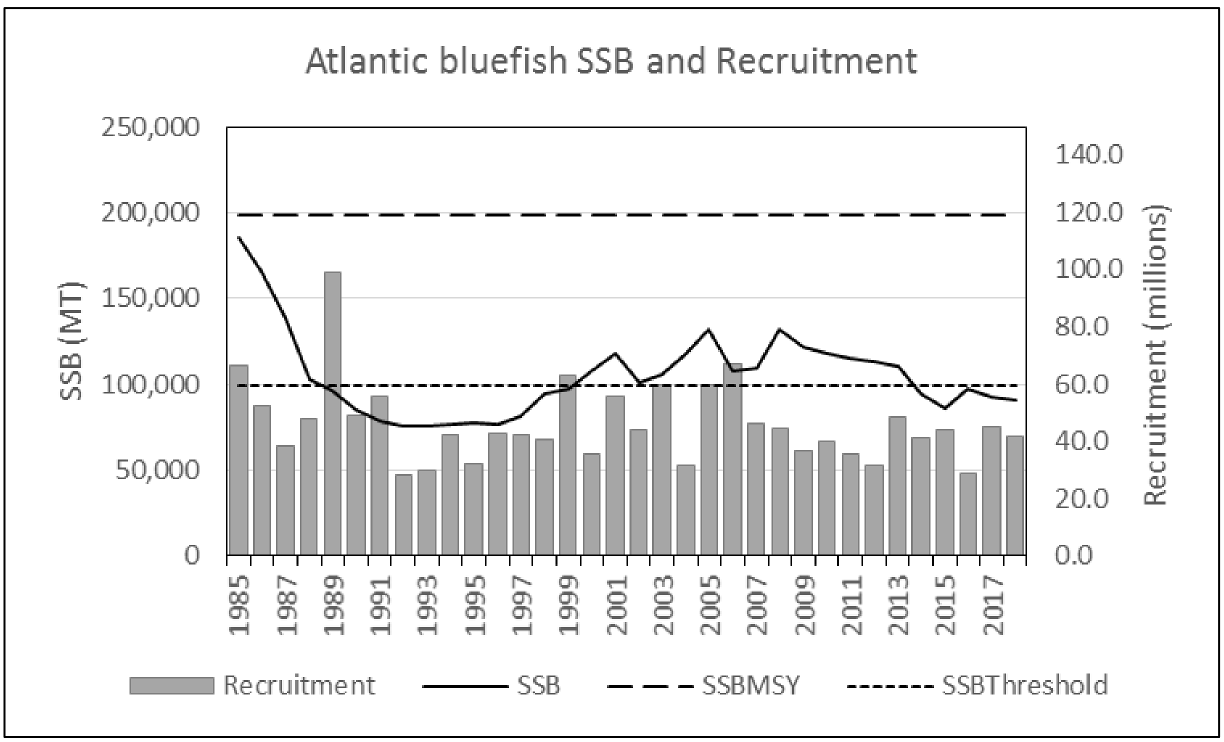


Figure 2. Atlantic bluefish spawning stock biomass (SSB; solid black line) and recruitment at age 0 (R; gray vertical bars) by calendar year. The horizontal dashed line is the updated $SSB_{MSY\ proxy} = SSB_{40\%}$ = 198,717 mt, and the dotted black line is the $SSB_{Threshold}$ = 99,359 mt.

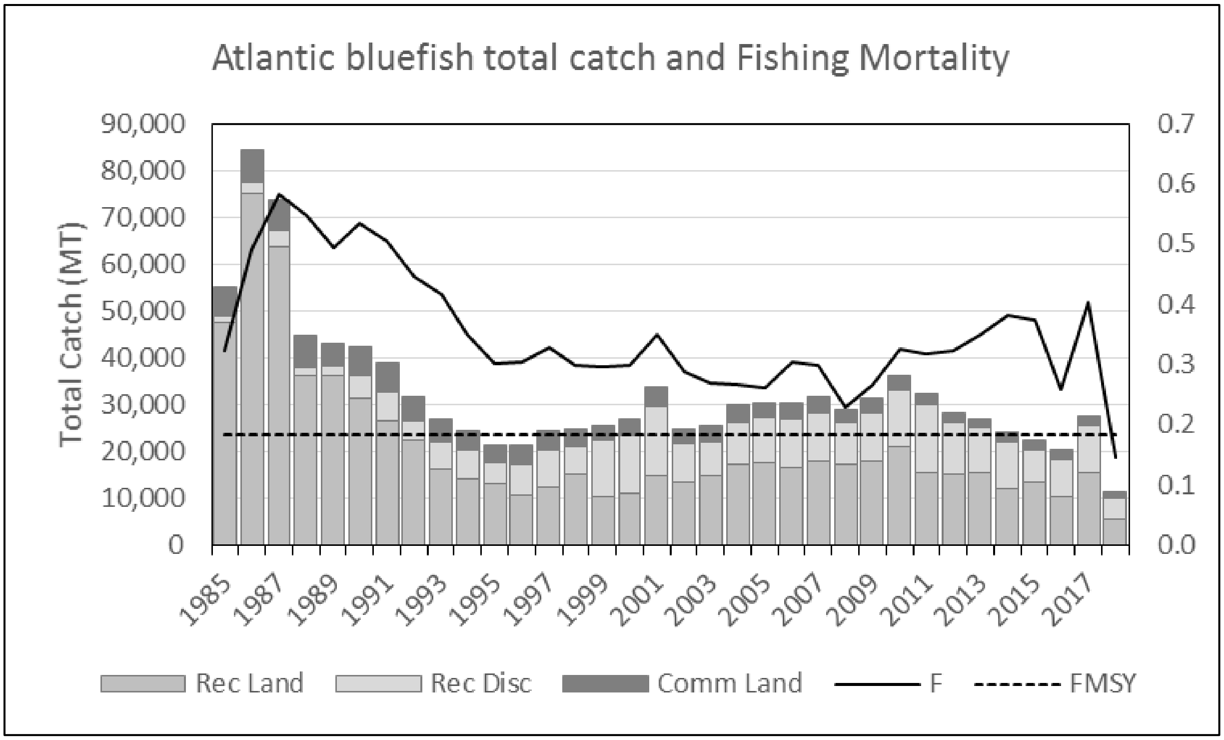


Figure 3. Total fishery catch (metric tons; mt; solid line) and fishing mortality (F, peak at age 3; squares) for Atlantic bluefish. The horizontal dashed line is the updated F_{MSY} proxy = $F_{35\%}$ = 0.183.

The bluefish stock has experienced a decline in SSB over the past decade, coinciding with an increasing trend in F. Recruitment has remained fairly steady, fluctuating just below the time-series mean of 46 million fish. Both commercial and recreational fisheries had poor catch in 2016 (44.91 million lbs or 20,370 mt), and 2018 (24.89 million lbs or 11,288 mt), resulting in the second lowest and lowest catches on record, respectively. As a result of the very low catch in 2018, fishing mortality was estimated below the reference point for the first time in the time-series. These lower catches are possibly a result of availability. Anecdotal evidence suggests larger bluefish stayed offshore and inaccessible to most of the recreational fishery during these two years (Wood 2019).

Staff Recommendations for 2020-2021 ABCs

For 2020 and 2021, staff recommends adopting the average (Table 4B) ABC of 20.92 million pounds (9,489 mt) based on the projections developed from the 2019 bluefish operational assessment (Table 4). Biologically, the variable vs. averaged approaches are similar, resulting in comparable P* values and projected stock biomass at the end of the two years. Staff recommends the average approach because it offers consistency for a fishery that is predominantly dictated by MRIP estimates. Additionally, the probability of overfishing decreases from 2020-2021 while increasing SSB by approximately 10,000 mt per year. Furthermore, consistent ABCs offer stability in a fishery that is currently overfished and scheduled for a research track (benchmark) assessment in 2022.

Table 4. 2019 Bluefish Operational Assessment ABC Projections for 2020-2021. The projections assume the 2019 ABC of 9,897 mt with recreational catch in 'New' MRIP equivalents will be taken in 2019, providing an estimated catch of 22,614 mt in 2019. OFL Total Catches are catches in each year fishing at FMSY = 0.183, prior to calculation of the associated annual ABC. The projections sample from the estimated recruitment for 1985-2018 and use the MAFMC standard risk policy with OFL CV = 60%.

A

Not Staff Recommended - Annual ABC 2020-2021
Total Catch, Landings, Discards, Fishing Mortality (F)
and Spawning Stock Biomass (SSB)
Catches and SSB in metric tons

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	ABC SSB
2019	15,373	22,614	0.279	0.757	92,773
2020	14,956	8,676	0.103	0.163	101,527
2021	17,019	10,301	0.108	0.183	112,187

B

Staff Recommended - Average ABC 2020-2021
Total Catch, Landings, Discards, Fishing Mortality (F)
and Spawning Stock Biomass (SSB)
Catches and SSB in metric tons

Year	**OFL Total Catch**	**ABC Total Catch**	**ABC F**	**ABC P* value**	**ABC SSB**
2019	**15,373**	**22,614**	**0.279**	**0.757**	**92,773**
2020	**14,956**	**9,489**	**0.113**	**0.206**	**101,124**
2021	**16,889**	**9,489**	**0.100**	**0.149**	**111,617**

2020-2021 Sector-Specific Catch and Landings Limits

As defined by the Omnibus ACLs and AMs Amendment (Amendment 3 to the Bluefish FMP), the ABC includes both landings and discards, and is equal to the ACLs for bluefish (Figure 4). Based on the allocation percentages in the FMP, 83% of the ACT is allocated to the recreational fishery, and 17% to the commercial fishery.

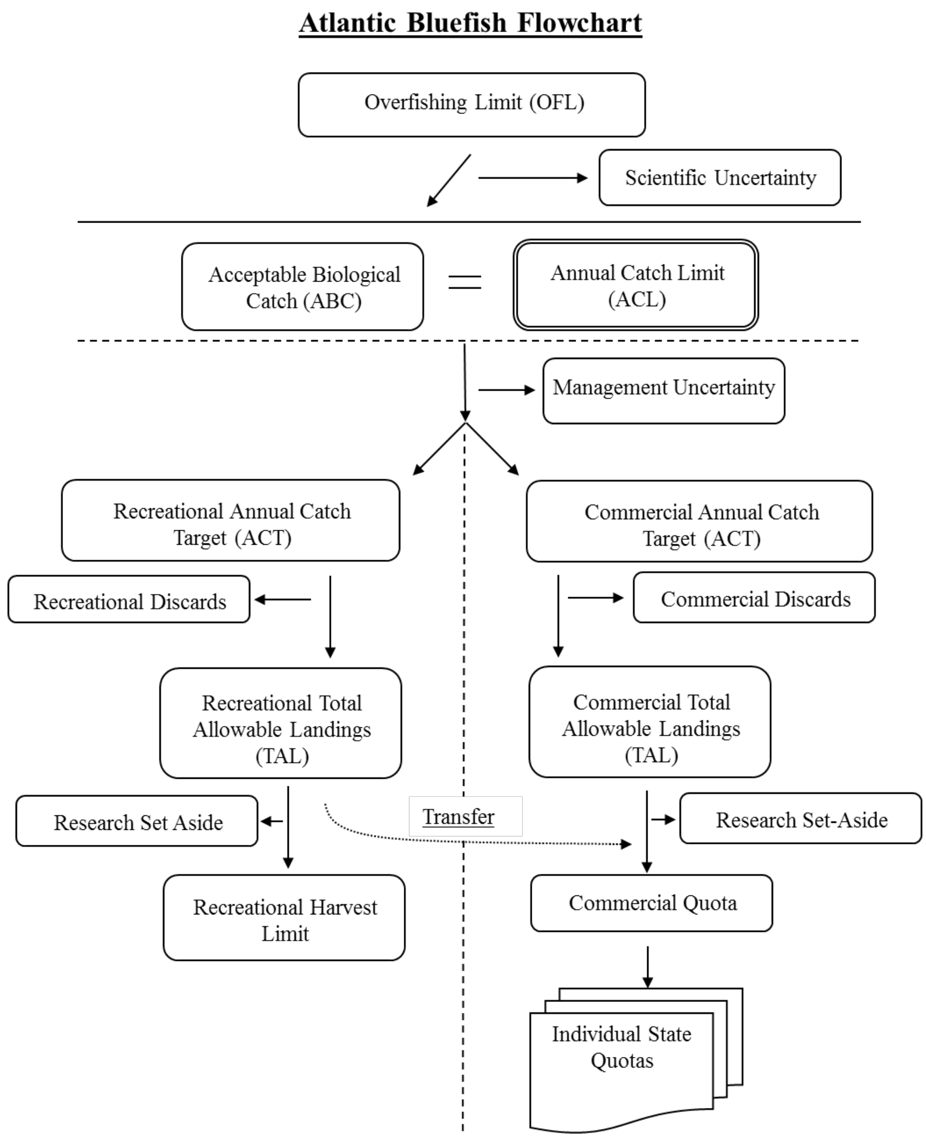


Figure 4. Bluefish specification process as described in Amendment 3 to the Bluefish FMP.

The MC is responsible for recommending ACTs TALs, which are intended to account for management uncertainty and estimated discards, for the Council and Board's consideration, as well as any other associated management measures. The MC is responsible for considering all relevant sources of management uncertainty in the bluefish fishery and providing the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT and TAL.

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 bycatch) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels). Table 5 includes the staff recommended ACTs/TALs and associated management measures identified using the 2020-2021 ABC projections of 20.92 million lbs (9,489 mt).

Table 5. Current fishing year specifications (2019) and 2020-2021 staff recommended specifications for bluefish.

Management Measure	2019 (Current Measures set in 2018)		Basis for 2020-2021 Staff Recommendation	2020-2021 (Staff recommended)	
	M lbs	mt		M lbs	mt
ABC	21.81	9,895	Derived by SSC; Council P* policy	20.92	9,489
ACL	21.81	9,895	Defined in FMP as equal to ABC	20.92	9,489
Management Uncertainty	0	0	Derived by MC	0	0
Commercial ACT	3.71	1,682	(ACL – Mgmt. Uncertainty) x 17%	3.56	1,613
Recreational ACT	18.11	8,213	(ACL – Mgmt. Uncertainty) x 83%	17.36	7,876
Commercial Discards	0	0	Value used in assessment	0	0
Recreational Discards	2.99	1,356	2018 Discards – MRIP estimated	4.03	1,829
Commercial TAL (pre-transfer)	3.71	1,682	Comm ACT – Comm Discards	3.56	1,613
Recreational TAL (pre-transfer)	15.12	6,857	Rec ACT – Rec Discards	13.33	6,047
TAL Combined	18.83	8,539	Comm TAL + Rec TAL	16.89	7,660
Transfer	4.00	1,814	Make RHL equal Expected Rec Landings (unless already exceeded)	0	0
Expected Rec Landings	11.58	5,253	2018 Rec Landings	13.27	6,020
Commercial quota	7.24	3,286	Comm TAL + Transfer	3.56	1,613
Recreational harvest limit	11.58	5,253	Rec TAL - Transfer	13.33	6,047

References

Atlantic States Marine Fisheries Commission (ASMFC).1989. Fishery Management Plan for Bluefish. 81 pp. + append.

Mid-Atlantic Fishery Management Council. 1990. Fishery management plan for the bluefish fishery. Dover, DE. 81 p. + append.

Mid-Atlantic Fishery Management Council. 2011. Amendment 3 to the fishery management plan for the bluefish fishery. Dover, DE.

Mid-Atlantic Fishery Management Council. 1990. Framework 3 to the fishery management plan for the bluefish fishery. Dover, DE.

Northeast Fisheries Science Center (NEFSC). 2015. 60th Northeast Regional Stock Assessment Workshop (60th SAW) Assessment Report. US Dept Commerce, Northeast Fish Sci Cent Ref Doc. 15-08; 870 p.

Wood, Anthony. 2019. Draft Atlantic Bluefish Operational Assessment for 2019. Northeast Fisheries Science Center. Woods Hole, MA.

Bluefish Fishery Performance Report

August 2019

The Mid-Atlantic Fishery Management Council's (Council) Bluefish Advisory Panel (AP) met via webinar on August 26, 2019 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.

Advisory Panel members present: Frank Blount (RI), Angelo Cannuli, Jr (MD), Victor Hartley III (NJ), Phil Langley, Jr (MD), Arnold Leo (NY), Kevin Wark (NJ), Judith Weis (NY).

Others present: Paul Eidman, Alan Bianchi (NCDMF), Chris Batsavage (NC), Dustin Colson Leaning (ASMFC Staff), Greg DiDomenico (GSSA), Mike Celestino (NJDFW), Paul Caruso, Rich King, Robert Lorenz, Rusty Hudson (FL), Steve Cannizzo (NY), Anthony Friedrich, Paul Caruso, John Boreman and Mark Holliday (MAFMC SSC), and Jose Montanez and Matt Seeley (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?

Factors Influencing Catch

Recreational

There was consensus on the decrease in bluefish abundance coast wide. This was prevalent in northern states where bluefish were often identified to be further offshore and not available to anglers that typically target them (private anglers may not want to travel to where the bluefish are). In the southern states, bluefish abundance may have been slightly higher, yet still much lower than previous years (since bluefish have been offshore). Small fish (1-3 lbs) were available early in the year while larger fish (5-10 lbs) were not present for long periods of time. When available, large fish were present for no more than a week at a time.

MA – Age 1-2 bluefish are seasonally available near MA when they never were before. Larger fish did not appear.

NY – Bluefish are not as ubiquitous as they once were. Off the East End of Long Island, the larger bluefish arrived in late May as usual, but thereafter there has been a very noticeable lack of smaller bluefish (1-3 lbs.) that typically are abundant in the bays.

NY – Often, the target species is sea bass, but when people run into bluefish, they harvest them regardless of the trip.

NJ – Charter fishermen noted that bluefish were abundant in 2017, yet the large fish did not show up at all in 2018. Little activity in the shallows that ended quickly. Surf casting was nonexistent. But, 10-18" bluefish are accessible inshore because anglers are targeting Spanish mackerel and bonito.

NJ – Shark boats have reported bluefish offshore (>30 miles) but party boats do not go that far to fish for bluefish. Thus, the fishery has shifted further offshore. People are not targeting local bluefish due to availability. The typical big bay run did not really happen, but some surf fishing has still proven successful. Often, bluefish have been reported offshore where anglers were targeting tuna (30-50 fathoms). Additionally, for-hire anglers typically observe smaller fish early on (1.5-2.5 lbs) and rarely see fish above 4-5 lbs. This may coincide with not targeting them offshore.

MD – Bluefish are targeted due to the striped bass northern migration in the Chesapeake Bay. Bluefish numbers have been down, and the mackerel numbers have been dominating the fishery. Role reversal compared to recent bluefish dominated years – 80% mackerel, 20% bluefish.

MD – 2017: huge influx of large fish, 2018: abundance went down, 2019: large fish coastal in state waters. Not targeted from the charter perspective. As people target Spanish mackerel, they encounter consistent 5-8 lb fish hanging around throughout the summer around the inlet on the nearshore shole.

MD – Party/Charter: 10 fish per angler has been adequate. Education – fresh bluefish is good to eat. Continue with outreach.

NY/NC – For-hire is slightly down in recent years due to restrictive bag limits for species like striped bass, which leads to lower directed trips. Since a bluefish trip is any trip where a bluefish is harvested, lower party/charter trips will result in less bluefish for-hire trips. Yet, not all states are experiencing a decrease in the for hire.

NC – 10 fish is enough
NY – need the 15 fish (the perception you can catch to the higher limit helps sell trips)

NC – Bluefish appear to have become more important as a target species to the recreational and for-hire fisheries in recent years, perhaps due to the lack of availability of state managed species. In the last few years, it seems that bluefish schools are smaller and a *little less* available. This year we never had the large fish. They often ranged from 1-3 lbs. Large fish were not targeted as much because we do not usually travel offshore for bluefish.

NC – Fish are consistently under 3 lbs. but are available in the surf throughout the winter. At times, people are using these schools of fish for crab bait even though bluefish have become more accepted as a culinary target.

NC – Lower bluefish availability leads to less interest in targeting them.

NC – In recent years, there have been some good year classes for nearshore species (e.g. Sea trout and red drum) in the fall. Typically, these species being available to fishermen results in less people targeting bluefish on party/charter vessels.

Commercial

NY – Have not seen such a poor showing of bluefish in a long time. Small run in the spring, but completely died off shortly after. Commercial report coincides with the available data. Bluefish in the Bay fishery on the east end of Long Island have been very scarce.

NY – Prefer status quo management from 2018 to 2019. Bluefish are no longer as ubiquitous as they once were. It is important to focus concerns on the young of the year. Fishing is not the problem, it is the availability which is driven by climate and water quality.

NY/NJ – Not likely that NY will exceed the commercial quota. Maintain the ability to transfer quota. Appreciate that quota transfers can happen but does not want to see fleets disabled due to loss of quota.

NJ – Strong and consistent recruitment events over the last few years. Will have a better estimate of abundance in late Fall because fish move out of the bays. Effort is down after a week and a half run of bigger fish (fish are staying offshore – environmental issues). Not many people are targeting them – landings down and recruitment constant.

NC – Proper care of bluefish is very important, and outreach should be conducted on how to handle bluefish from when they are landed until when they are consumed.

Public Comment – A member of the public from the southern region suggested creating another sector allocation that is subsistence fishing to support the anglers that are not commercially harvesting yet fishing “harder” in order to fill a freezer for the year. Responses by an AP member and other members of the public from the north wanted to make it clear that the for-hire industry does not want to see a reduction in the sector allocations for a subsistence fishery or see changes to the bag limits because many people appreciate being able to harvest the full limit and it offers incentive to go fishing.

Market/Economic Conditions

NY – Bluefish were available to sell for a very short period. They sold for $.70-.90/lb until fish were so scarce the gill netters stopped setting for them. For the second half of August, bluefish have been almost nonexistent in the local markets.

NJ – Point Pleasant will often catch and market bluefish successfully in November and December.

NJ/VA – Prices have been as high as $1.75/lb, which depends on volume. The small steady supply has been getting the money and we do our best to not oversaturate the market. People's perception on the market has changed and it has been hard to gauge due to the availability.

NC – Bluefish are becoming increasingly important to the recreational fishery, especially to the for-hire sector due to the decrease in abundance of other nearshore available species. Ultimately, if the large run of big fish occurs, it is a very good thing for the bluefish fishery.

Management Issues

RI/NY/MD/NC – There was contradiction between the northern and southern states related to the current 15 fish bag limit. An AP member stated that few recreational fishermen are likely to keep more than 10 fish and that they would like to see a reduction in the recreational bag limit. Furthermore, reducing the bag limit (to 10 fish) will likely have minimal impacts on anglers and would be more in line with state-specific bag limits. Other AP members do not want to see a change to the recreational bag limit because the higher limit creates incentive for the public in the for-hire fishery (even though they often do not "limit out").

NY – In the recreational fishery, bycatch/discard mortality may be higher than expected.

NJ – Very little commercial bluefish discards. Everything caught is brought to shore.

MD – Bag limit is not a constraining factor.

NC – Most recreational anglers do not keep a lot of bluefish. They throw back a mix of sizes depending on the individual. Need to protect abundance in the fishery. In North Carolina there is a citation program (not a ticket) which allows anglers to fill out a form at a weigh station for bluefish they release. They can receive a certificate for large bluefish in the "release" category. This promotes catch-and-release fishing.

NC – While the commercial discards are considered to be insignificant in the assessment, there is some localized bycatch in some commercial fisheries (beach seine, different trawls, and ocean drop net and estuarine flounder net fisheries) and not zero.

Research Priorities

Need to better understand the dynamics between the inshore and offshore populations. More specifically, during the spring migration, there is another component of the stock that stays way offshore and does not appear to be the same as the fish taking part of the spring migration. This offshore component of the stock seems to miss the Mid-Atlantic Bight during the migration up north (towards Montauk). It is important to investigate this migration event in order to better understand the dynamics of the stock. What are the differences between the offshore and inshore bluefish populations?

Future studies should look at the estuaries where juveniles live. The environmental conditions in the estuaries may be more important than that of the ocean for population success or decline. Researchers have found that snappers living in more polluted estuaries, eating more polluted menhaden and mummichogs, did not eat as much and did not grow as well as snappers in cleaner estuaries. The researchers did not trace them in the ocean, but suspect they are less likely to "make it" to become adults.

Research should be conducted to track down an estimate of what has caused a decline of this species. Identify the environmental factors leading to the change in stock status to better understand what environmental or non-environmental factors bluefish cue in on? What is causing more species like bluefish to move out? Dredges? Sand mining? Mobile gear? Water quality?

Conduct a post-release mortality study to identify the amount of fish released by recreational anglers that actually die. Additionally, identify how many fish are “released” dead.

Conduct environmental investigations to address shifting natural shorelines and habitat destruction.

Identify any cyclical patterns in abundance over the past 50 years. What causes these patterns (if any) and can we identify the factors that may be influencing them?

Investigate public stakeholder perception of the recreational bluefish fishery in order to identify how the public would like this fishery to look like in years to come. Bluefish is an important recreational fishery and it is important to ask the recreational fishing community to investigate how they perceive this fishery in the future. Use for-hire logbooks to see what kind of data we can capture. We want to use that data to better understand where the fish are and how to characterize the recreational fishery. This could emerge into a good educational and outreach opportunity.

Other Issues

Biological characteristics of bluefish life history need to be considered when developing catch and landings limits recommendations for this species. There is evidence that as bluefish migrate along the coast during the spring and summer there may be multiple spawning events. Recent observations are leading fishermen to believe what we think we know may be incorrect. Management should be tailor made for typical or atypical life histories, depending on the species under consideration.

The bluefish permit is open access and leads to a lot of unnecessary permits. This makes it more difficult to identity who is actually fishing, and often presents cases where what happens on the water does not equal up to who is permitted.

Appendix A

Bluefish Research Priorities

Below are the research priorities for bluefish that the Council identified in their Comprehensive Five Year (2016-2020) Research Plan. We are seeking feedback from the AP on these priorities (are they right, wrong, which are most important etc.) or other research priorities that you may have for the development of the next comprehensive research plan.

Surveys:

Fishery-Dependent

- Evaluate species associations with recreational angler trips targeting bluefish to potentially modify the bluefish recreational CPUE index used in the assessment.
- Initiate fishery-dependent sampling of offshore populations of bluefish.

Fishery-Independent

- Develop a fishery independent index that better captures older, larger fish (which would reduce reliance on MRIP sampling).

Modelling/Quantitative:

- Develop bluefish specific MSY reference points or proxies.
- Evaluate changes in selectivity of age-0 bluefish relative to water temperature.
- Evaluate methods for integrating disparate indices produced at multiple spatial and temporal scales into a stock-wide assessment model.

Biology/Life History/Habitat:

- Investigate how environmental variability may affect juvenile movements and distribution, which in turn, may affect availability.

Bluefish Fishery Information Document

August 2019

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for bluefish with an emphasis on 2018. 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

- According to the most recent peer reviewed stock assessment (2015), bluefish is not overfished and overfishing is not occurring, *but an assessment update will be final by the end of August and will change estimated stock biomass, biological reference points, fishing mortality, and our understanding of stock status*.
- In 2018, the recreational harvest limit increased by 1.93 million pounds and the commercial quota decreased by 1.3 million pounds. Cumulatively, the recreational and commercial fishery recorded an underage of 12.98 million pounds.
- Old MRIP (BASE) recreational landings decreased by ~62% from 2017 to 2018 (9.52 million pounds to 3.64 million pounds). New MRIP (FCAL) recreational landings decreased by ~59% from 2017 to 2018 (32.02 million pounds to 13.27 million pounds).
- Commercial landings decreased by ~40% from 2017 to 2018 (3.64 million pounds to 2.20 million pounds).

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

The bluefish benchmark stock assessment was peer reviewed in June 2015 and approved for use by management at SAW/SARC 60. This benchmark assessment uses a forward-projecting statistical catch-at-age model called ASAP (Age Structured Assessment Program). For the most recent benchmark, the catch-at-age matrices were completely reconstructed to incorporate new age data, including archived historical samples that had not been processed at the time the last benchmark (SAW/SARC 41; 2005) was conducted, and to correct aging errors in the earlier years of the time series (NEFSC 2015).

The biological reference points estimated in the previous benchmark assessment (SAW/SARC 41) were MSY reference points for F and total biomass (F_{MSY}, B_{MSY}). However, MSY reference points require a reliable stock-recruitment relationship. The stock-recruitment relationship for bluefish is poorly defined, due to the lack of information on recruitment at small stock sizes, with steepness estimated to be close to one for most model runs (NEFSC 2015). Therefore, in SAW/SARC 60, SPR-based (spawn per recruit) reference points were used as a proxy for MSY reference points.

Results from the 2015 benchmark stock assessment indicate that the bluefish stock was not overfished and overfishing was not occurring in 2014 relative to the biological reference points (BRPs) from the 2015 SAW/SARC 60. Modeling results indicated that the estimated SSB was 190.77 million pounds (86,534 mt) in 2014 (85 percent of the accepted reference point SSB_{MSY} proxy = $SSB_{35\%SPR}$ = 223.42 million pounds or 101,343 mt). Spawning stock biomass declined since the beginning of the time series, from a high of 340.90 million pounds (154,633 mt) in 1985 to a low of 116.34 million pounds (52,774 mt) in 1997, before increasing again. The stock spawning biomass average for the 1985-2014 time series is 175.15 million pounds (79,449 mt). Fully-selected fishing mortality in 2014 was estimated to be 0.157, below the F threshold ($F_{MSY\ proxy}$ = $F_{35\%SPR}$ = 0.19). Fully selected F peaked in 1987 at 0.477 and then declined gradually since then, with a time series average of 0.284.

2019 Stock Assessment Update

Bluefish is currently going through an operational assessment for 2020 and beyond and will be final by the end of August 2019. The update will include the new recalibrated MRIP values and is expected to change the estimated stock biomass, current biological reference points, and fishing mortality.

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.

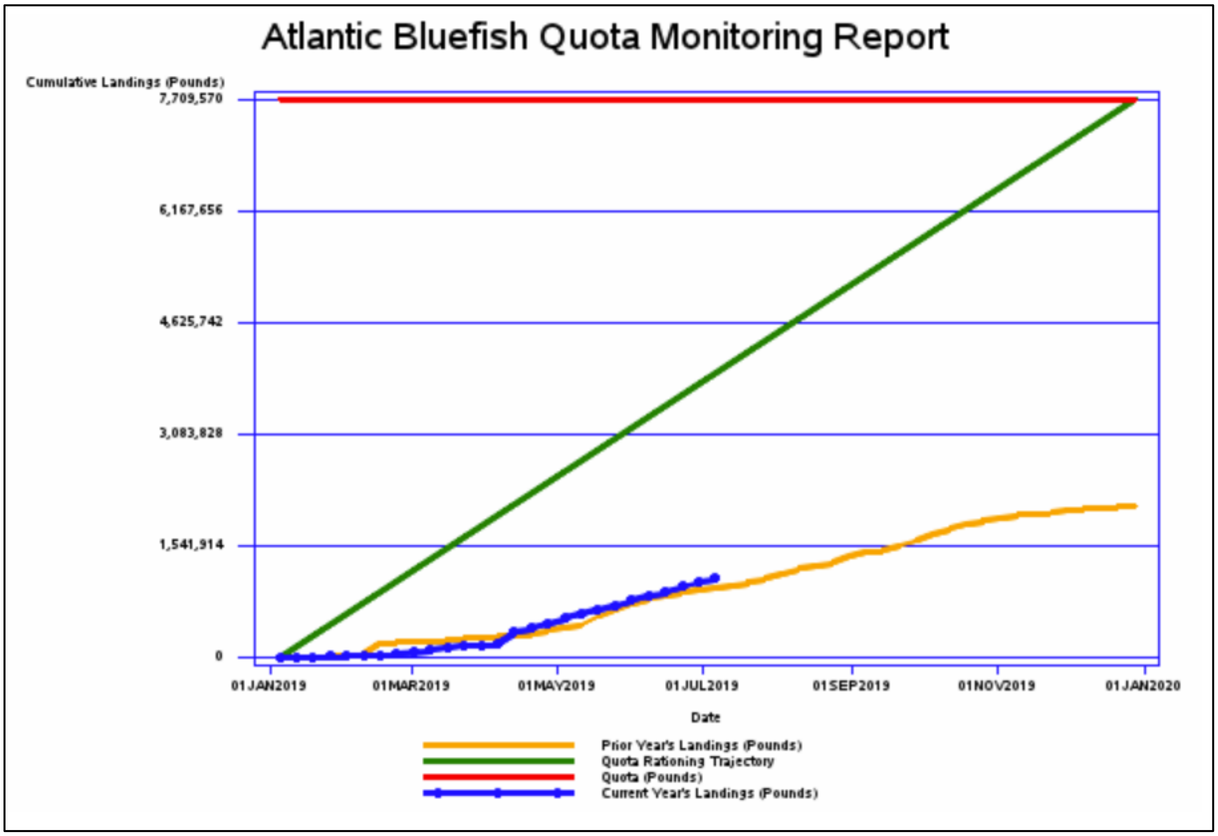
The Bluefish Fishery Management Plan (FMP) was implemented in 1990 and established the Mid-Atlantic Fishery Management Council's management authority over the fishery in federal waters. Amendment 1, implemented in 2000, addressed stock rebuilding and created the Bluefish Monitoring Committee which meets 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.

For bluefish, the annual catch target (ACT) is split 83 percent and 17 percent into recreational and commercial ACTs, respectively, and the discarded component of that catch is deducted to arrive at recreational and commercial total allowable landings (TAL). Additionally, landings above the expected recreational harvest can be "transferred" from the recreational to the commercial fishery as long as the final commercial quota does not exceed 10.5 million pounds.

The Council's Scientific and Statistical Committee (SSC) reviews assessment results and the Advisory Panel's fishery performance report and determines the allowable biological catch (ABC) for the upcoming year. 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.

Fishery Performance Relative to Management Measures

The current commercial landings and fishery performance is slightly ahead of the 2018 landings (Figure 1; as of July 8, 2019). The recreational and commercial landings relative to specified management measures are provided in Table 1. Except for 2007, the bluefish fishery has never exceeded the TAL. In 2007, the recreational fishery exceeded the recreational harvest limit by about 2.69 million pounds, and although the commercial fishery underperformed by 1.18 million pounds, the combined landings (29.27 million pounds) were above the specified TAL (27.76 million pounds). In 2018, the recreational fishery landed 3.64 million pounds compared to the 11.58 million pounds RHL (a 7.94-million-pound underage), and the commercial fishery landed 2.20 million pounds compared to the quota of 7.24 million pounds (a 5.04 million pounds underage). Combined landings for the recreational and commercial fisheries in 2018 (5.84 million pounds) resulted in an underage of 12.98 million pounds when compared to the TAL



(18.82 million pounds). As of July 10, 2019, 1.05 million pounds of bluefish had been landed by the commercial fishery; this represents ~14 percent of the 2019 commercial quota (7.71 million pounds).

Figure 1. Atlantic bluefish commercial landings for 2019 fishing year to date (through July 17, 2019). http://www.nero.noaa.gov/ro/fso/reports/reports_frame.htm.

Table 1. Summary of bluefish management measures, 2000 – 2019 (Values are in million pounds).

Management Measures	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019[8]
TAC[1]/ **ABC**[2]	34.22	29.15	32.03	31.89	34.08	34.38	31.74	**32.04**	**27.47**	**24.43**	**21.54**	**19.45**	**20.64**	**21.81**	**21.81**
TAL[3]	30.85	24.8	27.76	28.16	29.36	29.26	27.29	28.27	23.86	21.08	18.19	16.46	18.19	18.82	19.33
Comm. Quota[4]	10.5	8.08	8.69	7.71	9.83	10.21	9.38	10.32	9.08	7.46	5.24	4.88	8.54	7.24	7.71
Comm. Landings[5]	7.04	6.98	7.51	6.12	7.1	7.55	5.61	4.66	4.12	4.77	4.02	4.1	3.64	2.20	
Rec. Harvest Limit[4]	20.35	16.72	19.07	20.45	19.53	18.63	17.81	17.46	14.07	13.62	12.95	11.58	9.65	11.58	11.62
Rec. Landings[6]	19.86	16.65	21.76	19.79	14.47	16.34	11.5	11.84	16.46	10.46	11.67	9.54	9.52	3.64	
Rec. Possession Limit (# fish)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Total Landings	26.9	23.63	29.27	25.91	21.57	23.89	17.11	16.5	20.58	15.23	15.69	13.64	13.16	5.84	
Overage/Underage	-3.95	-1.17	1.51	-2.25	-7.79	-5.37	-10.18	-11.77	-3.28	-5.85	-2.5	-2.82	-5.03	-12.98	
Total Catch[7]	31.55	28.08	35.12	31.83	25.10	27.93	20.39	19.26	24.06	17.96	18.65	16.09	15.65	6.96	
Overage/ Underage	-2.67	-1.07	3.09	-0.06	-8.98	-6.45	-11.35	-12.78	-3.41	-6.47	-2.89	-3.36	-4.99	-14.85	

[1] Through 2011. [2] 2012 fwd. [3] Not adjusted for RSA. [4] Adjusted downward for RSA. [5] Dealer and South Atlantic Canvas data used to generate values from 2000-2011; Dealer data used to generate values from 2012-2018. [6] MRIP. [7] Recreational discards were calculated assuming MRIP mean weight of fish landed or harvested. [8] Values for 2020 and 2021 will be presented using the FCAL (new re-calibrated) MRIP numbers. Years 2005-2015 are presented with the BASE (old) MRIP numbers.

Landings History

Bluefish catches were estimated via the Marine Recreational Fisheries Statistic Survey (MRFSS) starting in 1981 thought 2003. Recreational data for years 2004 and later are available from the Marine Recreational Information Program (MRIP), the data collection that followed MRFSS.

From the early 1980s to the early 1990s, recreational landings declined about 70% (avg. 1981-1983 = 89.14 million pounds; avg. 1991-1993 = 25.85 million pounds). Recreational landings continued to decline at a somewhat slower rate until reaching a low level of 8.25 million pounds in 1999, but since have grown to a peak of 21.70 million pounds in 2007. Now, recreational landings are at an all-time low of 3.6 million pounds for 2018.

Commercial landings have been relatively stable throughout recent history, yet a notable decrease occurred from 2017-2018 (Figure 2). Commercial discards are insignificant and are not estimated in the current assessment.

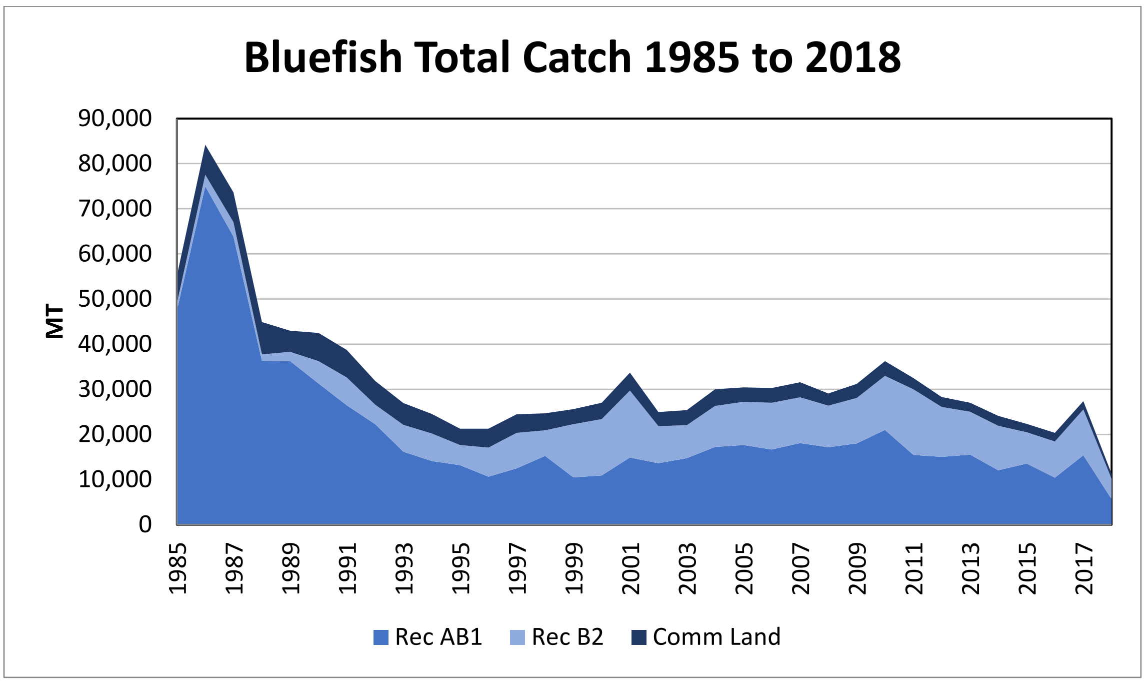


Figure 2. Bluefish catch (landings [AB1] and discards [B2]), 1985-2018. (Source: Anthony Wood, Personal Communication 2019)

Recreational Fishery

Recreational fishery data is presented as estimated from MRIP using both the new re-calibrated (BASE or new) and old (FCAL or old) data. Trends in recreational trips associated with targeting or harvesting bluefish from 1991 to 2018 are provided in Table 2. The lowest annual estimate of bluefish trips was 1.64 million and 5.75 million trips in 2017 and 2018, respectively using BASE and FCAL estimates. The highest annual estimate of bluefish trips in this timeframe was 5.95 million and 13.90 million trips in 1991 respectively using BASE and FCAL estimates. For the last 5 years (2014-2018), the number of bluefish trips have ranged from 1.64 million trips in

2017 to 2.17 million trips in 2017 using only the BASE MRIP data. Base estimates for number of trips for 2018 was unavailable. For the last 5 years (2014-2018), the number of bluefish trips have ranged from 5.75 million trips in 2018 to 9.62 million trips in 2014 using only the FCAL MRIP data.

Table 2. Number of bluefish recreational fishing trips, recreational harvest, and recreational landings per trip from 1991 to 2018.

Year	# of bluefish trips[a]	Base Recreational Harvest (N)	Base Recreational Harvest (lbs)	Recreational landings per "bluefish" trip	# of bluefish trips[a]	FCAL Recreational Harvest (N)	FCAL Recreational Harvest (lbs)	Recreational landings per "bluefish" trip
	Base MRIP Estimates				Re-Calibrated MRIP Estimates			
1991	5,948,808	11,942,608	32,997,411	2.0	13,896,933	27,317,926	59,792,834	2.0
1992	4,549,536	7,157,754	24,275,171	1.6	11,409,027	20,180,578	41,217,703	1.8
1993	4,269,162	5,725,355	20,292,072	1.3	11,826,365	15,369,463	37,415,750	1.3
1994	3,587,131	5,767,953	15,540,854	1.6	9,721,530	13,063,628	30,145,680	1.3
1995	3,608,325	5,167,979	14,306,582	1.4	9,968,256	11,532,807	27,710,092	1.2
1996	2,820,059	4,205,103	11,745,938	1.5	7,876,695	11,126,333	23,207,235	1.4
1997	2,384,133	5,413,036	14,301,761	2.3	6,383,072	12,400,982	27,039,375	1.9
1998	2,180,471	4,202,111	12,334,000	1.9	7,638,343	13,397,302	32,880,412	1.8
1999	1,727,175	3,681,841	8,253,113	2.1	7,840,089	16,878,789	25,106,100	2.2
2000	2,041,450	4,897,008	10,605,827	2.4	6,449,833	12,879,485	23,357,120	2.0
2001	2,661,032	6,663,237	13,229,770	2.5	8,161,746	18,048,645	31,654,978	2.2
2002	2,324,253	5,300,189	11,371,485	2.3	8,381,422	17,607,380	30,654,388	2.1
2003	2,647,840	6,045,062	13,135,895	2.3	7,769,721	16,411,932	32,758,670	2.1
2004	2,901,956	7,250,407	17,316,476	2.5	8,894,616	18,631,904	37,133,463	2.1
2005	3,240,410	7,949,179	19,862,847	2.5	9,024,550	18,341,452	37,742,807	2.0
2006	2,800,204	7,035,179	16,653,456	2.5	8,255,002	19,397,272	36,081,958	2.3
2007	3,620,374	8,373,899	21,760,882	2.3	9,655,930	19,189,747	40,239,101	2.0
2008	3,024,787	6,664,150	19,793,321	2.2	8,044,324	14,845,435	36,166,834	1.8
2009	2,088,857	5,194,242	14,472,305	2.5	7,972,341	18,085,386	40,731,438	2.3
2010	2,468,273	6,090,830	16,339,283	2.5	9,773,363	21,929,517	46,302,792	2.2
2011	2,128,166	5,061,391	11,497,371	2.4	8,492,874	20,814,884	34,218,748	2.5
2012	2,394,988	5,523,282	11,842,303	2.3	9,655,507	18,578,838	32,530,917	1.9
2013	1,811,087	5,743,970	16,464,369	3.2	6,394,975	19,975,051	34,398,327	3.1
2014	2,401,822	5,875,773	10,455,687	2.4	9,615,976	21,510,651	27,044,276	2.2
2015	1,710,020	3,996,803	11,673,242	2.3	7,001,696	13,725,106	30,098,649	2.0
2016	2,166,975	4,301,220	9,537,923	2.0	8,625,069	14,899,723	24,155,304	1.7
2017	1,638,890	3,013,668	9,519,745	1.8	8,264,782	13,842,164	32,023,497	1.7
2018	N/A	2,777,026	3,639,697	N/A	5,749,291	10,245,710	13,270,862	1.8

[a] 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: MRFSS (1991-2003)/MRIP (2004 forward).

Recreational Landings by State

Recreational catch and harvest by state for 2018 are provided in Table 3. The greatest overall catches (includes discards) presented as BASE MRIP and FCAL, respectively occurred in North Carolina with 11.22 and 3.00 million fish, Florida with 1.27 and 5.21 million fish, and New Jersey with 1.10 and 3.93 million fish.

The greatest harvest of bluefish by weight in 2018 presented as BASE MRIP and FCAL, respectively occurred in North Carolina with 767,364 and 2.63 million pounds, followed by Florida with 741,516 and 4.53 million pounds, and New Jersey with 613,605 and 2.01 million pounds. According to MRIP, 0 bluefish were caught in Maine and New Hampshire. Average weights, based on dividing MRIP landings in weight by landings in number for each state, suggest that bluefish size tends to increase toward the north along the Atlantic coast (outside of Florida).

Table 3. MRIP estimates of 2018 recreational harvest and total catch for bluefish.

State	Harvest			Catch	Harvest			Catch
	Pounds	Number	Average wt (lbs)	Number	Pounds	Number	Average wt (lbs)	Number
	Base MRIP (Old) Estimates				FCAL MRIP (New) Estimates			
ME	0	0	0.00	0	0	0	0.00	0
NH	0	0	0.00	0	0	0	0.00	0
MA	328,240	82,982	3.96	288,293	611,557	182,424	3.35	714,225
RI	119,961	38,158	3.14	105,594	210,033	119,801	1.75	271,594
CT	238,815	132,813	0.58	413,022	340,666	312,022	1.09	817,150
NY	425,036	413,365	1.03	1,123,132	1,399,517	1,203,567	1.16	3,905,614
NJ	613,605	424,754	1.44	1,106,422	2,007,110	1,421,477	1.41	3,933,439
DE	238,815	132,813	0.58	413,022	315,105	75,703	4.16	611,903
MD	152,459	102,984	1.48	253,625	493,192	274,834	1.79	692,643
VA	70,549	109,142	0.65	234,656	264,534	443,112	0.60	870,958
NC	767,364	943,297	0.81	2,995,238	2,630,685	3,304,587	0.80	11,216,797
SC	93,814	146,362	0.64	415,794	403,141	765,113	0.53	2,295,592
GA	10,551	13,198	0.80	55,769	70,284	90,991	0.77	386,195
FL	741,516	345,036	2.15	1,270,688	4,525,038	2,052,080	2.21	5,212,593
Total	3,639,697	2,777,026	1.31	8,465,496	13,270,862	10,245,711	1.30	30,928,703

Recreational Landings by Mode

Figure 3 reflects re-calibrated MRIP-based estimates of landings by mode (1991 through 2018) and indicates that the recent primary landing modes for bluefish are private boats and shore mode. In 2018, 11% (BASE) and 74% (FCAL) of the landings of bluefish on a coastwide basis came from shore, followed by 36% (BASE) and 23% (FCAL) private/rental and 53% (BASE) and 3% (FCAL) for-hire. Over the last five years (2014-2018), 32% (BASE) and 54% (FCAL) of the total bluefish landings came from shore, 46% (BASE) and 39% (FCAL) from private/rental boats, and 22% (BASE) and 7% (FCAL) from for-hire boats.

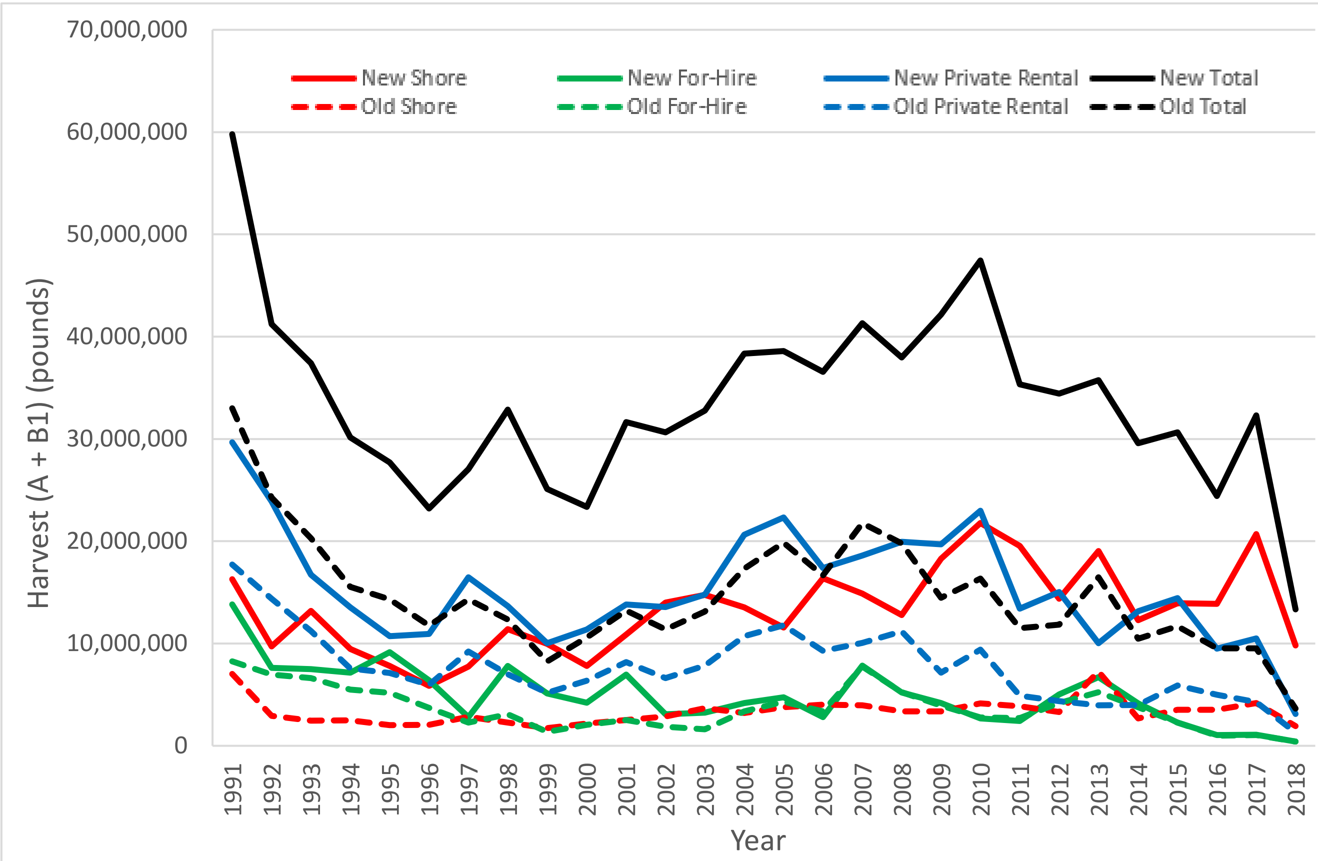


Figure 3. Bluefish harvest (pounds) by recreational fishermen by mode, Atlantic Coast, 1991-2018. Old MRIP data is back calculated.

Recreational Landings by Area

MRIP classifies catch into three fishing areas, inland, nearshore ocean (< 3 mi), and offshore ocean (> 3 mi). In 2018, about 37% (BASE) and 27% (FCAL) of the landings of bluefish on a coastwide basis came from inland waters, followed by nearshore ocean at 56% (BASE) and 67% (FCAL) (Figure 4), and offshore waters at 8% (BASE) and 6% (FCAL). Over the last five years (2014-2018), 52% (BASE) 45% (FCAL) and of the total bluefish landings came from inland waters, 38% (BASE) and 50% (FCAL) from nearshore ocean, and 10% (BASE) and 5% (FCAL) from offshore ocean.

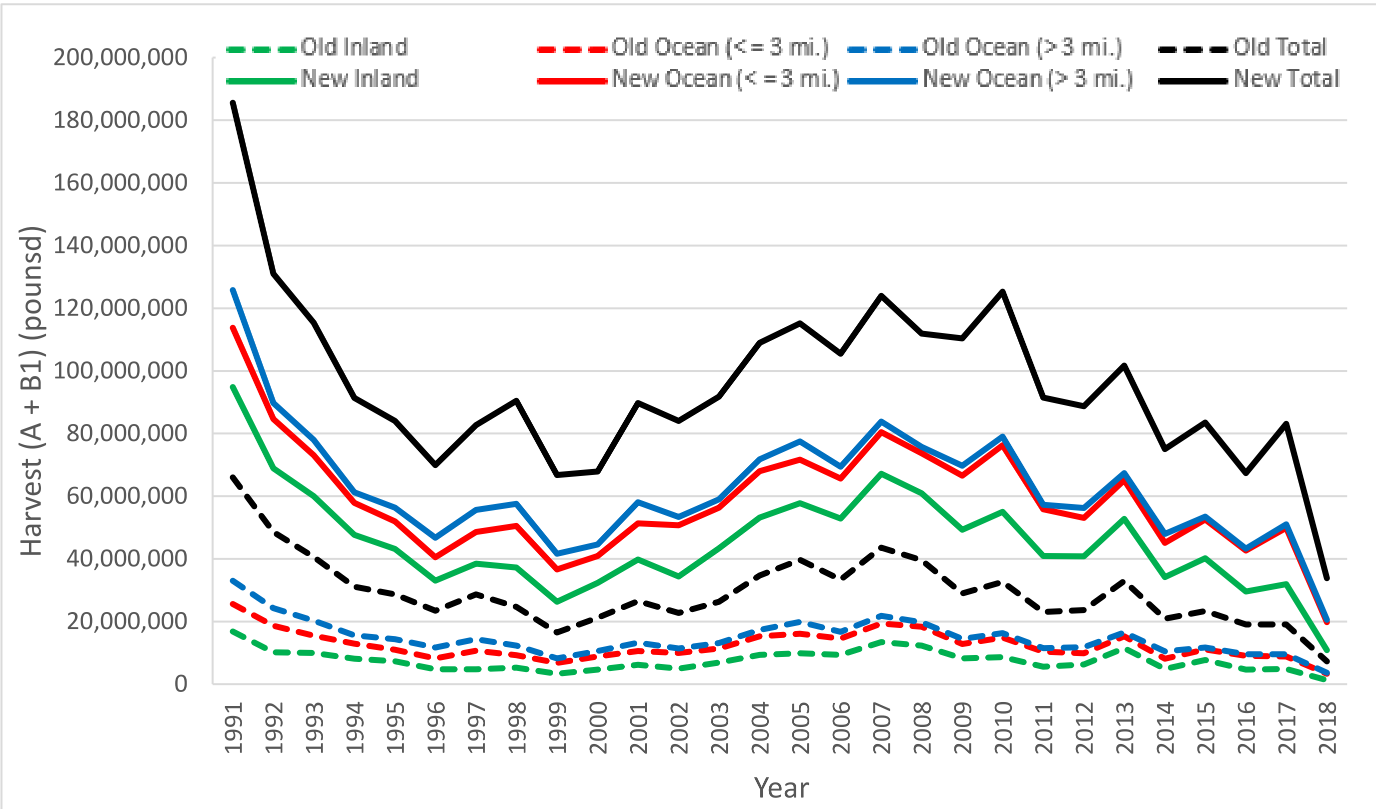


Figure 4. Bluefish harvest (pounds) by recreational catch by area, Atlantic Coast, 1991-2018. Old MRIP data is back calculated.

Recreational Discards

In the recreational fishery, bluefish released alive (B2) are estimated by MRIP. To calculate discards, a 15% mortality rate is applied to the B2 value and then multiplies by the MRIP estimated average weight. In 2017, discards were 1.03 million lbs and 5.52 million lbs for BASE and FCAL, respectively. In 2018, FCAL discards were 4.03 million lbs (Figure 5).

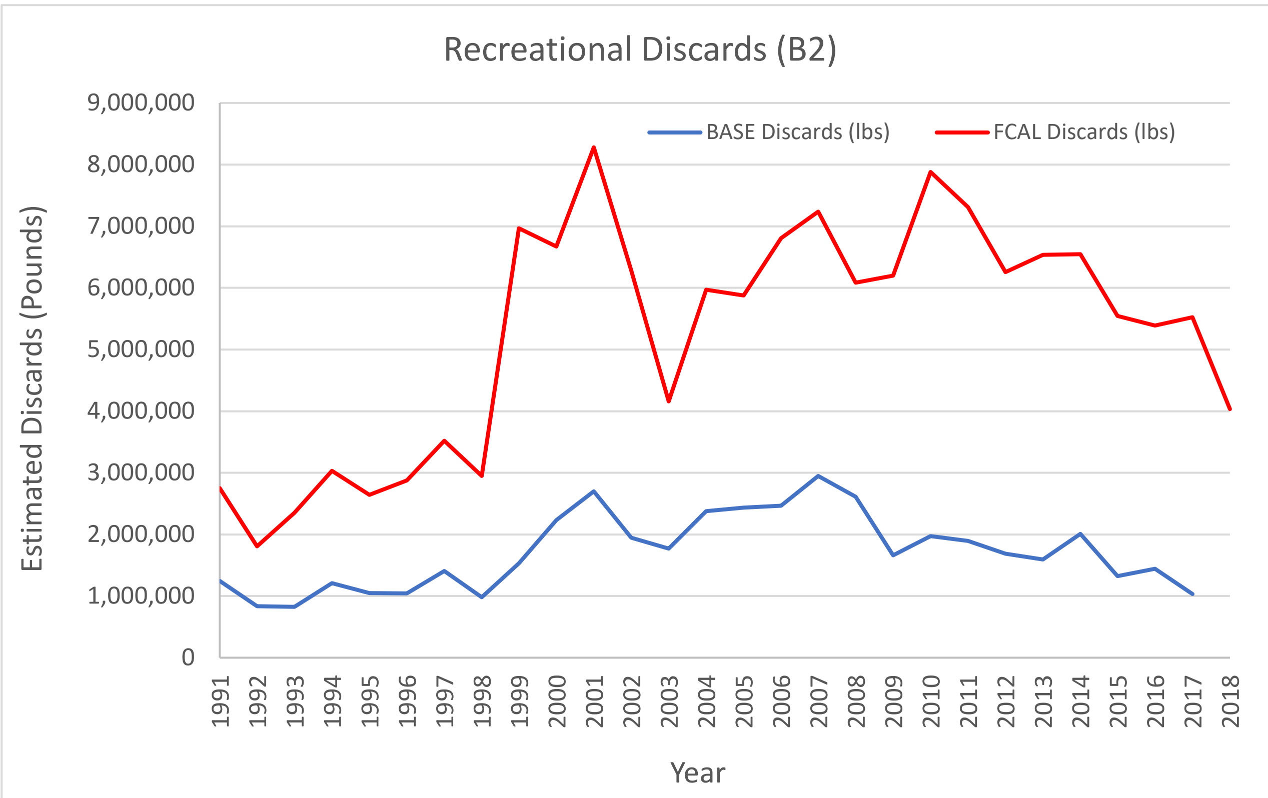


Figure 5. Bluefish MRIP estimated BASE and FCAL discards for 1991-2018. Released alive fish are assumed to have 15% chance of mortality, which is applied to the B2 values.

Commercial Fishery

Vessel and Dealer Activity

Federal permit data indicate that 2439 commercial bluefish permits were issued in 2018.[1] A subset of federally permitted vessels was active in 2018 with dealer reports identifying 476 vessels with commercial bluefish permits that actually landed bluefish. Of the 407 federally permitted bluefish dealers in 2018, there were 149 dealers who actually bought bluefish.

Landings by Gear

Dealer data for 2018 indicate that the majority of the bluefish landings were taken by gillnet (50%), followed by unknown gear (26%), otter trawl/bottom fish (9%), other (9%) and handline (6%).

Landings by Area

VTR data were used to identify all NMFS statistical areas that accounted for 5 percent or more of the Atlantic bluefish catch or areas which individually accounted for 5 percent or greater of the trips which caught bluefish in 2018 (Table 4). Seven statistical areas accounted for approximately 82% of the VTR-reported catch in 2018. Statistical area 539 was responsible for the highest percentage of the catch, with statistical area 611 having the majority of trips that caught bluefish (Table 4). A map of the statistical areas that accounted for a percentage of the Atlantic bluefish catch is shown in Figure 6.

Table 4. Statistical areas that accounted for at least 5 percent of the total Atlantic bluefish catch or 5 percent or greater of the trips which caught bluefish in 2018, with associated number of trips.

Statistical area	Pounds of bluefish caught	Percent of 2018 commercial bluefish catch	Number of trips	Percent of 2018 commercial bluefish trips that caught bluefish
539	142,122	24%	812	20%
632	95,034	16%	18	<1%
611	71,981	12%	1307	32%
613	68,397	12%	548	13%
636	34,838	6%	37	1%
616	33,657	6%	152	4%
612	32,521	6%	281	7%

[1] In addition, there were 834 party/charter bluefish permit issued in 2018. A subset of federally permitted party/charter vessels was active in 2018 with VTR reports identifying 270 vessels with party/charter bluefish permits that actually landed bluefish.

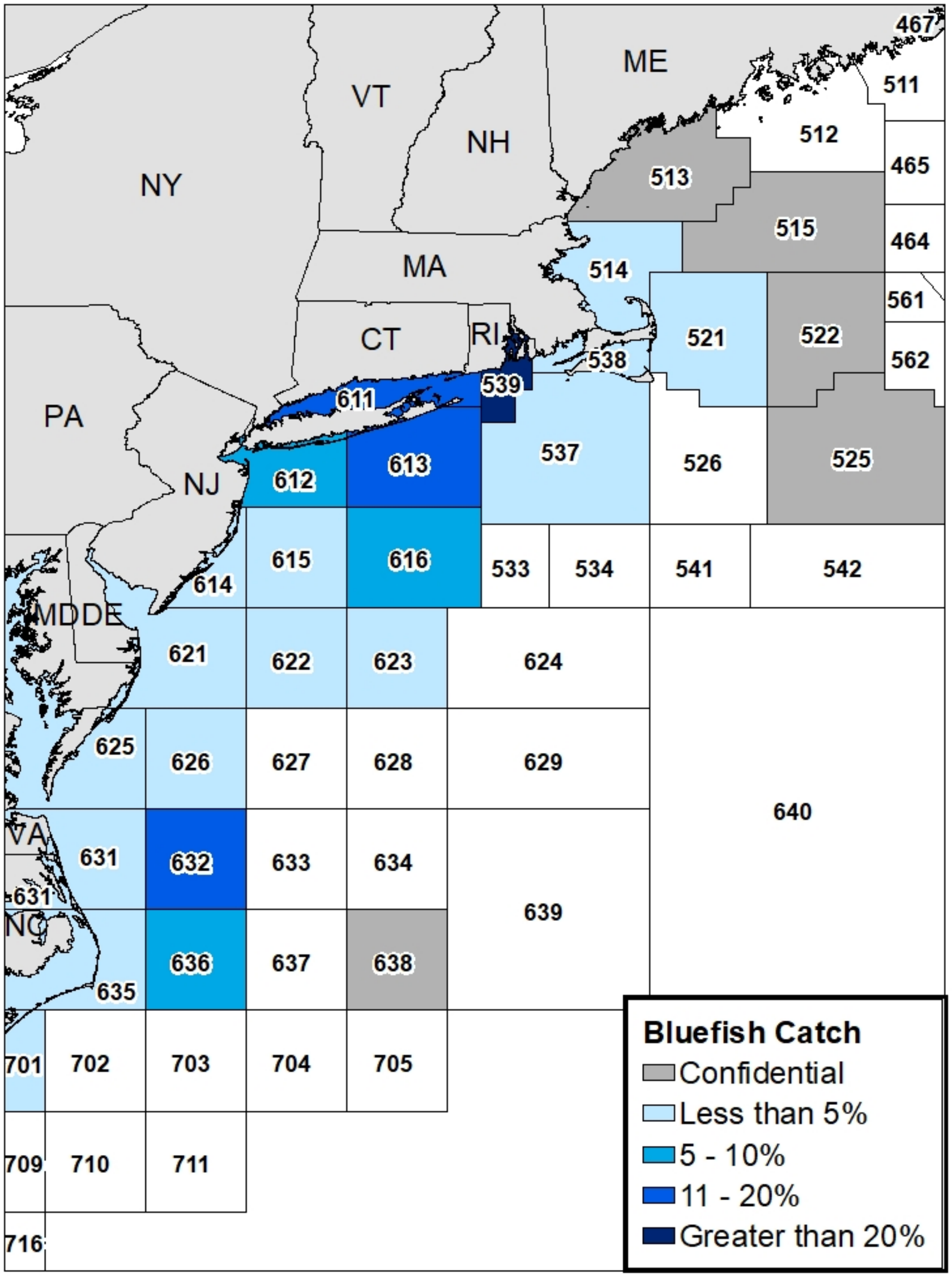


Figure 6. NMFS Statistical Areas, highlighting those that each accounted for a percentage of the commercial bluefish catch in 2018.

The top commercial landings ports for bluefish in 2018 are shown in Table 5. Six ports qualified as "top bluefish ports," i.e., those ports where 100,000 pounds or more of bluefish were landed. Wanchese, NC was the most active commercial bluefish port with almost 300,000 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/.

Table 5. Top ports of bluefish landings (in pounds), based on NMFS 2018 dealer data.

Port[a]	Pounds	% of total commercial bluefish landings	# vessels
Wanchese, NC	293,089	13%	28
Hatteras, NC	243,543	11%	12
Point Judith, RI	189,249	9%	102
Montauk, NY	188,152	9%	87
Brevard, FL (other)	128,674	6%	3

[a] Since this table includes only the “top ports” (ports where landings of bluefish were > 100,000 pounds), it does not include all landings for the year.

Revenue

According to dealer data, commercial vessels landed about 2.20 million pounds of bluefish valued at approximately $2.08 million in 2018. Average coastwide ex-vessel price of bluefish was $0.94 per pound in 2018, a ~3% increase from the previous year (2017 price = $0.73 per pound). The relative value of bluefish is very low among commercially landed species, less than 1% of the total value, respectively of all finfish and shellfish landed along the U.S. Atlantic coast in 2018. A time series of bluefish revenue and price is provided in Figure 7.

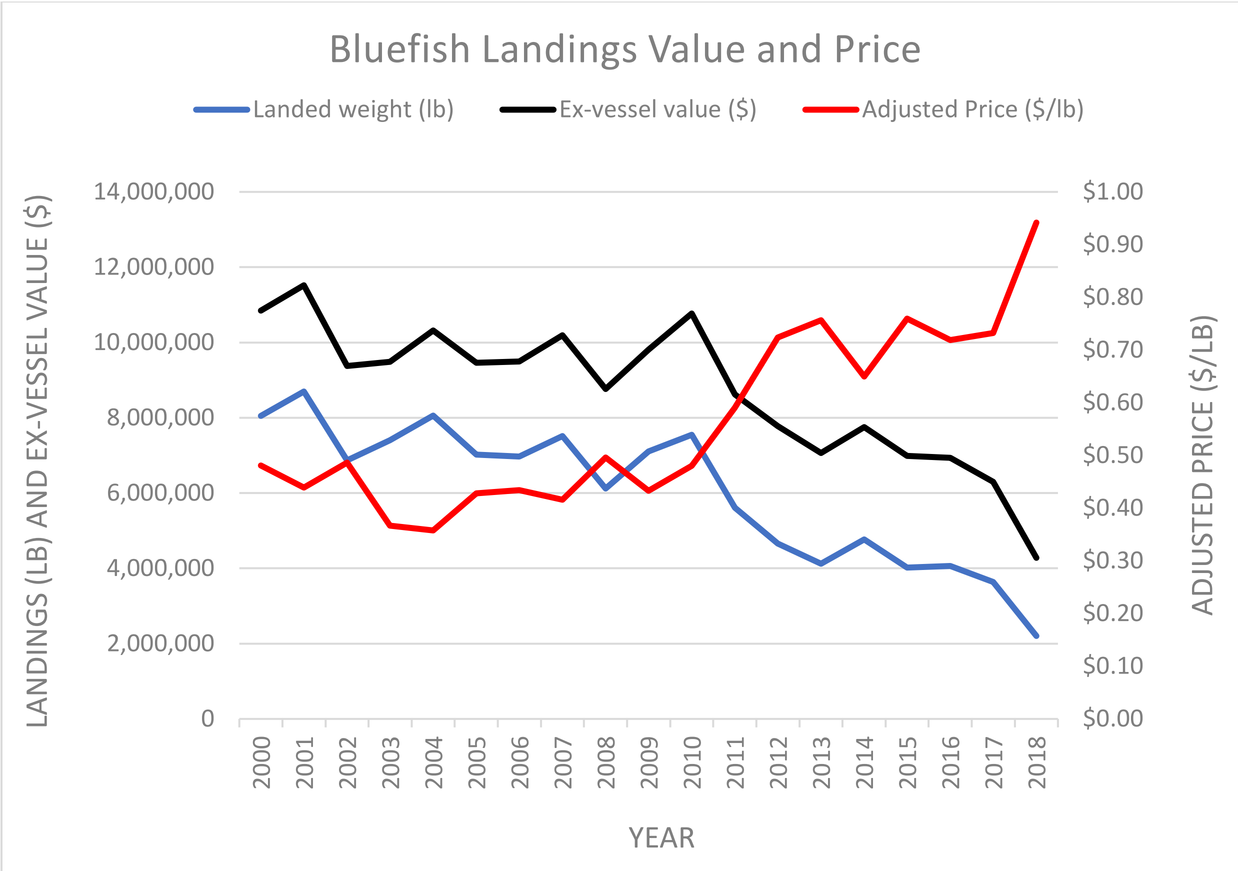


Figure 7. Landings, ex-vessel value, and price (adjusted to 2018 real dollars) for bluefish, 2000-2018.

<u>Bycatch</u>

The commercial fishery for bluefish 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 that also catch bluefish. 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.

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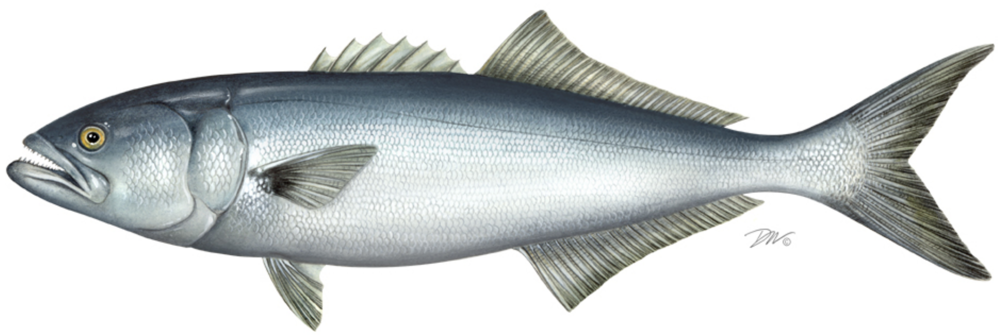
2019 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR

BLUEFISH
(*Pomatomus saltatrix*)

2018 FISHING YEAR



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DRAFT DOCUMENT FOR BOARD REVIEW

Executive Summary

Bluefish from Maine through Florida are jointly managed by the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission under Amendment 1 and Addendum I to the interstate Fishery Management Plan.

A benchmark stock assessment was peer reviewed by the 60th Stock Assessment Review Committee in June 2015. The benchmark assessment was approved by the Management Board and Council for management use. The benchmark assessment concluded that the U.S. bluefish population is not overfished and overfishing is not occurring relative to the new biological reference points defined in the assessment. In August 2019 an updated assessment of bluefish (with data through 2018, including calibrated MRIP estimates) was reviewed. Preliminary results from that review suggest the bluefish stock was overfished and overfishing was not occurring in 2018 relative to the updated biological reference points.

2018 recreational bluefish harvest was estimated at 17.6 million fish weighing 13.47 million pounds (Table 1). Recreational dead discards were estimated at 3.10 million fish. 2018 commercial bluefish landings were estimated at 2.44 million pounds. Each sector harvested under its respective harvest limit and quota. Total removals in 2018 are the lowest in the 1985-2018 time series.

In 2018, all states implemented management programs consistent with the intent of Amendment 1 and Addendum I to the ISFMP. Maine, South Carolina and Georgia requested *de minimis* status for 2019. Maine, South Carolina, and Georgia all qualify for *de minimis* status because their commercial landings in 2018 were less than 0.1% of the coastwide commercial landings estimate.

Table of Contents

2019 REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN FOR BLUEFISH *(Pomatomus saltatrix)*

I. Status of the Fishery Management Plan

Date of FMP Approval:	1989
Amendments:	Amendment 1 (1998); Addendum I (2012)
Management Unit:	Migratory stocks of bluefish in U.S. state and federal waters of the western North Atlantic
States with Declared Interest:	Maine through Florida, excluding Pennsylvania and the District of Columbia
Active Committees:	ASMFC: Bluefish Management Board, Technical Committee, Advisory Panel, Plan Review Team, and Stock Assessment Subcommittee MAFMC: Demersal and Coastal Migratory Species Committee, Monitoring Committee, Advisory Panel, and Scientific and Statistical Committee

The Fishery Management Plan (FMP) for bluefish was adopted by the Atlantic States Marine Fisheries Commission (ASMFC or Commission) and the Mid-Atlantic Fishery Management Council (MAFMC) in October 1989. It was the first FMP developed jointly by an interstate commission and a federal fishery management council.

Bluefish is currently managed under Amendment 1 to the FMP approved in October 1998 and implemented in 2000. The goal of the Amendment is to conserve the bluefish resource along the Atlantic coast, specifically to:

1. Increase understanding of the stock and fishery
2. Provide highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish
3. Provide for cooperation among the coastal states, the various regional marine fishery management councils, and federal agencies involved along the coast to enhance the management of bluefish throughout its range
4. Promote compatible management regulations between State and Federal jurisdictions
5. Prevent recruitment overfishing
6. Reduce the waste in both the commercial and recreational fisheries.

States and jurisdictions with a declared interest in the bluefish FMP include all ASMFC member states and jurisdictions, with the exception of Pennsylvania and the District of Columbia. Management issues are addressed jointly through the ASMFC Bluefish Management Board (Board) and the MAFMC Demersal and Coastal Migratory Species Committee (Council). The MAFMC's Bluefish Technical Monitoring Committee (MC) conducts annual plan monitoring, which is reviewed jointly by the Council's and Board's Bluefish Advisory Panels (AP), and all committee recommendations are then provided to the Board and Council for review. A working group comprised of members from the Commission's Bluefish Stock Assessment Subcommittee (SAS), the Commission's Bluefish Technical Committee (TC), and the MC addresses stock assessment matters. The Board may implement changes to the FMP in state waters through the adaptive management process. The TC, Plan Review Team (PRT), Plan Development Team (PDT), and AP provide technical and industry advice to the Board throughout the adaptive management process.

In February 2012, the Board approved Addendum I to Amendment 1 to the Bluefish FMP. The Addendum establishes a coastwide biological monitoring program to improve the quantity and quality of information available for use in bluefish stock assessments. A summary of these findings from the most recent year are found in Section V.

Annual Fishery Specifications

Commercial and recreational bluefish harvests are managed via sector-specific landings limits (i.e., a coastwide commercial fishery quota and a recreational harvest limit, or RHL). The Council's Scientific and Statistical Committee (SSC) and Bluefish MC annually review the best available information and make fishery specification recommendations to the Council and Board for the subsequent fishing year. Recommendations include commercial quota, RHL, research set-aside (RSA), and other management measures such as minimum size limits and bag limits. The Council and Board meet jointly (typically in August) to consider the SSC's and MC's fishery specification recommendations and formalize commercial and recreational catch limits, and other management measures.

Annual fishery specification recommendations are typically developed as follows: final commercial quota and RHL recommendations are derived from an annual catch limit (ACL), which the FMP defines as equal to the allowable biological catch (ABC), and is in turn equal to or less than an overfishing limit (OFL). After accounting for management uncertainty, 17% of the ACL is allocated to the commercial sector and 83% to the recreational sector; these are the commercial and recreational annual catch targets (ACTs). Discard estimates are deducted from ACTs to derive commercial and recreational total allowable landings (TALs). If the recreational fishery is not projected to land its TAL (by comparison of the recreational landings estimate from the previous year), then quota may be transferred from the recreational to the commercial sector, not to exceed a commercial quota of 10.5 million pounds (the average commercial landings during the period 1990-1997). The final commercial quota is then allocated to the states of Maine through Florida based on average commercial landings during 1981-1989. The state-specific shares are detailed in Table 5.

II. Status of the Stock

The 2019 operational assessment[1]using the recalibrated MRIP estimates for recreational metrics is currently in the process of peer review. It is anticipated that the assessment will be approved by the Board and Council for management use at the joint meeting in October 2019. Preliminary results from this review suggest the Bluefish stock is overfished and overfishing was not occurring. In the interim, the 2015 benchmark stock assessment for bluefish will be referenced in this FMP review.

The 2015 benchmark stock assessment for bluefish was peer reviewed at the 60th SAW/SARC and was approved by the Board and Council for management use. The biological reference points from SARC 41 were based on maximum sustainable yield (MSY). MSY reference points require a reliable stock-recruitment relationship and the 2015 SAS determined that this relationship is poorly defined for bluefish. Therefore, for SAW 60, spawning potential ratio (SPR) reference points were used as a proxy for MSY reference points. $F_{40\%SPR}$ was selected at SAW 60 as the F_{MSY} proxy for the overfishing threshold. This threshold was modified by the SSC to $F_{35\%SPR}$, noting that $F_{40\%SPR}$ might be inappropriate for bluefish, a highly productive species. The biomass target (SSB_{MSY} proxy) was established by projecting the population forward until an equilibrium spawning stock biomass was reached (NEFSC 2015).

The results of the 2015 benchmark assessment indicate that bluefish are not overfished and overfishing is not occurring. Spawning stock biomass (SSB) in 2014 was estimated at 191 million pounds which is below the SSB target (223 million pounds) but above the SSB threshold (112 million pounds). Although variable across the time series, recruitment (age-0 fish) has increased from 16.74 million fish in 2012 to 29.61 million fish in 2014. Fishing mortality (F) in 2014 was estimated to be 0.16 which is below the F threshold ($F_{35\%SPR}$=0.19).

III. Status of the Fishery

From 1985-2018, recreational catch (harvest plus fish caught and released) of bluefish in U.S. waters of the Atlantic coast averaged 44.96 million fish annually (Table 1 and Figure 1). In 2018, recreational catch was estimated at 38.3 million fish which is a 27% decrease relative to 2017. In 2018, recreational anglers harvested an estimated 17.6 million fish weighing 13.47 million pounds (6,111 metric tons). This represents a decrease relative to 2017 harvest in terms of number of fish (26%) and an even larger decrease by weight (59%), indicating that bluefish harvested recreationally in 2018 were considerably smaller than those harvested in 2017. The majority of the recreational harvest (number of fish) came from North Carolina (32%), Florida (20%), New Jersey (14%) and New York (12%). In 2018, recreational dead discards (15% of B2) were estimated at 3.10 million fish (Table 1).

[1] An operational assessment uses an existing model with limited changes, but adds new data to existing data sources. These assessments provide stock status, and involve an integrated peer review with select fishery council science committee members. This type of assessment is intermediate between an update assessment and a benchmark assessment (Source: https://www.nefsc.noaa.gov/groundfish/operational-assessments-2017/).

From 1985-1999, annual commercial landings of bluefish in U.S. waters of the Atlantic coast averaged 11.61 million pounds (5,268 metric tons). After the implementation of the Amendment 1 quota system, from 2000-2018 commercial landings of bluefish have averaged 6.11 million pounds (2,773 metric tons) annually (Figure 2). In 2018, commercial landings were estimated at 2.44 million pounds (1,107 metric tons), a decrease of 41% relative to 2017 landings and a 68% underage of the 2018 commercial quota (7.71 million pounds). The majority of commercial landings came from North Carolina (38%), New York (22%), and Florida (13%). Commercial dead discards are considered negligible.

V. Status of Research and Monitoring

Many states, the National Marine Fisheries Service (NMFS), the Northeast Area Monitoring and Assessment Program (NEAMAP), and the Southeast Area Monitoring and Assessment Program (SEAMAP) conduct fishery-independent surveys. New Hampshire, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and South Carolina (SEAMAP) provide indices of juvenile bluefish abundance for stock assessment, and Connecticut, New Jersey, Virginia (NEAMAP), and North Carolina provide indices of adult abundance. Year class strength is monitored through a number of fishery-independent surveys (NEFSC 2015). Although not included in the 2015 benchmark assessment (NEFSC 2015), Massachusetts, Delaware, Georgia and Florida also maintain indices of abundance from surveys that encounter bluefish. Refer to Table 3 for status of monitoring efforts by state in 2018.

Commercial landings information is collected by most states from dealer or fisherman reporting programs, which is provided to the Atlantic Coastal Cooperative Statistics Program's (ACCSP) Standard Atlantic Fisheries Information System (SAFIS). Fishermen fishing in federal waters are required to report their landings to NMFS. North Carolina and Virginia are the only states that significantly sample bluefish commercial fisheries for size and age composition of the catch. Recreational catch and harvest is monitored by the Marine Recreational Information Program (MRIP).

Addendum I to Amendment 1 (2012) implemented a biological monitoring program to enhance age and length data used in bluefish stock assessments. Under Addendum I, states that accounted for more than 5% of total coastwide bluefish harvest (recreational and commercial combined) for the 1998-2008 period are required to collect a minimum of 100 bluefish ages (50 from January through June, 50 from July through December). Those states are Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Virginia, and North Carolina. Age samples are primarily collected from fishery-dependent sources (e.g., party/charter boats, fishing tournaments and volunteer anglers), although samples collected from fishery-independent sources are sometimes utilized as needed to fulfill this requirement. In 2018, most of these states were able to collect the minimum of 100 age samples (Table 3), and all states made a good effort to collect 50 age samples from both spring and fall. Massachusetts collected just 98 samples, just under the 100 sample requirement. South Carolina also reported 100 age samples collected by personnel of the SEAMAP-SA coastal trawl survey, and 21 from the South Carolina Inshore Finfish Monitoring program.

As prescribed in the addendum, following the end of the first year of the sampling program, the TC reviewed the sampling design and evaluated the optimal geographic range and sample size for bluefish age data. The TC found the sampling program design to be satisfactory. However, additional TC reviews may be warranted as the program continues, especially in light of the difficulties expressed by some states to collect samples before July.

VI. Status of Management Measures and Issues

The Board and Council recommend adjustments to the commercial quota and RHL annually using the specification setting process detailed in Amendment 1 (Section 3.1.1.6) and in Section I of this report. The recreational fishery is allocated 83% of the ACL, and 17% is allocated to the commercial fishery. The coastwide commercial quota is allocated to the states via state-specific percentage shares based on landings from 1981-1989.

The 2018 ACL was 21.81 million pounds (9,895 metric tons); after a transfer of 3.54 million pounds from the recreational to commercial sector, the commercial quota was 7.24 million pounds (3,286 metric tons) and the RHL was 11.58 million pounds (5,253 metric tons). In 2018, neither sector exceeded their respective quota or harvest limit, therefore no federal accountability measures have been triggered for 2019. 2018 state-specific shares and landings, and initial 2019 state-specific shares are listed in Table 5.

The MAFMC and ASMFC have initiated an amendment process that will involve a comprehensive review of the Bluefish Fishery management Plan's sector-based allocations, commercial allocations to the states, transfer processes, as well as FMP goals and objectives, and any other issues highlighted by the Council and Commission through the scoping process.

VII. Current State-by-State Implementation of FMP Compliance Requirements

These states and jurisdictions are required to comply with the provisions of the Bluefish FMP: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Potomac River Fisheries Commission, Virginia, North Carolina, South Carolina, Georgia, and Florida. The following are specific FMP compliance requirements:

- Each state must restrict the possession of bluefish by recreational anglers to no more than fifteen fish per day, or have an ASMFC-approved equivalent conservation program.
- Each state must restrict its commercial fishery to the quota adopted under procedures specified in the FMP.
- These states are required to collect a minimum of 100 age samples per Addendum I to Amendment 1: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Virginia, and North Carolina.
- States must submit annual compliance reports verifying that the above listed FMP requirements have been implemented. Compliance reports should also include an overview

of permitting requirements for commercial and party/charter vessels and commercial dealers.

Based on the annual state compliance reports, the PRT determined all states and jurisdictions implemented a management program in 2018 consistent with the intent of the ISFMP for Bluefish (Amendment 1 and Addendum I). All states implemented a recreational possession limit not exceeding 15 fish per person and were able to collect all or nearly all of the 100 required biological samples. Refer to Table 3 for state monitoring and reporting requirements, Table 4 for fishery regulations by state in 2018, and Table 5 for commercial quota monitoring and harvest.

Maine, South Carolina, and Georgia requested *de minimis* status for 2018. Maine, South Carolina, and Georgia qualify for *de minimis* status because their commercial landings from the most recent year were less than 0.1% of the coastwide commercial landings estimate (Table 5).

VIII. Prioritized Research Needs

The following research recommendations were identified at the 60th SAW/SARC:

High Priority

1. Determine whether NC scale data from 1985-1995 are available for age determination; if available, re-age based on protocols outlined in ASMFC (2001); if re-aging results in changes to age assignments, quantify the effects of scale data on the assessment.
2. Develop additional adult bluefish indices of abundance (e.g., broad spatial scale longline survey or gillnet survey).
3. Expand age structure of SEAMAP index.

Moderate Priority

4. Investigate species associations with recreational angler trips targeting bluefish (on a regional and seasonal basis) to potentially modify the MRIP index used in the assessment model.
5. Explore age- and time-varying natural mortality from, for example, predator-prey relationships; quantify effects of age- and time-varying mortality on the assessment model.
6. Continue to evaluate the spatial, temporal, and sector-specific trends in bluefish growth and quantify their effects in the assessment model.
7. Continue to examine alternative models that take advantage of length-based assessment frameworks. Evaluate the source of bimodal length frequency in the catch (e.g., migration, differential growth rates – also multiple cohorts as noted by the PRT).
8. Modify thermal niche model to incorporate water temperature data more appropriate for bluefish in a timelier manner [e.g., sea surface temperature data & temperature data that cover the full range of bluefish habitat (SAB and estuaries)].

IX. Plan Review Team Comments and Recommendations

- The PRT found that all states implemented regulations consistent with the intent of Amendment 1 and Addendum I of the Bluefish Interstate FMP.
- Maine, South Carolina and Georgia requested and meet the requirements for *de minimis* status for 2018.
- The TC should periodically review the effectiveness of the Addendum I sampling design and evaluate the optimal geographic range and sample size for bluefish age data.
- The PRT notes that the MAFMC and ASMFC have initiated an amendment process that will involve a comprehensive review of the Bluefish Fishery Management Plan's sector-based allocations, commercial allocations to the states, transfer processes, as well as FMP goals and objectives, and any other issues highlighted by the Council and Commission through the scoping process.
- Preliminary results from an August 2019 operational assessment of bluefish (with data through 2018, including calibrated MRIP estimates) suggest the bluefish stock was overfished and overfishing was not occurring in 2018 relative to updated biological reference points.
- The PRT recommends that the TC look into the increased importance of recreational discards in stock assessments. Generating reliable discard length data from recreational anglers could improve the robustness of stock assessments moving forward.

X. References

Mid-Atlantic Fishery Management Council (MAFMC) and Atlantic States Marine Fisheries Commission (ASFMC). 1998. Amendment 1 to the Bluefish Fishery Management Plan.

Northeast Fisheries Science Center. 2015. 60th Northeast Regional Stock Assessment Workshop (60th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 15-07; 36 p. doi: 10.7289/V5D21VKV

Fisheries of the Northeastern United States. Atlantic Bluefish Fishery; 2015 Final Atlantic Bluefish Specifications. 50 CFR Part 648. Vol 80, No. 151. Thursday, August 6, 2015.

Fisheries of the Northeastern United States. Atlantic Bluefish Fishery; 2014 Final Atlantic Bluefish Specifications. 50 CFR Part 648. Vol 79, No. 119. Friday, June 20, 2014.

XI. Tables

Table 1. Estimated bluefish recreational harvest (A + B1), releases (B2), dead discards (DD; 15% of B2), total catch (A+B1+B2), and total removals (Harvest+DDs) in numbers of fish by marine recreational anglers, 2008 to 2018. Source: MRIP. These estimates may differ from MRIP estimates depending on query date (Data queried August 6, 2019).

Year	Total Catch (A+B1+B2)	Harvest (A+B1)	Released (B2)	DDs (15% of B2)	Total Removals (Harvest + DD)
2008	46,045,004	14,845,435	31,199,569	4,679,935	19,525,370
2009	49,866,588	18,085,386	31,781,202	4,767,180	22,852,566
2010	62,350,107	21,929,516	40,420,591	6,063,089	27,992,605
2011	58,290,652	20,814,885	37,475,767	5,621,365	26,436,250
2012	50,658,368	18,578,840	32,079,528	4,811,929	23,390,769
2013	53,494,663	19,975,050	33,519,613	5,027,942	25,002,992
2014	55,093,765	21,510,651	33,583,114	5,037,467	26,548,118
2015	42,148,962	13,725,106	28,423,856	4,263,578	17,988,684
2016	42,528,745	14,899,722	27,629,023	4,144,353	19,044,075
2017	52,258,920	23,941,161	28,317,759	4,247,664	28,188,824
2018	38,283,848	17,600,856	20,682,992	3,102,449	20,703,305
Average	**44,965,432**	**20,762,764**	**24,202,668**	**3,630,400**	**24,393,164**

Table 2. Bluefish Commercial Landings and Recreational Harvest (A + B1) by weight (metric tons, pounds), 2008-2018. Source: SAFIS and MRIP. Estimates may differ from source websites depending on query date (2018 commercial data queried August 6, 2019; recreational data queried August 6, 2019).

	Commercial		Recreational (A + B1)		Total	
Year	**MT**	**Pounds**	**MT**	**Pounds**	**MT**	**Pounds**
2008	2,734	6,027,113	16,669	36,747,825	19,403	42,774,938
2009	3,137	6,915,525	18,836	41,526,898	21,973	48,442,423
2010	3,310	7,298,147	21,280	46,914,747	24,591	54,212,894
2011	2,458	5,418,960	15,714	34,643,119	18,172	40,062,079
2012	2,220	4,893,437	14,919	32,891,473	17,139	37,784,910
2013	1,994	4,396,929	15,860	34,964,726	17,854	39,361,655
2014	2,280	5,026,123	12,631	27,846,802	14,911	32,872,925
2015	1,922	4,237,385	13,757	30,328,486	15,679	34,565,871
2016	1,930	4,253,923	11,183	24,654,287	13,113	28,908,210
2017	1,880	4,145,055	14,736	32,486,216	16,616	36,631,271
2018	1,107	2,440,289	6,111	13,473,096	7,218	15,913,385
Average	**2,270**	**5,004,808**	**14,700**	**32,407,061**	**16,970**	**37,411,869**

Table 3. Status of compliance with monitoring and reporting requirements, 2018 (Y = compliance standards met, N = compliance standards not met, NA = not applicable).

State/ Jurisdiction	Fishery-independent monitoring		Fishery-dependent monitoring		Annual Reporting Status
	Survey(s)	Status	Type(s)	Status (num. of age samples)	
ME*	NA	NA	Rec and Com harvest	NA	Y
NH	Juvenile	Y	Rec and Com harvest	NA	Y
MA	Juvenile	Y	Rec and Com harvest, Age Samples	Y (98)	Y
RI	Juvenile, Adult	Y	Rec and Com harvest, Age Samples	Y (105)	Y
CT	Juvenile, Adult	Y	Rec and Com harvest, Age Samples	Y (190)	Y
NY	Juvenile	Y	Rec and Com harvest, Age Samples	Y (155)	Y
NJ	Juvenile, Adult	Y	Rec and Com harvest, Age Samples	Y (223)	Y
DE	Juvenile, Adult	Y	Rec and Com harvest	NA	Y
MD	Juvenile	Y	Rec and Com harvest	NA	Y
PRFC	Juvenile	Y	Rec and Com harvest	NA	Y
VA	Juvenile, Adult	Y	Rec and Com harvest, Age Samples	Y (390)	Y
NC	Adult	Y	Rec and Com harvest, Age Samples	Y (732)	Y
SC*	NA	NA	Rec and Com harvest	NA	Y
GA*	NA	NA	Rec and Com harvest	NA	Y
FL	Juvenile, Adult	Y	Rec and Com harvest	NA	Y

*granted *de minimis* for 2018 fishing season

Table 4. Fishery regulations by state, 2018. Minimum size are in total length (TL) except for GA and FL are in fork length (FL).

State/ Jurisdiction	Recreational			Commercial	
	Bag Limit	**Season**	**Size Limit**	**Trip and Size Limit**	**Open Season**
ME	3 fish	All year	None	No Restrictions	All year
NH	10 fish	All year	None	No Restrictions	July 1 - Sept 30
MA	10 fish	All year	None	5,000 lbs/day or trip (whichever is longer)	All year
RI	15 fish	All year	None	12" min size; 1,000 lbs/bi-wk (1.1-4.30) 8,000 lbs/wk (5.1-11.10) 500 lbs/wk (11.11-12.31)	All year
CT	10 fish	All year	None	9" min size; 1,200 lbs/trip	All year
NY	15 fish	All year	Only 10 fish <12”	9" min size; Trip Limit: 2,000 lbs (Jan-April); 500 lbs (May-Aug); 1,000 lbs (Sept-Dec)	All year
NJ	15 fish	All year	None	9" min size	Closed to H&L from 1.1-6.15 and 8.8-12.31
DE	10 fish	All year	None	No Restrictions	All year
MD	10 fish	All year	8” min size	8” min size	All year
PRFC	10 fish	All year	8” min size	Trip limits after 80% of VA-MD quota is landed	All year
VA	10 fish	All year	None	No Restrictions	All year
NC	15 fish	All year	Only 5 fish > 24”	No Restrictions	All year
SC	15 fish	All year	None	No directed fishery	All year
GA	15 fish	All year	12" min size	12" min size; 15 fish	All Year
FL	10 fish	All year	12” min size	12” min size; 7,500 lbs/day	All year

Table 5. 2018 state-specific shares of commercial bluefish quota and estimated harvest by weight (lbs). Landings data source: SAFIS (query date: June 6, 2019). C = landings values are confidential.

State	% of Federal Quota	2018 Initial Quota*	2018 Transfers	2018 Final Quota	2018 Landings	Overages	% Quota Used	% Coastwide Total	2019 Initial Quota
ME	0.6685	48,424		48,424	29.87	0	0.1%	0.0%	51,538
NH	0.4145	30,025		30,025	C	C	C	C	31,956
MA	6.7167	486,539		486,539	195,378	0	40.2%	8.1%	517,828
RI	6.8081	493,160		493,160	237,099	0	48.1%	9.8%	524,874
CT	1.2663	91,727		91,727	53,367	0	58.2%	2.2%	97,626
NY	10.3851	752,268		752,268	537,035	0	71.4%	22.0%	800,645
NJ	14.8162	1,073,245		1,073,245	56,206	0	5.2%	2.3%	1,142,264
DE	1.8782	136,052		136,052	667	0	0.5%	0.0%	144,801
MD	3.0018	217,442		217,442	25,717	0	11.8%	1.1%	231,426
VA	11.8795	860,518		860,518	93,070	0	10.8%	3.8%	915,857
NC	32.0608	2,322,397		2,322,397	910,202	0	39.2%	37.6%	2,471,746
SC	0.0352	2,550		2,550	C	C	C	C	2,714
GA	0.0095	688		688	C	C	C	C	732
FL	10.0597	728,697		728,697	316,193	0	43.4%	13.1%	775,558
TOTAL^	**100.00**	**8,542,230**	**0**	**7,243,726**	**2,420,934**	**0**	**33%**		**7,709,565**

^ totals in table may not match listed quotas due to rounding

XII. Figures

Figure 1. Estimated recreational bluefish harvest (A + B1), releases (B2) and dead discards by recreational anglers in numbers of fish, 1985-2018. Note: Harvest and dead discards are additive. Source: MRIP. Estimates may differ from source websites depending on query date (2018 data queried August 6, 2019).

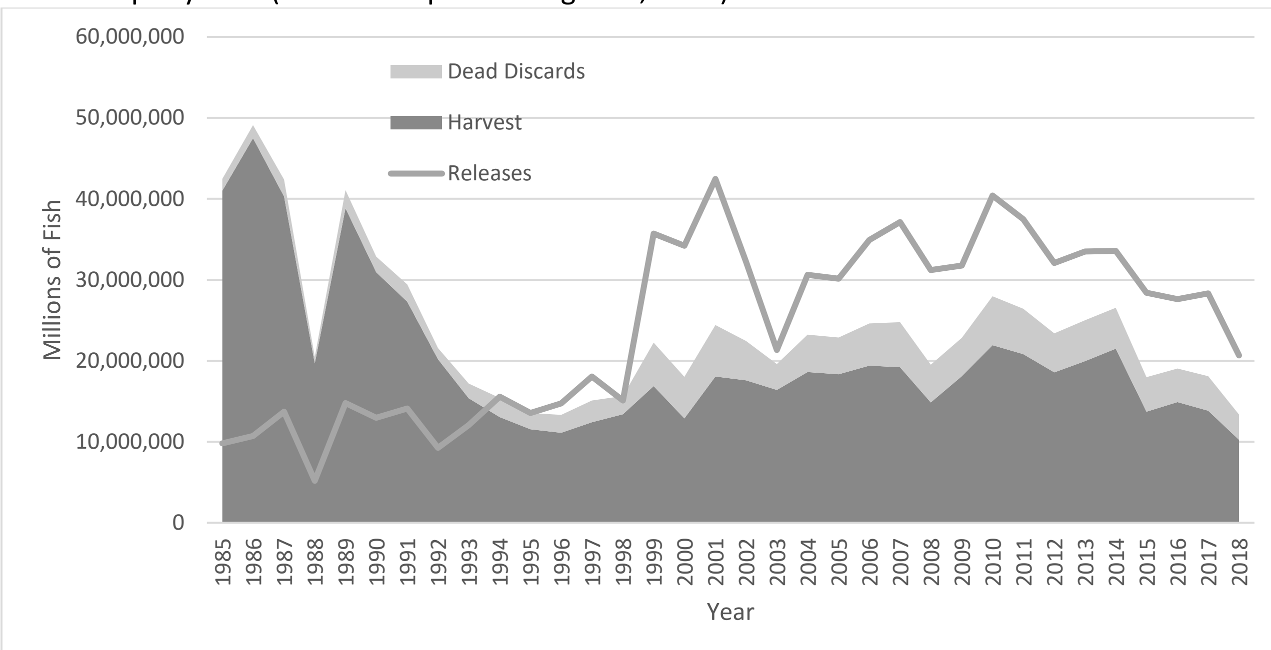
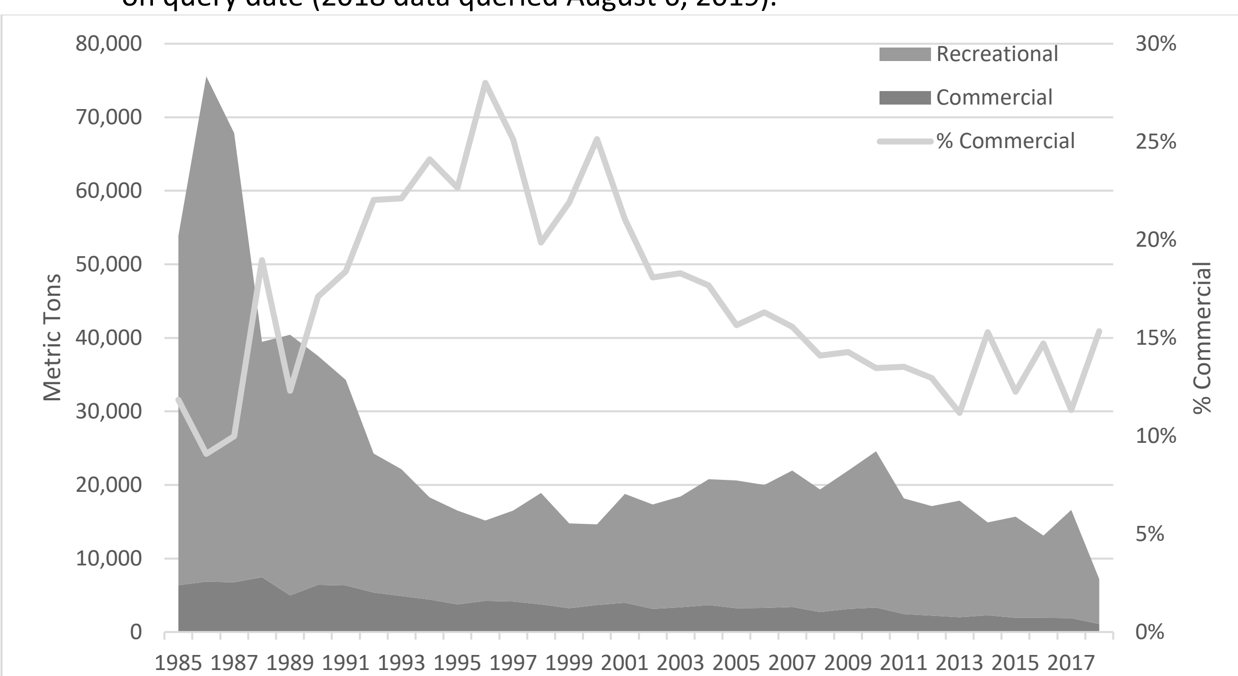


Figure 2. Bluefish recreational harvest and commercial landings estimates by weight, 1985-2018. Source: SAFIS and MRIP. Estimates may differ from source websites depending on query date (2018 data queried August 6, 2019).



Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 23, 2019

To: Dr. Chris Moore, Executive Director

From: Matthew Seeley, Staff

Subject: Update on the Bluefish Allocation Amendment

Background

The Bluefish Allocation Amendment was last discussed with the Council and Board at the August 2018 Council meeting. At the meeting, Council and Board members reviewed public scoping comments, discussed next steps, and agreed on a number of issues that should be considered in the amendment. Some members of the Council and Commission expressed concern that the revised recreational catch and effort estimates from the Marine Recreational Information Program (MRIP) could have significant implications for the status and management of the bluefish fishery. The Council and Commission considered a proposal to halt amendment development until the completion of the assessment update which incorporates the updated MRIP numbers. Although Council and Commission members were generally in agreement that the amendment should incorporate the results of the operational assessment, some felt that postponing amendment development was unnecessary. After some debate, the Council and Commission decided to continue to work on the amendment but agreed they will not finalize the public hearing document or hold public hearings until after the results of the bluefish operational assessment are available in the fall of 2019.

The results of the bluefish operational assessment indicate that the stock is overfished with overfishing not occurring. Following official Greater Atlantic Regional Fisheries Office notice of the overfished status, the Council will have to initiate a bluefish rebuilding plan within two years. Rebuilding plans are often developed through an Amendment and consideration should be given on whether rebuilding should be incorporated into the Allocation Amendment or developed through its own action.

For a current timeline of events, please reference the Bluefish Action Plan within this tab or on the Council's website: http://www.mafmc.org/actions/bluefish-allocation-amendment.

Current Status

Since the operational assessment for bluefish became available in August 2019, the fishery management action team (FMAT) met once to discuss the Council/Board approved issues that are being addressed in the Amendment. The previously agreed upon issues include:

1. FMP Goals and Objectives
2. Commercial and Recreational Allocations
3. Commercial Allocations to the States
4. Quota Transfers
5. Other Issues

Now, the FMAT is in the process of drafting Amendment alternatives for each issue while incorporating the summarized scoping comments. The FMAT plans to convene again this Fall/Winter to further refine the alternatives for presentation to the Council at the December or February Council meeting.

Necessary Action

1. Provide confirmation on the five issues to be analyzed in the Amendment.
2. Provide direction on Issue 5 (other issues).
3. Identify whether additional scoping is necessary post operational assessment.
4. Provide direction on whether rebuilding should be incorporated into the Amendment.

Bluefish Allocation Amendment
Draft Action Plan
(Updated as of September 2019 and subject to change)

Amendment Goal

The goal of this amendment is to review and possibly revise the allocation between the commercial and recreational fisheries and the commercial allocations to the states. This action may be needed to avoid overages, achieve optimum yield, prevent overfishing, and reduce the need for quota transfers off the U.S. east coast.

Fishery Management Action Team

The Council will form a team of technical experts, known as a Fishery Management Action Team (FMAT) to develop and analyze management alternatives for this amendment. The FMAT is led by Council staff and includes management partners from the National Marine Fisheries Service (NMFS) Greater Atlantic Regional Fisheries Office (GARFO), the Northeast Fisheries Science Center (NEFSC), the Southeast Fishery Management Council (SAFMC), and the Atlantic States Marine Fisheries Commission (ASMFC). The FMAT will work with other experts to address specific issues, as needed.

FMAT Membership

Name	Role/Expertise	Agency
Matthew Seeley	FMAT Chair	MAFMC
Danielle Palmer	Protected Resources	NMFS GARFO
David Stevenson	Habitat Conservation	NMFS GARFO
Cynthia Ferrio	Sustainable Fisheries	NMFS GARFO
Ashleigh McCord	NEPA	NMFS GARFO
Tony Wood	Population Dynamics	NEFSC
Matthew Cutler	Social Sciences	NEFSC
Kathryn Connelly	Economist	NEFSC
Caitlin Starks	Plan Coordinator	ASMFC
Mike Celestino	Bluefish Technical Committee	NJDFW

Applicable Laws

Magnuson-Stevens Act	Yes
National Environmental Policy Act	Yes – will require an Environmental Assessment or Environmental Impact Statement
Administrative Procedure Act	Yes
Regulatory Flexibility Act	Yes
Paperwork Reduction Act	Possibly; depends on data collection needs
Coastal Zone Management Act	Possibly; depends on effects of the action on the resources of the coastal states in the management unit
Endangered Species Act	Possibly; level of consultation will depend on the actions taken
E.O. 12866 (Regulatory Planning and Review)	Yes
E.O. 12630 (Takings)	Possibly; legal review will confirm
E.O. 13123 (Federalism)	Possibly; legal review will confirm
E.O. 13771 (Reducing Regulation and Controlling)	Possibly; legal review will confirm
Essential Fish Habitat	Possibly
Social Impact Analysis	Possibly
Information Quality Act	Yes

Expected Document

Acronym	NEPA Analysis	Requirements
EA	Environmental Assessment	NEPA applies, no scoping required, public hearings required under MSA
EIS	**Environmental Impact Statement**	**NEPA applies, scoping required, public hearings required**

Draft Timeline for Amendment Development and Implementation

Task Description	Date (subject to change)
Initiation and request of FMAT participants	December 2017
Formation of FMAT	January 2018
Initial FMAT discussion	March 2018
ASMFC meeting - review scoping plan and document	May 2018
Scoping hearings/scoping comment period	June-July 2018
Council Meeting - review scoping comments and FMAT, Advisory Panel (AP), and Monitoring Committee recommendations; discuss next steps	August 2018
AP Meeting - review amendment goals and objectives, FMAT recommendations, develop recommendations for alternatives; any amendment issues?	July 2019
FMAT Meeting – review comments and develop draft alternatives	August 2019
Council Meeting – discuss incorporating rebuilding and review the issues to be covered in the Amendment	October 2019
Bluefish Committee Meeting - review comments and develop recommendations for alternatives	November 2019
FMAT Meeting – review comments and develop draft alternatives	December 2019
Refine alternatives for the FMAT	January 2020
FMAT Meeting – Finalize draft alternatives for the February Council Meeting	January 2020
Council Meeting - review (and approve if ready) alternatives for public hearing document	February 2020
Public hearing document and EA/EIS -draft approval	April or June 2020
Public hearings	Summer-Fall 2020
AP Meeting - recommendations for final action	June or July 2020
Bluefish Committee Meeting - recommendations for final action	Summer 2020
Council Meeting - final action	August or October 2020
Submission of draft EA/EIS to GARFO	Fall/Winter 2020
Draft EA/EIS revisions and resubmission	Winter/Spring 2020/2021
Rulemaking (proposed rule)	Spring 2021
Rulemaking (final rule)	Summer/Fall 2021

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 25, 2019

To: Council and Board

From: Karson Coutre, Staff

Subject: Scup Commercial Discards Report

The Council and Board will review commercial scup discards on Tuesday, October 8, 2019. Materials listed below are provided for the Council and Board's consideration of this agenda item.

1) 2019 Commercial Fishery Scup Discard Report
2) Monitoring Committee recommendation summary *(behind Tab 11)*

An Advisory Panel meeting summary from their September 24, 2019 webinar will be added to the supplemental meeting materials on the October meeting page on the Council's website.

Commercial Fishery Scup Discard Report

2019

Background

This document focuses on scup discards in the commercial fishery estimated using the methodology that was peer-reviewed and approved in the 2015 benchmark stock assessment. Scup trawl discards are estimated by calendar quarter, statistical area, and three mesh categories: large (i.e. 5” or greater), small (i.e. smaller than 5” but larger than 2.125”), and squid (i.e. 2.125” or less). Estimated discards are calculated using observer, VTR, and dealer data (NEFSC 2015). Commercial discards for other gear types are not estimated in this manner and are not incorporated into the stock assessment since other gear types account for comparatively small amounts of scup catch.

The scup Gear Restricted Areas (GRAs) became effective November 2000 and have been modified several times. They were designed to reduce bycatch of juvenile scup in small mesh fisheries. Currently, the Southern GRA is in effect from January 1 - March 15. The Northern GRA is in effect from November 1 - December 31. The most recent change in boundary of southern scup GRA became effective January 1, 2017 (Figure 1). 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 diameter.

Effective January 1, 2016, the incidental scup possession limit for trawl vessels using mesh smaller than 5 inches in diameter during November-April increased from 500 pounds to 1,000 pounds. This change was intended to reduce scup discards considering the large increase in scup biomass since this regulation was last changed. 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.

The 2015 year class was estimated to be 326 million fish, the largest year class in the assessment time series since 1984 (NEFSC 2019). In 2017, these fish were mostly too small (< 8 inches/ <20 cm) to be landed in the commercial fishery (Mark Terceiro, NEFSC, personal communication). However, by 2018, they should have been fully recruited to the fishery (i.e. at least 9 inches in length). Recruitment decreased during 2016-2018. Based on the 2019 operational assessment, spawning stock biomass (SSB) is projected to further decrease toward the target unless more above average year classes recruit to the stock in the short term (Figure 2).

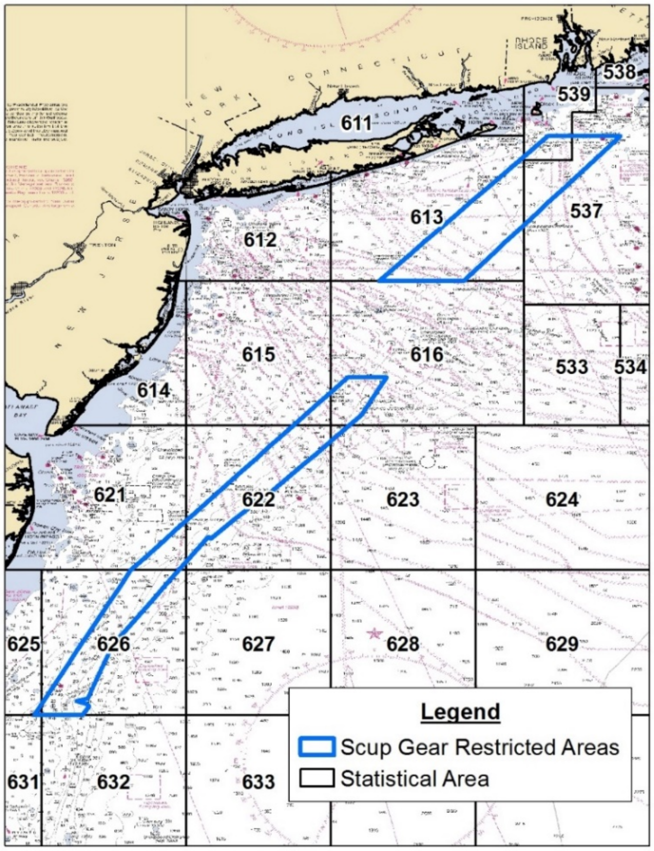

Figure 1: Scup GRAs and NMFS statistical areas.

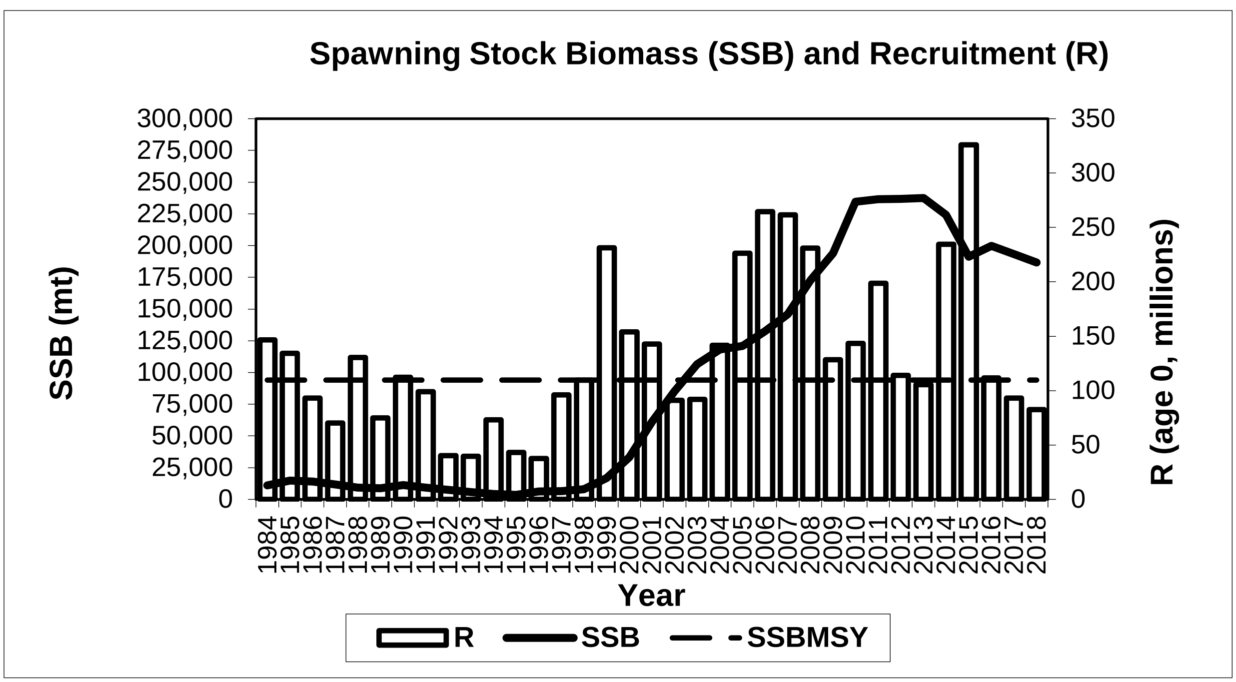

Figure 2: Scup spawning stock biomass and recruitment at age 0, 1984-2018 from the 2019 operational stock assessment (NEFSC 2019).

Discard Evaluation

1. Scup discards are still high but dropped in 2018 compared with 2017.

Total estimated scup discards from all mesh sizes and statistical areas were 3,293 mt (7.3 million pounds) in 2018, 30% lower than 2017 discards which were the highest since 1981 (Figure 3). Discards in 2018 were 81% higher than average discards from 2001-2018.

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

In 2018, squid mesh accounted for 49% of total estimated scup discards, small mesh accounted for 20%, and large mesh accounted for 31% (Figure 3). Scup discards from all mesh sizes decreased in 2018 compared with 2017, small mesh decreased by 40%, squid mesh by 32%, and large mesh by 19% (Figure 3). The 2018 proportions of discards by mesh size were close to the 2001-2018 averages of 46% for squid mesh, 28% for small mesh, and 26% for large mesh.

In 2018, 48% of the discards occurred in quarter 2 (April through June) with the majority of the quarter 2 discards occurring in the squid mesh category (72%, Figure 4). Seasonal patterns in scup discards varied by year. However, over the past 10 years, the average of annual discards by quarter were 23% in quarter 1, 40% in quarter 2, 17% in quarter 3, and 21% in quarter 4 (Figure 5).

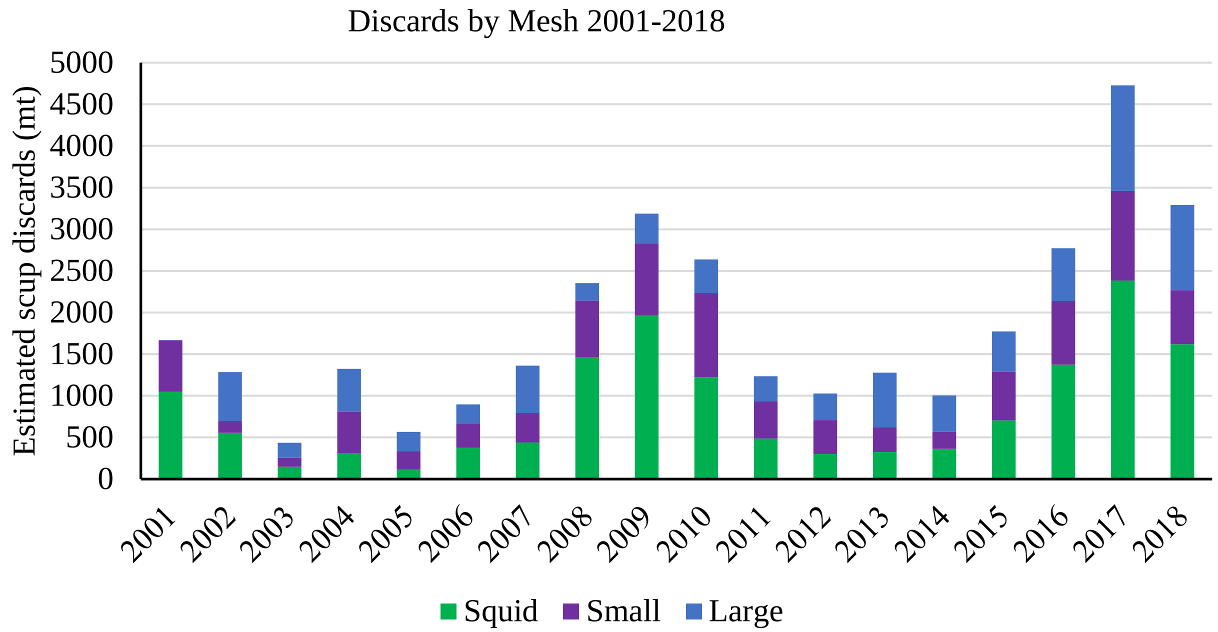

Figure 3: Estimated scup discards by year and mesh size from 2001-2018.

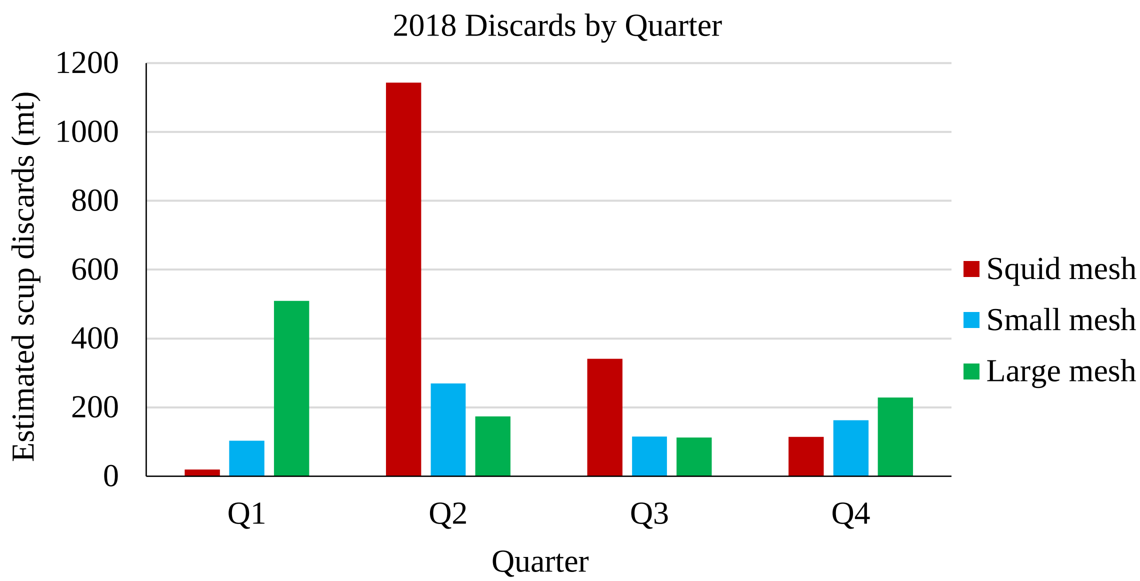

Figure 4: 2018 estimated discards by quarter and mesh size.

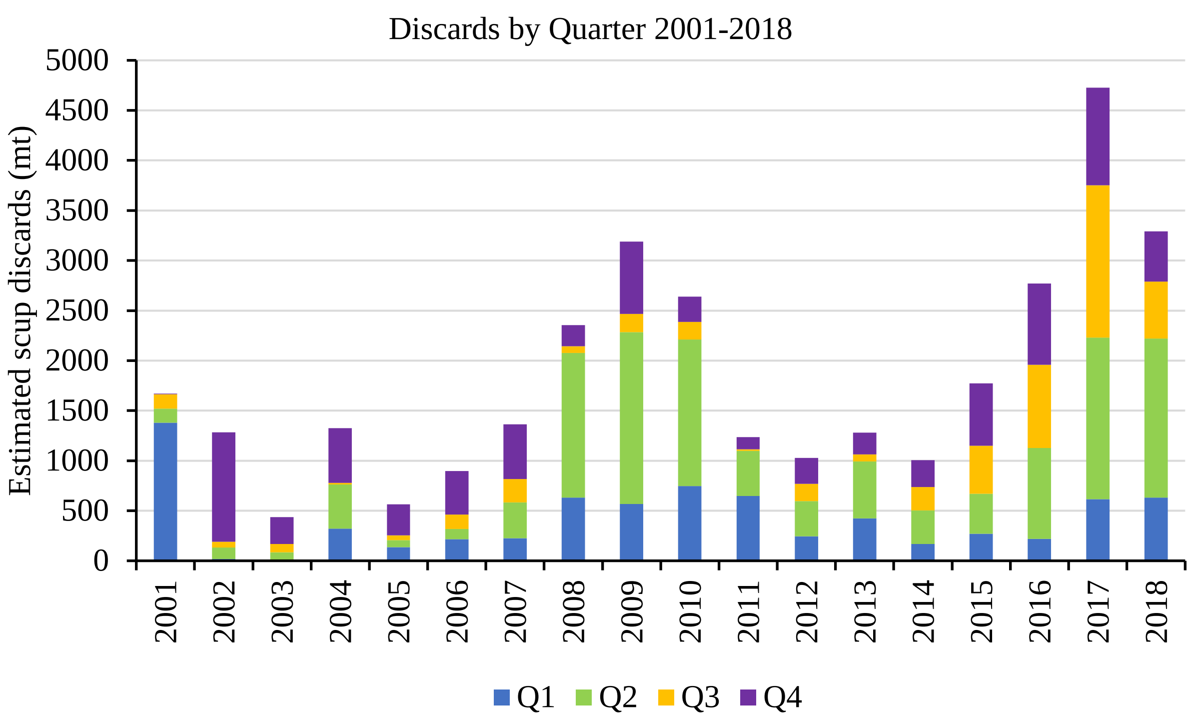

Figure 5: Estimated scup discards for all mesh categories by calendar quarter and year.

Although overall scup discards decreased between 2017 and 2018, discards in statistical areas which are partially included in the southern GRA increased by 44%. Within these statistical areas, squid mesh scup discards increased by 240%, small mesh discards increased by 10%, and large mesh discards increased by 59% (Figure 6).

In 2018, the statistical area with the highest discards was 616 with 33% of the total discards (14% higher than the 2001-2018 average for that area). Area 616 contains a part of the southern GRA and was the statistical area with the highest scup catch in 2018 based on VTR data.

Between 2017 and 2018, scup discards in statistical areas which are partially included in the northern GRA decreased by 56%. Within these statistical areas, squid mesh scup discards decreased by 55%, small mesh discards decreased by 56%, and large mesh discards decreased by 58% (Figure 6).

Total scup discards with all mesh sizes steadily increased from 2014 through 2017 and declined in 2018. This trend closely mirrors the trend in recruitment during 2012-2016 (Figure 7).

A summary of the discard reasons for scup in the 2019 SBRM discard report showed about 59% of discarded scup were due to size regulation, 30% were due to no market, 7% were due to quota regulation and 4% were discarded for other reasons. This analysis was for otter trawl gear and all mesh sizes from July 2017-June 2018 (Wigely and Tholke, 2019).

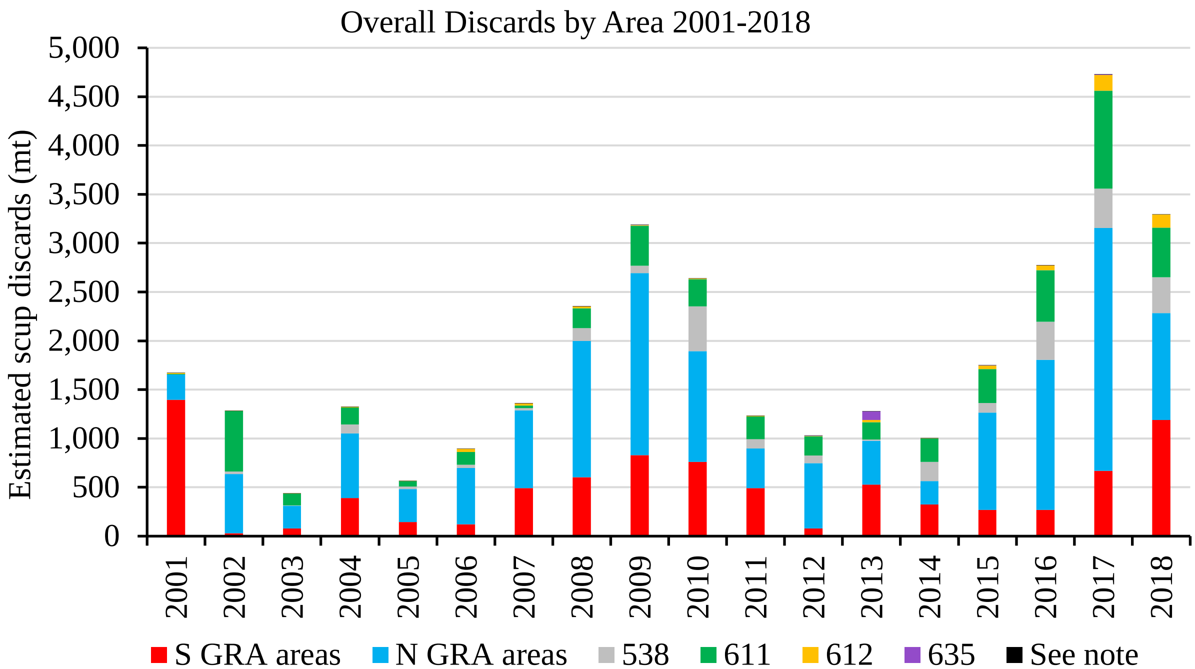

Figure 6: Estimated scup discards by year and statistical area for all mesh sizes. *Note:* statistical areas which are not part of the GRAs and which had less than 100 mt of estimated scup discards during 2001-2018 are grouped together (i.e. areas 513, 514, 515, 521, 522, 525, 526, 561, 562, 614, 627, and 636).

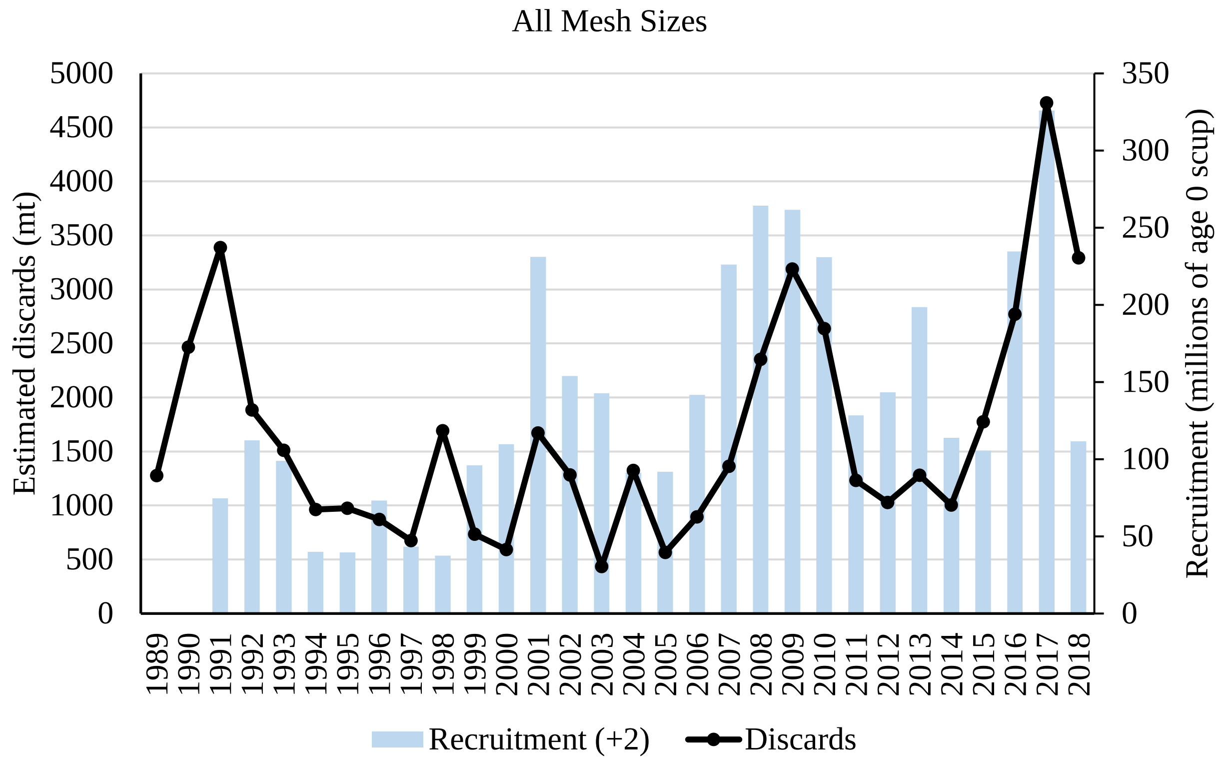

Figure 7: Estimated annual scup discards and recruitment from two years prior (e.g. 2015 recruitment is shown in 2017). Discards are shown for all mesh sizes combined in all statistical areas.

3. Average scup discards were lower after GRA implementation, while the effects of recent GRA modification are unknown.

Discards from statistical areas that are partially included in the southern GRA during quarter 1 were compared before and after the GRA implementation in 2000. The pre-GRA discard average was 344 mt and the post-GRA average was 234 mt, a 32% decrease in discards (Figure 8). Note that the southern GRA is not in effect for the entirety of quarter 1.

Discards from statistical areas that are partially included in the northern GRA during quarter 4 were compared before and after the GRA implementation. The pre-GRA discard average was 426 mt and the post-GRA average was 171 mt, a 60% decrease in discards (Figure 8). Note that the northern GRA is not in effect for the entirety of quarter 4.

Annual discard estimates (all quarters, mesh sizes, and areas) as a proportion of SSB averaged 20% from 1989-1999 and 1% from 2001-2018 (Figure 9).

The most recent boundary change to the southern GRA became effective in 2017 which coincided with the record-high 2015 year class reaching 2 years of age. This influx of juvenile scup too small to be landed likely contributed to the high discards in 2017 (Figure 7).

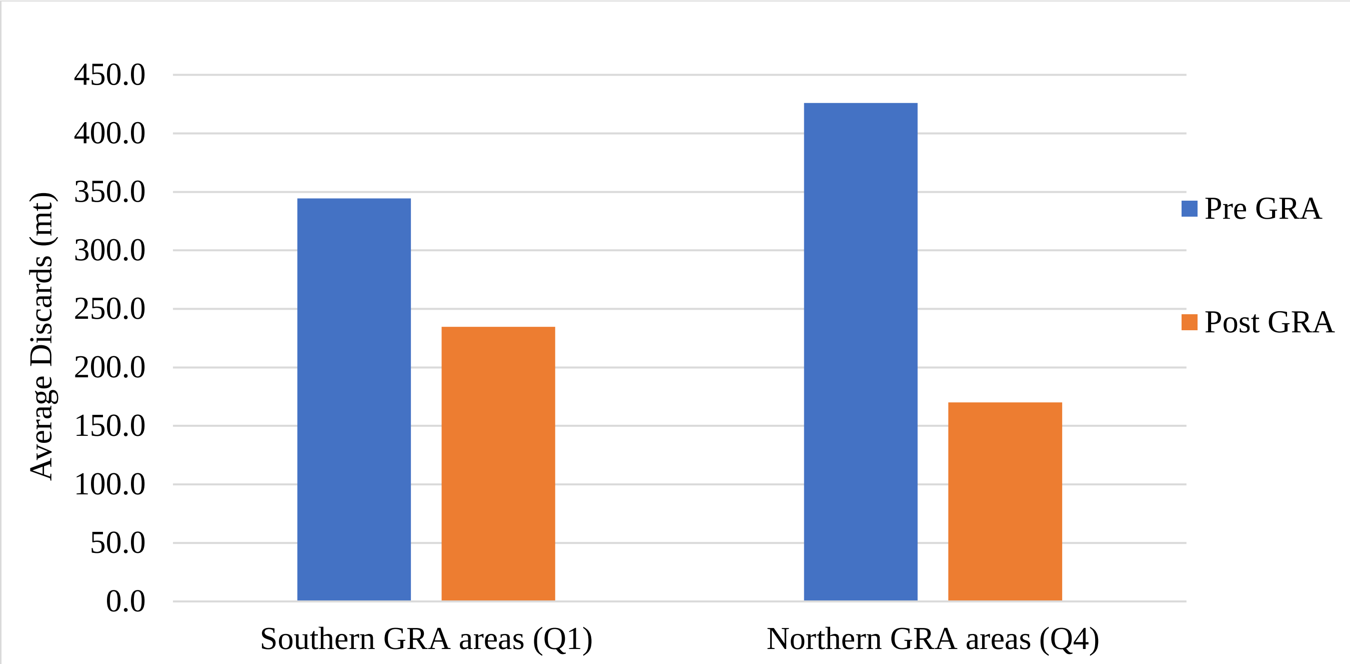

Figure 8: Average estimated scup discards from statistical areas that are partially included in the GRAs during the quarter they are in effect. Discard estimates were averaged across the years before and after the GRAs were in effect.

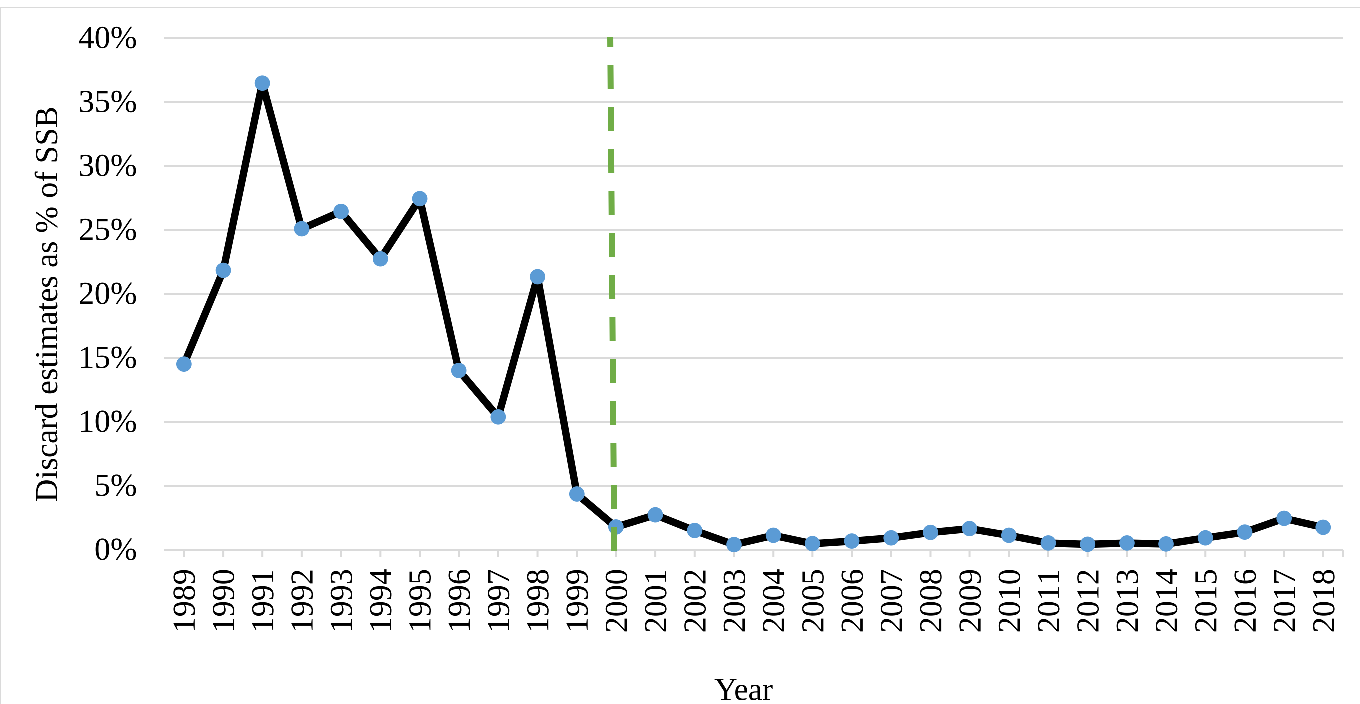

Figure 9: Annual discard estimates as a proportion of spawning stock biomass from 1989-2018 from the 2019 operational stock assessment (NEFSC 2019). The green dashed line represents the implementation of the GRAs.

Conclusion

Discards are still well above average and should continue to be evaluated. Discard information in future years may provide insight into the effects of recent regulatory changes such as increases in the incidental possession limit (2016, 2019) and changes to the southern GRA boundary (2017). Discards may continue to decline due to the low recruitment from 2016-2018 (Figure 2).

References

NEFSC (Northeast Fisheries Science Center). 2015. SARC 60 Scup Working Paper - TOR 1: Estimates of Commercial Fishery Scup Discards: 1989-2013.

NEFSC. 2019. Pre-publication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC. Available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11.

Wigely SE, Tholke C. 2019. 2019 Discard Estimation, Precision, and Sample Size Analyses for 14 Federally Managed Species Groups in the waters off the northeastern United States. NOAA Tech Memo NMFS-NE 254; 179 p. Available at: https://www.nefsc.noaa.gov/publications/tm/tm254/.

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MEMORANDUM

Date: September 25, 2019

To: Council and Board

From: Karson Coutre, Staff

Subject: Scup Specifications for 2020-2021

The Council and Board will consider revised 2020 and 2021 specifications for scup on Tuesday, October 8, 2019. Materials listed below are provided for the Council and Board's consideration of this agenda item.

Please note that some materials are behind other tabs.

1) Monitoring Committee recommendation summary
2) September 2019 Scientific and Statistical Committee meeting report *(behind Tab 18)*
3) Staff memo on 2020-2021 scup specifications dated August 26, 2019
4) 2019 Operational Assessment and Peer Review Panel Report: Bluefish, Black Sea Bass, Scup *(behind Tab 7)*
5) August 2019 Advisory Panel Fishery Performance Report
6) Additional written comments from advisors related to summer flounder, scup, and black sea bass Fishery Performance Reports
7) 2019 Scup Fishery Information Document

An Advisory Panel meeting summary from their September 24, 2019 webinar, as well as additional written comments from advisors related to this meeting, will be added to the supplemental meeting materials on the October meeting page on the Council's website.

Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC)
September 16-17, 2019 Meeting Summary
Baltimore, MD

Monitoring Committee Attendees: Alex Aspinwall (VMRC), Julia Beaty (MAFMC staff), Peter Clarke (NJ F&W), Dustin Colson Leaning (ASMFC staff), Karson Coutre (MAFMC staff), Kiley Dancy (MAFMC staff), Steve Doctor (MD DNR), Emily Gilbert (GARFO), John Maniscalco (NY DEC), Jason McNamee (RI F&W; via webinar), Kirby Rootes-Murdy (ASMFC staff; Tuesday only), Caitlin Starks (ASMFC staff), Mark Terceiro (NEFSC; via webinar), T.D. VanMiddlesworth (NC DMF), Greg Wojcik (CT DEEP)

Additional Attendees: Alan Bianchi (NC DMF; via webinar), Steve Cannizzo (NY RFHFA; via webinar), Greg DiDomenico (GSSA; Tuesday only), Nichola Meserve (MADMF; via webinar)

Black Sea Bass 2020-2021 Specifications

Under the MC's recommended approach to estimating discards (described below), the black sea bass commercial quota and recreational harvest limit (RHL) would increase by up to 56% in 2020 compared to 2019 (Table 1). **The MC agreed that a commercial quota increase of this magnitude from one year to the next could have unintended socioeconomic consequences**, especially if reductions are needed in future years, as would be required under standard/varying acceptable biological catch (ABC) limits or if the sector allocations are modified through an amendment.

The MC agreed that there is some uncertainty regarding how the commercial fishery will respond to a quota increase of this magnitude. For example, some members from states with comparatively high quota allocations said the commercial fisheries in their states might not harvest their full allocations, while others from states with lower allocations said their states would harvest the full increase. The group agreed that this uncertainty does not justify a management uncertainty buffer between the annual catch limit (ACL) and the annual catch target (ACT) as the commercial fishery is well-monitored and controlled. They agreed that **both the commercial and recreational ACTs should be set equal to their respective ACLs**, consistent with past practice for this species.

Although the RHL could increase by 56% from 2019 to 2020, recreational harvest will likely need to be notably restricted in 2020 to prevent the RHL from being exceeded. For example, under the revised Marine Recreational Information Program (MRIP) data, recreational harvest in 2018 was 7.92 million pounds, 39 - 44% higher than the potential 2020 RHL, depending on the approach used to establish the ABC. Several MC members agreed that **a reduction in recreational harvest of over 30% in 2020 is very hard to justify given that biomass is 240% of the biomass target, availability is very high, and restrictions of that magnitude would likely lead to increased discards which could result in an ACL overage**. The group has strong concerns about the potential necessary reductions in recreational harvest given these circumstances.

The MC stressed that **it is imperative that the Council and Board take action to address the commercial and recreational allocation percentages defined in the Fishery Management Plans (FMPs) for summer flounder, scup, and black sea bass**. These allocations do not reflect recent patterns of commercial and recreational catch based on the new MRIP data. This is one of many factors driving the need to restrict recreational black sea bass landings while allowing an increase in commercial landings.

The MC acknowledged that they have a very limited ability to impact the 2020 RHL. For example, they can recommend a management uncertainty buffer from the ACL to the ACT and they can recommend the most appropriate values for expected discards. Other options such as a transfer of quota from the commercial sector to the recreational sector or a change in the allocations defined in the FMP are not possible without an amendment, which could not be implemented in time to impact the fishery in 2020.

The MC had a thorough discussion of the appropriate methodology for calculating expected discards in 2020 and 2021. For several years, the MC has calculated expected black sea bass discards by first dividing the ABC into a landings portion and a discards portion based on the most recent three year average proportions of total (commercial and recreational) landings and discards based on data provided by the Northeast Fisheries Science Center (NEFSC, the same data used in the stock assessment). The discards portion was then further divided into expected commercial discards and recreational discards based on the most recent three year average of discards by sector based on NEFSC data.

The National Marine Fisheries Service Greater Atlantic Regional Fisheries Office (GARFO) uses the NEFSC recreational discard estimates for recreational ACL monitoring; however, they calculate separate commercial discard estimates for commercial ACL monitoring. The GARFO and NEFSC estimates can differ substantially in some years. Some MC members suggested that if the GARFO estimates are used for ACL accountability, then they should also be used to calculate ACLs, ACTs, and quotas. Other MC members noted that there are ongoing discussions between GARFO and NEFSC regarding the differences in their estimates and their appropriate use. The MC agreed to continue using the NEFSC discard estimates in recommending specifications until they can consider the differences in the two sets of estimates in greater detail and until the NEFSC and GARFO discussions reach a conclusion.

The MC discussed whether an increase in the commercial quota would be expected to cause discards to decrease because more fish could be landed, or if increased fishing effort would result in discards also increasing. Trends in commercial quotas, landings, and discards since 1998 suggest that commercial black sea bass landings closely follow changes in the quota and that discards tend to scale up or down with increases or decreases in landings. The MC also noted that sector-specific discards as a proportion of sector-specific catch have been relatively consistent over at least the past three years, even under varying commercial quotas and RHLs and highly variable recreational harvest estimates over that time period (including two years with outlier recreational estimates). They also noted that their past approach of using the most recent three-year average proportions of total landings, total discards, and sector-specific discards has notably under-predicted discards, leading to ACL overages in both sectors in many recent years. The MC, therefore, agreed that consideration of a new approach to predicting black sea bass discards was warranted.

The MC recommended that expected commercial and recreational discards in 2020-2021 be calculated based on the assumption that discards in each sector as a proportion of catch in each sector would be equal to the 2016-2018 average proportions based on NEFSC data (Table 2). The calculations also factored in the requirement that 49% of the landings proportion of the ABC must be allocated to the commercial fishery and 51% to the recreational fishery. The resulting expected discard values are shown in Table 1. The MC agreed that this methodology is more appropriate than the previous methodology for estimating black sea bass discards as it scales discards with expected changes in landings (assuming the commercial quota and RHL will be fully landed and not exceeded), consistent with observed patterns in the fishery. It also gives equal weight to the sector-specific proportions in each of the three years, thus downplaying the influence of any potential single year outliers. The resulting discard values combined with the allocation percentages defined in the FMP and the Monitoring Committee's recommendation that the ACTs be set equal to their ACLs result in the catch and landings limits shown in Table 1.

As previously stated, the values in Table 1 include 42-76% increases in the ABC and commercial and recreational catch and landings limits in 2020 relative to 2019, depending on the measure and ABC approach used. The MC agreed that **the Council and Board should be cautious when making such large adjustments in a single year as this could have unintended biological and socioeconomic consequences**. They agreed that there could be benefits to taking the increase incrementally over multiple years; however, they did not feel that they had the ability to recommend an appropriate incremental approach under the constraints of the current management system and considering the different implications of the 2020 catch limits for the commercial and recreational sectors.

The MC recommended no changes to the commercial minimum fish size of 11 inches, the 4.5 inch diamond minimum mesh size and associated seasonal incidental possession limits (i.e., 500 pounds during January - March and 100 pounds during April - December), and the current gear requirements for pots/traps for 2020. No new information or public comments supported changes in these regulations for 2020.

One member of the public provided comments during the meeting. He echoed the MC's concerns about increasing catch limits drastically from one year to the next. He said instability in management measures is an enormous problem. He added that stakeholders will argue for as much quota as possible, even if it may not be used, due to fears about future reallocations. He added that better monitoring, improved reporting, and changes to the permit regulations are needed for both the commercial and recreational sectors.

Summer Flounder 2020 Specifications

The MC made no changes to their previous recommendations for 2020 specifications. This includes commercial and recreational summer flounder ACTs that are set equal to their respective ACLs, with no reduction for management uncertainty. The previously adopted commercial and recreational catch and landings limits are shown in Table 3.

At both the February 2019 meeting and this September 2019 meeting, the MC expressed concern with recent ACL overages caused by higher than expected commercial discards. Observer data indicate that a high proportion of discards in 2017 and 2018 were likely driven by quotas that were well below average. The MC expects that discards will decrease in 2019 as the result of increased quotas. However, it is worth noting that the MC also discussed the relationship between landings and discards for scup and black sea bass and found that the relationship between quota changes and discards is not always clear and varies by species. The MC will continue to monitor discards in the commercial fishery for potential changes that may be needed to discard projections or management measures in future years.

Recreational fishery performance is variable and many factors influence recreational catch and effort. The MC has increased efforts to address management uncertainty through the recreational measures setting process, including approaches to respond to imprecision in the recreational data and development of additional tools to evaluate changes in measures. Similar to discards in the commercial fishery, the relationship between RHLs and recreational discards should be explored in more detail. Methods for calculating and responding to recreational discards in the recreational fishery may be modified in the next round of specifications for summer flounder. The MC agreed that no changes to their previous recommendations for 2020 recreational catch and landings limits are necessary, including their previous recommendation that the recreational ACT be set equal to the ACL.

The MC agreed with the staff recommendation that no changes be made to the commercial minimum fish size (14-inch total length), commercial gear requirements, and exemption programs for 2020. As discussed in the "Minimum Mesh Size Regulations" section below, the MC revisited the 2018 commercial mesh size selectivity study results for summer flounder. The MC recommends no changes to the minimum mesh size for 2020, but will revisit this issue following further evaluation and analysis of potential effects of mesh size changes and input from industry.

Scup 2020-2021 Specifications and Scup Discards Report

The MC felt that it was appropriate to continue to monitor scup discards and no immediate management action is needed. One member suggested analyzing discards from a hypothesis testing approach in the future (e.g., focusing on the question of did changes in the scup Gear Restricted Areas impact discards coming from the squid fishery) and noted that there are several confounding factors like seasonality in where the fishery operates and seasonality in discards, so the problem is multivariate in nature, and a hypothesis testing approach may help to focus in on the important questions and reduce the complexity of the analysis. MC members and one member of the public felt that high recruitment had more of an impact on discards than the recent change to the southern gear restricted area (GRA) boundary. MC members agreed that discards may continue to decline due to the strong relationship between discards and recruitment and the below average recruitment since 2016. One member of the public commented that discards are a problem and everyone wants to address them, adding that the Science Center for Marine Fisheries has funding to conduct an analysis of discards to further understand the issue. He also added that this year there are large scup south of Hudson Canyon for the first time in 10 years. In addition, he said some discards could be turned into landings by considering an 8” minimum size. Multiple MC members noted that scup are not fully mature at that size and did not want to consider a minimum size that included a high proportion of immature fish.

The MC discussed the appropriate methodology for calculating expected scup discards in 2020 and 2021. For the past several years, projected discards from the stock assessment have been apportioned between commercial and recreational fisheries using the average percent of dead discards attributable to each sector over the previous three years based on NEFSC data. The MC felt that using a 10-year average would help smooth out year-to-year variability which can be driven by recruitment and other factors and may better estimate expected discards. Additionally, since there is a relationship between recruitment and discards, using a longer term average is more consistent with how recruitment is handled in the stock assessment projections, therefore this creates a logical consistency between the discard assumptions being used by the MC and aspects of the assessment projection methodology. **The MC therefore recommended using the current method of calculating the proportion of discards by sector using a 10-year average instead of a 3-year average.** The MC discussed that scup discards are sensitive to large recruitment events and unlike black sea bass, landings and discards don't have a consistent relationship for both sectors. Therefore, they agreed that it was appropriate to use a different methodology for scup compared to black sea bass. One MC member added that in future years the MC can be flexible on how to calculate discard proportions to account for factors such as large recruitment events. The resulting expected discards and the **MC recommendation that the ACTs be set equal to their ACLs** result in the catch and landings limits shown in Table 4.

Based on the revised MRIP data, recreational harvest in 2018 was 12.98 million pounds, 99-136% higher than the potential 2020 RHL, depending on the approaches used for the ABC and expected discards. Recreational harvest will need to be restricted in 2020 to prevent the RHL from being exceeded. The MC again discussed the importance of a Council and Board action to re-evaluate the commercial and recreational allocation defined in the FMPs.

The MC also discussed the varying and averaged ABC approaches. One benefit of the varying approach is that there would be a smaller decrease in RHL in 2020 and there may be the possibility of allocation issues being alleviated through Council action by 2021. However after some discussion, MC members felt that due to the potential large reductions to the recreational fishery, stability across the two years may be preferable to the back-to-back reductions under the varying ABC approach. The MC generally preferred the averaged ABC approach. They also **recommended no changes to the commercial minimum fish size, minimum mesh size, possession limits, gear requirements, and quota period regulations for 2020.**

Minimum Mesh Size Regulations

The MC revisited the 2018 mesh selectivity study for summer flounder, scup, and black sea bass by Hasbrouck et al. (2018)[1] which they previously discussed in July 2018. The results suggest that, in general, the current minimum mesh sizes are effective at releasing catch of most undersized and immature fish, but modifications could be considered to allow for consistent mesh sizes for black sea bass and scup, and to potentially reduce discards of undersized summer flounder. The MC had previously identified additional analyses and input needed from industry before recommending changes to the mesh size regulations. Other recent management priorities such as responding to recent scup and black sea bass operational assessments, sector allocation concerns driven by recent recreational estimate changes, and other tasks have lowered the near-term priority of further exploring mesh size issues.

The study 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. The MC has concerns with the amount of undersized summer flounder caught with the 6.0" square mesh and previously recommended exploration of phasing out the use of 6.0" square mesh to reduce discards of undersized fish. This year, the MC agreed that they still support further exploring these issues and are especially interested in hearing feedback from industry on mesh size use in the summer flounder fishery. They indicated that

[1] Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

further evaluation should include: 1) clarifying which vessels or fleets are currently using square mesh, 2) estimating costs to industry from changing mesh sizes, 3) evaluating the biological benefits of phasing out the 6.0" square mesh, and 4) determining if a square mesh regulation is still needed and if there is a more appropriate square mesh equivalent to the 5.5" diamond.

For scup and black sea bass, the study results indicate that a consistent mesh size of either 4.5" or 5.0" could likely be specified for these species. The MC requested additional analyses of the potential biological and economic impacts of a mesh size change for each species, as well as input from industry on the overlap in these fisheries and the current mesh sizes used in the black sea bass fishery.

The MC agreed that pursuing further analyses and gathering Advisory Panel and other industry input for minimum mesh size regulations should still be a priority; however, it may be a lower near-term priority relative to other management issues. The MC will revisit this issue following further evaluation and analysis of potential effects of mesh size changes and input from industry.

2020 Recreational Measures

The MC had a brief discussion to plan for setting 2020 recreational measures later this fall. The MC will meet again in mid-November to recommend recreational measures for all three species for consideration at the December Council/Board meeting.

The MC discussed the possibility of exploring new approaches for summer flounder recreational management such as more truly regional measures and/or alternatives to a single minimum size limit (e.g., slot limits or a split size limit). Several MC members expressed support in theory for alternative size limit measures but identified potential difficulties with implementing them in practice. Past analyses have indicated that it would be difficult to constrain harvest under these types of alternative measures without corresponding drastic reductions in season and/or possession limit. New Jersey has been exploring modeling slot limit options, but it would potentially require a very narrow slot (e.g., half an inch), and still require a reduced season. MC members noted that alternatives to large minimum sizes would likely provide more equitable access to fish in different parts of the management unit that have access to different sizes of summer flounder, but increased harvest of smaller summer flounder could have negative biological impacts if it allowed for harvest of smaller fish that have not yet spawned. Overall, the group supported further exploration of these types of management strategies.

GARFO staff clarified that at this time, it is not clear whether or not the final rule for Framework 14 (black sea bass conservation equivalency, slot limits for summer flounder and black sea bass in federal waters, and Block Island transit provisions) will publish in time to use these strategies for 2020. Slot limits can currently be used by individual states in state waters.

For scup and black sea bass, as discussed above, the group acknowledged that depending on the RHLs adopted by the Council and Board and the expected level of harvest in 2020, large recreational harvest reductions for these species are likely to be necessary. The MC discussed the importance of approaching any reductions in an equitable manner, including minimizing regulatory discrepancies between state and federal waters.

Table 1: Currently implemented 2019 and interim 2020 black sea bass catch and landings limits and potential 2020 (revised) and 2021 catch and landings limits, based on the SSC's OFL and ABC recommendations and the MC's recommendations for expected discards and management uncertainty. Numbers may not add precisely due to unit conversions and rounding.

Measure	2019 and interim 2020		2020 (revised) and 2021, standard ABC approach				2020 (revised) and 2021, average ABC approach				Basis for 2020 (revised) and 2021
			2020		2021		2020		2021		
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	
OFL	10.29	4,667	19.39	8,795	17.82	8,083	19.39	8,795	17.68	8,021	SSC recommendations based on stock assessment projections
ABC	**8.94**	**4,055**	**15.70**	**7,123**	**14.43**	**6,546**	**15.07**	**6,835**	**15.07**	**6,835**	SSC recommendations based on stock assessment projections and Council risk policy
ABC discards	1.76	799	4.51	2,046	4.15	1,882	4.33	1,964	4.33	1,964	Calculated based on the sector-specific discards described below and the requirement that 49% of the landings portion of the ABC be allocated to the commercial fishery and 51% to the recreational fishery
Projected com. discards	0.83	377	3.08	1,397	2.83	1,284	2.96	1,343	2.96	1,343	Calculated based on an assumption that commercial discards would be 20% of commercial catch (2016-2018 avg. proportion based on NEFSC data)
Projected rec. discards	0.93	422	1.43	649	1.31	594	1.37	621	1.37	621	Calculated based on an assumption that recreational discards would be 36% of recreational catch (2016-2018 avg. proportion based on NEFSC data)
Com. ACL	4.35	1,974	8.56	3,885	7.87	3,569	8.22	3,729	8.22	3,729	49% of ABC landings portion + projected com. discards
Com. ACT	4.35	1,974	8.56	3,885	7.87	3,569	8.22	3,729	8.22	3,729	Set equal to the ACL, no deduction for management uncertainty (staff recommendation)
Com. quota	**3.52**	**1,596**	**5.48**	**2,488**	**5.04**	**2,285**	**5.26**	**2,387**	**5.26**	**2,387**	Com. ACT minus projected com. discards
Rec. ACL	4.59	2,083	7.14	3,238	6.55	2,973	6.85	3,106	6.85	3,106	51% of ABC landings portion + projected rec. discards
Rec. ACT	4.59	2,083	7.14	3,238	6.55	2,973	6.85	3,106	6.85	3,106	Set equal to the ACL, no deduction for management uncertainty (staff recommendation)
RHL	**3.66**	**1,661**	**5.71**	**2,589**	**5.24**	**2,378**	**5.48**	**2,484**	**5.48**	**2,484**	Rec. ACT minus projected rec. discards

Table 2: Black sea bass commercial and recreational landings and dead discards in millions of pounds during 2016-2018 based on values provided by the NEFSC.

Value	2016	2017	2018	Avg
Commercial landings	2.50	3.99	3.34	**3.28**
Commercial discards	1.67	2.26	1.59	**1.84**
Recreational landings	13.52	12.55	8.84	**11.64**
Recreational discards	3.07	3.60	2.28	**2.98**
Commercial discards as % of com. catch	18%	22%	20%	**20%**
Recreational discards as % of rec. catch	40%	36%	32%	**36%**

Table 3: Currently implemented catch and landings limits for summer flounder for 2020. These measures are identical to those implemented for 2019 and 2021, with the exception of the OFL which varies slightly in each year. The sector-specific catch and landings limits are initial limits prior to any deductions for past overages.

Measure	2020		Basis
	mil lb	mt	
OFL	30.94	14,034	Stock projections
ABC	25.03	11,354	SSC recommendation for averaged approach with projections sampling from recent 7-year recruitment series
ABC Landings Portion	19.21	8,715	Stock projections
ABC Discards Portion	5.82	2,639	Stock projections
Expected Commercial Discards	2.00	907	34% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Expected Recreational Discards	3.82	1,732	66% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Commercial ACL	13.53	6,136	60% of ABC landings portion (FMP allocation) + expected commercial discards
Commercial ACT	13.53	6,136	No deduction from ACL for management uncertainty
Commercial Quota	11.53	5,229	Commercial ACT, minus expected commercial discards
Recreational ACL	11.51	5,218	40% of ABC landings portion (FMP allocation) + expected recreational discards
Recreational ACT	11.51	5,218	No deduction from ACL for management uncertainty
RHL	7.69	3,486	Recreational ACT, minus expected recreational discards

Table 4: Currently implemented 2019 and interim 2020 scup catch and landings limits and Monitoring Committee recommended 2020 (revised) and 2021 catch and landings limits based on the standard and average ABC approaches.

Management measure	2019 and interim 2020		2020 (revised) and 2021 standard ABC approach				2020 (revised) and 2021 average ABC approach				Basis
			2020		2021		2020		2021		
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	
OFL	41.03	18,612	41.17	18,674	35.30	16,012	41.17	18,674	35.62	16,159	Assessment projections
ABC	**36.43**	**16,525**	**35.77**	**16,227**	**30.67**	**13,913**	**33.22**	**15,070**	**33.22**	**15,070**	Assessment projections & risk policy
ABC discards	5.08	2,304	7.03	3,190	7.26	3,295	6.53	2,963	7.85	3,560	Assessment projections
Commercial ACL	28.42	12,890	27.90	12,657	23.92	10,852	25.91	11,755	25.91	11,755	78% of ABC (per FMP)
Commercial ACT	28.42	12,890	27.90	12,657	23.92	10,852	25.91	11,755	25.91	11,755	Set equal to commercial ACL
Projected commercial discards	4.43	2,011	5.27	2,393	5.45	2,471	5.39	2,446	5.39	2,446	75% of ABC discards (avg. % of dead discards from commercial fishery, 2009-2018)
Commercial quota	**23.98**	**10,879**	**22.63**	**10,265**	**18.48**	**8,381**	**20.52**	**9,308**	**20.52**	**9,308**	Commercial ACT minus discards
Recreational ACL	8.01	3,636	7.87	3,570	6.75	3,061	7.31	3,315	7.31	3,315	22% of ABC (per FMP)
Recreational ACT	8.01	3,636	7.87	3,570	6.75	3,061	7.31	3,315	7.31	3,315	Set equal to recreational ACL
Projected recreational discards	0.65	293	1.76	798	1.82	824	1.80	815	1.80	815	25% of the ABC discards (avg. % of dead discards from rec. fishery, 2009-2018)
RHL	**7.37**	**3,342**	**6.11**	**2,772**	**4.93**	**2,237**	**5.51**	**2,500**	**5.51**	**2,500**	Recreational ACT minus discards

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: August 26, 2019

TO: Chris Moore, Executive Director

FROM: Karson Coutre, Staff

SUBJECT: 2020-2021 Scup 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 revised 2020 and new 2021 catch and landings limits for scup, as well as commercial management measures for 2020. Additional information on fishery performance and past management measures can be found in the 2019 Scup Fishery Information Document[1] and the 2019 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.[2]

A scup operational stock assessment was peer reviewed and accepted in August 2019. This assessment incorporated fishery catch and fishery-independent survey data through 2018, including revised recreational catch data provided by the Marine Recreational Information Program (MRIP) for 1989-2018. The revised MRIP data are based on a new estimation methodology accounting for changes to the angler intercept methodology and the recent 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, substantially raising the overall scup catch and harvest estimates.

A scup operational stock assessment was peer reviewed and accepted in August 2019. According to this assessment, the scup stock was not overfished, and overfishing was not occurring in 2018 relative to the updated biological reference points calculated through the assessment. Spawning stock biomass (SSB) was estimated to be about 411 million pounds (186,578 mt) in 2018, about 2 times the SSB_{MSY} proxy reference point (i.e. $SSB_{40\%}$) of 207 million pounds (94,020 mt). Fishing mortality on fully selected age 3 scup was 0.158 in 2018, about 73% of the F_{MSY} proxy reference point ($F_{40\%}$) of 0.215. The 2015 year class is estimated to be the largest in the time series at 326 million fish, while the 2016-2018 year classes are estimated to be below average.[3]

[1] Available at: http://www.mafmc.org/sf-s-bsb
[2] Advisors will meet to write the 2019 Fishery Performance Report on August 29, 2019. Once the final document is available, it will be posted to http://www.mafmc.org/sf-s-bsb
[3] A prepublication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

Interim 2020 catch and landings limits for scup were adopted by the Council and the Atlantic States Marine Fisheries Commission's (ASMFC's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in March 2019 (Table 1). These catch and landings limits are identical to those implemented for 2019 and are intended to be replaced as soon as possible with revised catch and landings limits based on the August 2019 operational stock assessment.

The Council's SSC is tasked with recommending a revised 2020 scup Acceptable Biological Catch (ABC) limit and a 2021 scup ABC during their September 2019 meeting. Following that meeting, the Monitoring Committee will meet to recommend 2020-2021 Annual Catch Targets (ACTs), Annual Catch Limits (ACLs), landings limits, and any necessary modifications to commercial gear restrictions, minimum fish sizes, and other commercial measures. The Council and Board will meet jointly in October 2019 to review the recommendations of the SSC and Monitoring Committee, as well as input from advisors, and adopt revised catch and landings limits for 2020 and new catch and landings limits for 2021, as well as any desired changes to the commercial management measures for 2020. Recreational management measures (bag limits, size restrictions, and open/closed seasons) for 2020 will be considered in late 2019 after preliminary recreational catch data through August 2019 are available.

Two sets of ABC projections for 2020-2021 are available, the "standard" approach projects annually varying 2020-2021 ABCs and the "average" approach projects averaged 2020-2021 ABCs. Under the standard approach, the 2020 ABC (35.77 mil lb/ 16,227 mt) would be a 2% decrease from the current interim 2020 ABC (36.43 mil lb/ 16,525 mt). The 2021 ABC (30.67 mil lb/13,913 mt) would be 14% lower than the revised 2020 ABC and 16% lower than the current interim ABC. Under the average approach, the ABCs in 2020 and 2021 would be identical at 33.22 million pounds (15,070 mt, a 9% decrease compared to the current interim 2020 ABC). There are tradeoffs to both ABC approaches. The averaging approach would allow for stability in catch and landings limits across two years and would allow for a higher 2021 ABC than the standard approach; however, this would require a lower 2020 ABC than is possible under the standard approach. Staff recommend the standard ABC approach.

Based on the above ABCs, the standard ABC approach would result in a 2020 commercial ACL of 27.90 million pounds (12,657 mt), a 2020 recreational ACL of 7.87 million pounds (3,570 mt), a 2021 commercial ACL of 23.92 million pounds (10,852 mt), and a 2021 recreational ACL of 6.75 million pounds (3,061 mt). The averaged ABC approach would result in a 2020-2021 commercial ACL of 25.91 million pounds (11,755 mt), and a 2020-2021 recreational ACL of 7.31 million pounds (3,315 mt). Staff recommend no reduction from the commercial and recreational ACLs to the sector-specific ACTs to account for management uncertainty; therefore, both the commercial and recreational ACTs would be set equal to their respective ACLs for 2020 and 2021. Table 1 lists the 2020-2021 commercial quotas and recreational harvest limits (RHLs) which result from subtracting expected discards from the ACTs under varying and constant ABCs. Staff recommend no changes to the commercial measures for the scup fishery, including the minimum fish size, mesh size requirements and associated incidental possession limits, or pot/trap gear requirements for 2020.

Table 1: Currently implemented 2019 and interim 2020 scup catch and landings limits and potential 2020 (revised) and 2021 catch and landings limits based on the standard and average ABC approaches. The standard approach is recommended by staff. Under the average approach, the average of projected ABC discards was used for constant landings limits in both years.

Management measure	2019 and interim 2020		2020 (revised) and 2021 standard ABC approach				2020 (revised) and 2021 average ABC approach				Basis
			2020		2021		2020		2021		
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	
OFL	41.03	18,612	41.17	18,674	35.30	16,012	41.17	18,674	35.62	16,159	Assessment projections
ABC	**36.43**	**16,525**	**35.77**	**16,227**	**30.67**	**13,913**	**33.22**	**15,070**	**33.22**	**15,070**	Assessment projections & risk policy
ABC discards	5.08	2,304	7.03	3,190	7.26	3,295	7.19	3,262	7.19	3,262	Assessment projections
Commercial ACL	28.42	12,890	27.90	12,657	23.92	10,852	25.91	11,755	25.91	11,755	78% of ABC (per FMP)
Commercial ACT	28.42	12,890	27.90	12,657	23.92	10,852	25.91	11,755	25.91	11,755	Set equal to commercial ACL (staff recommendation)
Projected commercial discards	4.43	2,011	5.67	2,574	5.86	2,659	5.80	2,632	5.80	2,632	80.7% of ABC discards (avg. % of dead discards from commercial fishery, 2016-2018)
Commercial quota	**23.98**	**10,879**	**22.23**	**10,083**	**18.06**	**8,194**	**20.11**	**9,123**	**20.11**	**9,123**	Commercial ACT minus discards
Recreational ACL	8.01	3,636	7.87	3,570	6.75	3,061	7.31	3,315	7.31	3,315	22% of ABC (per FMP)
Recreational ACT	8.01	3,636	7.87	3,570	6.75	3,061	7.31	3,315	7.31	3,315	Set equal to recreational ACL (staff recommendation)
Projected recreational discards	0.65	293	1.36	616	1.40	636	1.39	630	1.39	630	19.3% of the ABC discards (avg. % of dead discards from rec. fishery, 2016-2018)
RHL	**7.37**	**3,342**	**6.51**	**2,954**	**5.34**	**2,424**	**5.92**	**2,685**	**5.92**	**2,685**	Recreational ACT minus discards

Introduction

The Magnuson-Stevens Act (MSA) requires that the Council's SSC provide scientific advice for fishery management decisions, including recommendations for ABCs, prevention of overfishing, and achieving maximum sustainable yield (MSY). The SSC must recommend ABCs that address scientific uncertainty. The MSA mandates that the Council's catch limit recommendations cannot exceed the respective ABCs recommended by the SSC.

The Monitoring Committee is responsible for developing recommendations for management measures to achieve the ABCs recommended by the SSC. Specifically, the Monitoring Committee recommends ACTs that are equal to or less than the ACLs to address management uncertainty, and also recommends management measures designed to achieve these ACTs.

Summer flounder, scup, and black sea bass are cooperatively managed by the Council and the Atlantic States Marine Fisheries Commission (the Commission) under a joint Fishery Management Plan (FMP). The Council and the Commission's Summer Flounder, Scup, and Black Sea Bass Management Board meet jointly each year to consider SSC and Monitoring Committee recommendations before deciding on proposed scup catch limits and other scup management measures. The Council and Board may set specifications for scup for up to three years at a time. The Council and Board submit their recommendations to the National Marine Fisheries Service (NMFS), which is responsible for implementation and enforcement of federal fisheries regulations.

The SSC should consider recommending both variable ABCs (using the standard risk policy application) and constant ABCs from 2020-2021 based on recent adjustments to the Council's risk policy that allow for multi-year ABC averaging. On April 11, 2018, the final rule published implementing the Omnibus ABC Framework Adjustment (Framework 11 to the Summer Flounder, Scup, and Black Sea Bass FMP; 83 FR 15511). This framework adjustment allows the SSC to specify constant multi-year ABCs if the average of the probabilities of overfishing meet the Council's risk policy goals and if the resulting ABC always results in less than a 50% probability of overfishing in any one year. The SSC should recommend both variable and averaged ABCs so that the Council can select their preferred approach based on their policy goals. Additional considerations and recommendations for ABC averaging are described in the "Staff ABC Recommendations" section of this memo.

Recent Catch and Landings

In 2018, the commercial scup fishery landed 13.37 million pounds (6,064 mt) of scup, about 55% of the 2018 commercial quota of 23.98 million pounds (10,877 mt, Table 2). According to the 2019 operational assessment, commercial dead discards were 7.26 million pounds (3,293 mt) in 2018, a 30% decrease from 2017, which was the highest since 1981. Total commercial removals in 2018 were 20.63 million pounds (9,358 mt), about 68% of the 2018 commercial ACL (30.53 million pounds/ 13,848 mt). An analysis of commercial scup discards through 2018 will be presented to the SSC, Monitoring Committee and Council and Board during the 2020-2021 specifications process.

According to revised MRIP data, estimated recreational landings in 2018 were 12.98 million pounds (5,888 mt). This estimate should not be compared to the 2018 RHL as the RHL was set using an assessment that did not include the revised MRIP estimates. MRIP staff provided back-calculated estimates based on the old MRIP methodology which suggest that 5.61 million pounds (2,545 mt) of recreational scup harvest would have been estimated for 2018 based on the old MRIP methodology. This is about 76% of the 2018 RHL (7.37 million pounds/ 3,343 mt). According to the 2019 operational assessment, recreational dead discards totaled 1.42 million pounds in 2018 (644 mt).[4] A rough estimate of recreational dead discards in "old MRIP units" can be calculated by dividing the value calculated through the assessment by 2.2, the average ratio of revised to old MRIP estimates during 2013-2017. This results in 645,353 pounds (293 mt) of recreational discards in "old MRIP units." This suggests that total 2018 recreational catch in old MRIP units was about 6.26 million pounds (2,837 mt), about 73% of the recreational ACL (8.61 million pounds/ 3,905 mt). Recreational catch (harvest and discards) in 2018 based on the new estimation methodology was estimated to be 14.40 million pounds (6,532 mt).

The commercial scup quota is allocated among three quota periods: Winter I (January 1 – April 30, allocated 45.11% of the annual quota), Summer (May 1 – September 30, allocated 38.95% of the annual quota), and Winter II (October 1 – December 31, allocated 15.94% of the annual quota).[5] Based on preliminary 2019 dealer data, about 47% of the 2019 Winter I commercial scup quota was landed. As of August 10, 2019, 40% of the Summer commercial scup quota had been landed (Table 3).

Table 2: Scup commercial and recreational landings relative to quotas and RHLs (in millions of pounds), 2014-2018. The RHL overage/underage evaluation is based on recreational harvest estimates using the old MRIP-estimation methodology.

Year	Com. landings	Com. quota	Quota underage	Rec. harvest (old MRIP estimates)	RHL	RHL underage	Rec. harvest (new MRIP estimates)
2014	15.96	21.95	-27%	4.43	7.03	-37%	10.27
2015	17.03	21.23	-20%	4.41	6.80	-35%	12.17
2016	15.76	20.47	-23%	4.26	6.09	-30%	10.00
2017	15.44	18.38	-16%	5.42	5.50	-1%	13.54
2018	13.37	23.98	-44%	5.61	7.37	-24%	12.98

Table 3: Commercial scup landings during the 2019 Winter I and Summer quota periods (as of the week ending August 10, 2019), according to preliminary data from NMFS weekly landings reports. The Winter I quota is a coast-wide quota. The Summer period quota is allocated among states under the Commission's FMP.

State	**Winter I** Landings (pounds) January 1 – April 27, 2019*	**Summer** Landings (pounds) May 1 – August 10, 2019*
Maine	0	0
New Hampshire	0	12
Massachusetts	363,605	502,881
Rhode Island	760,333	1,701,518

[4] A prepublication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

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

Connecticut	529,068	270,742
New York	1,615,910	1,227,983
New Jersey	1,175,271	22,301
Delaware	0	0
Maryland	159,753	118
Virginia	345,483	0
North Carolina	156,011	16,108
Other	0	0
Total landings	**5,105,434**	**3,741,663**
Quota	**10,820,000**	**9,340,986**
Percent of Quota	**47%**	**40%**

*Note: The Winter I period lasts from January 1 through April 30. The 2019 Summer period lasts from May 1 through September 30. Landings in this table are from the NMFS quota monitoring site (https://www.greateratlantic.fisheries.noaa.gov/aps/monitoring/scup.html), which reports landings by week, rather than by quota period; thus, the Winter I landings shown above do not account for 100% of the 2019 Winter I landings.

Table 4: Preliminary recreational scup harvest estimates, waves 1-3 (January - June), 2019. (Source: personal communication, NMFS Fisheries Statistics Division, August 22, 2019; https://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/queries/index). These estimates should not be compared to the 2019 RHL as the 2019 RHL did not account for the new MRIP estimation methodology.

State	Harvest (lb)
ME	0
NH	0
MA	582,759
RI	515,947
CT	586,141
NY	2,321,152
NJ	249
DE	0
MD	0
VA	0
NC	2,523
Total	**4,008,771**

Stock Status and Biological Reference Points

A scup operational stock assessment was peer reviewed and accepted in August 2019. This assessment retained the model structure of the previous benchmark stock assessment, completed in 2015,[6] and incorporated fishery catch and fishery-independent survey data through 2018, including revised recreational data provided by MRIP for 1989-2018. The following information is based on the prepublication draft of the August 2019 operational assessment prepared for use by the Council and SSC.[7]

Updated F40% and corresponding SSB40% proxy biological reference points from the 2019 operational stock assessment include a fishing mortality reference point of F_{MSY} proxy = $F_{40\%}$ = 0.215, a biomass reference point of SSB_{MSY} proxy = $SSB_{40\%}$ = 207.279 million pounds (94,020 mt), and a minimum biomass threshold of ½ SSB_{MSY} proxy = ½ $SSB_{40\%}$ = 103.639 million pounds (47,010 mt, Table 5).

The scup stock north of Cape Hatteras, North Carolina extending north to the US-Canada border was not overfished and overfishing was not occurring in 2018 compared to the revised reference points. Spawning stock biomass (SSB) was estimated to be about 411 million pounds (186,578 mt) in 2018, about 2 times the SSB_{MSY} proxy reference point (i.e. $SSB_{40\%}$) of 207 million pounds (94,020 mt, Figure 1). Fishing mortality on fully selected age 3 scup was 0.158 in 2018, about 73% of the F_{MSY} proxy reference point ($F_{40\%}$) of 0.215 (Figure 2). The 2015 year class is estimated to be the largest in the time series at 326 million fish, while the 2016-2018 year classes are estimated to be below average at 112 million fish, 93 million fish and 83 million fish, respectively (Figure 1).

[6] 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html

[7] Available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

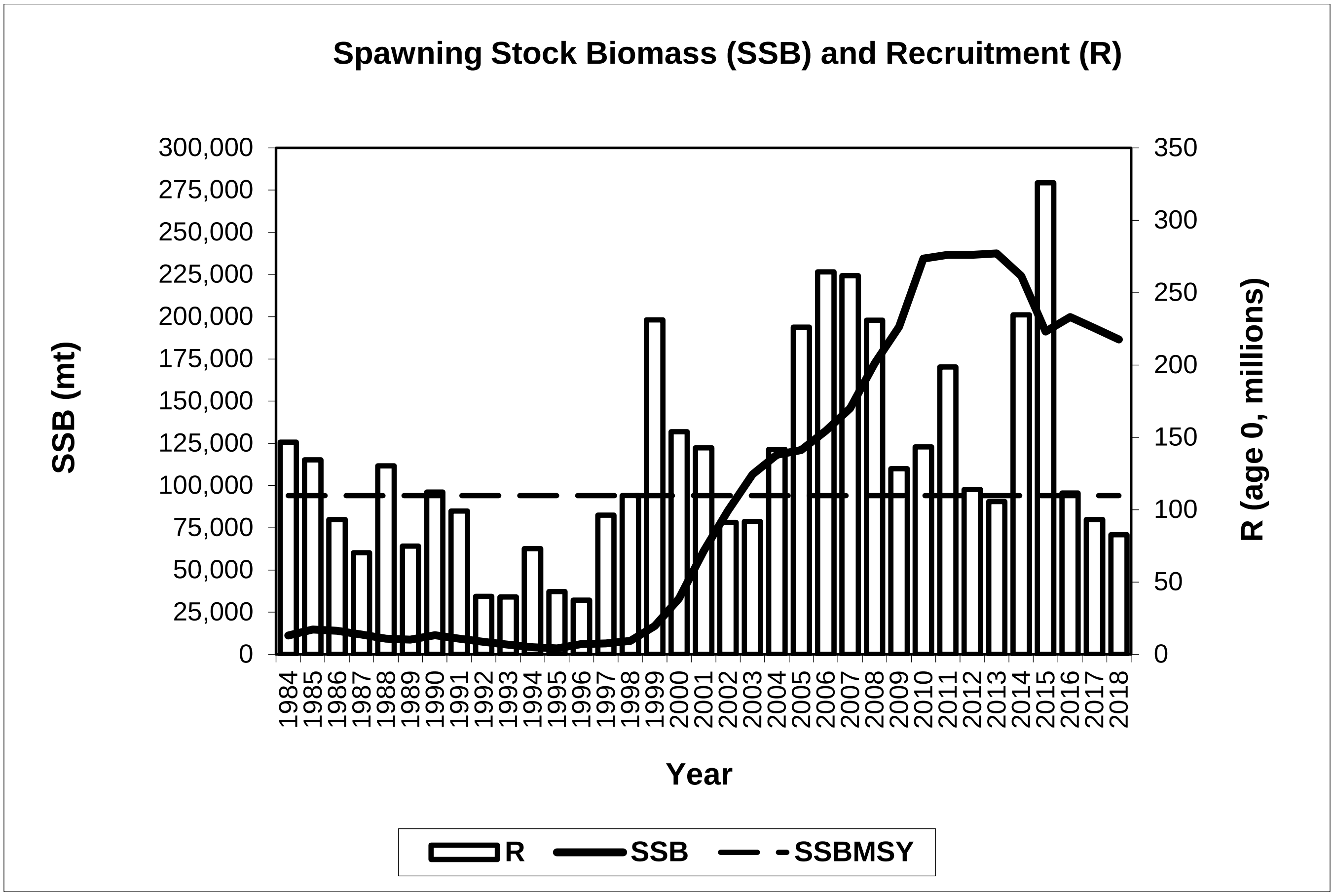

Figure 1: Scup SSB and recruitment at age 0, 1984-2018 from the 2019 operational stock assessment.

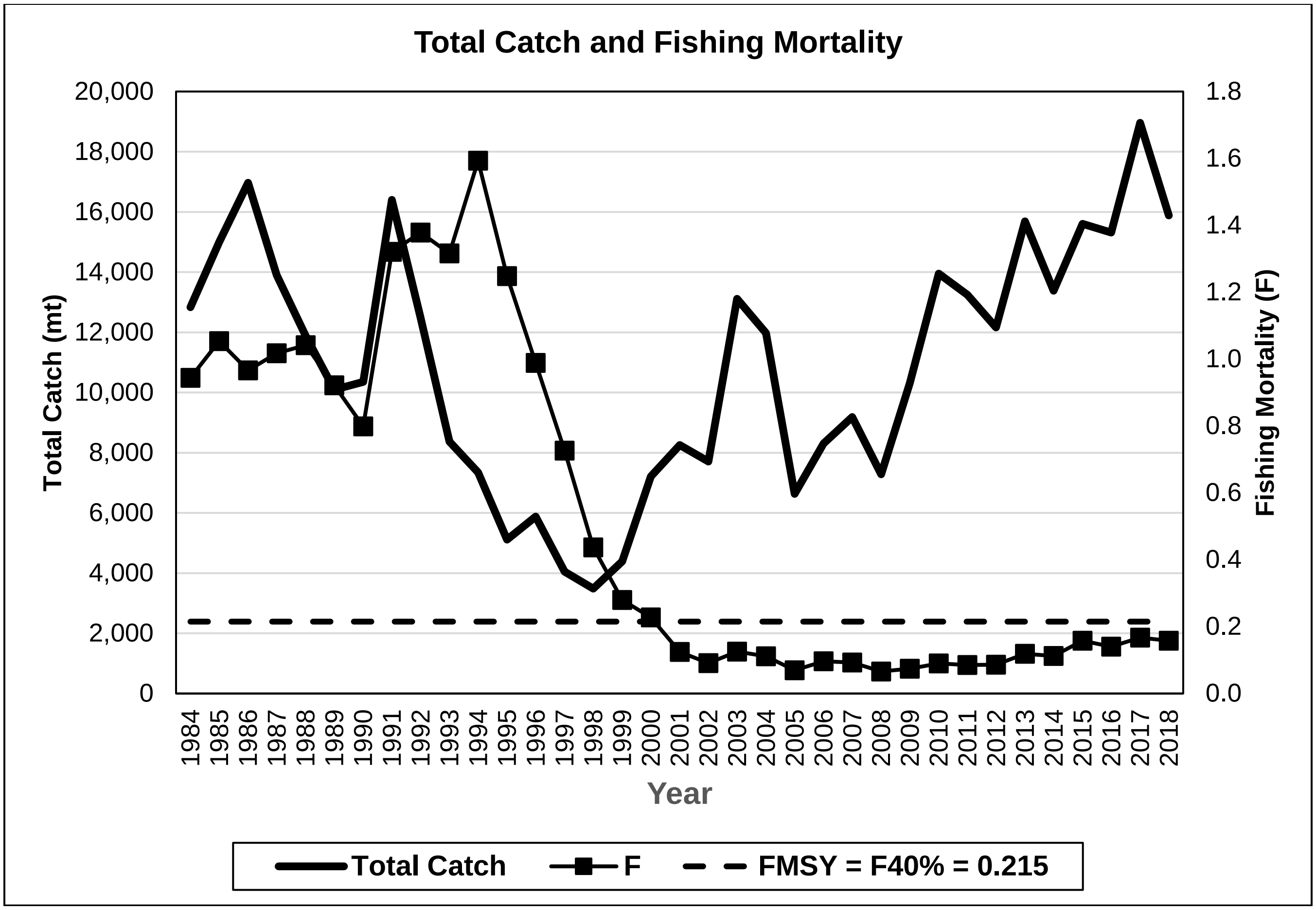

Figure 2: Scup total catch and fishing mortality, 1984-2018 from the 2019 operational stock assessment.

Table 5: Scup biological reference points from the 2015 benchmark stock assessment and 2019 operational stock assessment.

Reference Points and terminal year SSB and F estimates	**2015 benchmark stock assessment**[8] Data through 2014	**2019 operational stock assessment**[9] Data through 2018
$SSB_{MSY\ proxy}$ = $SSB_{40\%}$ (biomass target)	192.47 mil lb/ 87,302 mt	207.28 mil lb/ 94,020 mt
½ SSB_{MSY} (biomass threshold defining an overfished status)	96.23 mil lb/ 43,651 mt	103.639 mil lb/ 47,010 mt
Terminal year SSB	403.26 mil lb/ 182,915 mt (2014) 210% of SSB_{MSY}	411 mil lb/186,578 mt (2018) 198% of SSB_{MSY}
$F_{MSY\ proxy}$ = $F_{40\%}$ (threshold defining	0.220	0.215

[8] 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html

[9] A prepublication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

overfishing)		
Terminal year F	0.127 (2014) 42% below F_{MSY}	0.158 (2018) 27% below F_{MSY}

Review of Prior SSC Recommendations

In 2015, the Council and Board set scup specifications for 2016-2018 based on the recommendations of the SSC and Monitoring Committee. The SSC derived their ABC recommendations from the Council's risk policy and OFL projections provided with the 2015 benchmark stock assessment.[10] These projections assumed that 75% of the 2015 ABC would be caught and that F in 2016 and 2017 would be 0.22 (F_{MSY}). The SSC assigned a 60% coefficient of variation (CV) to the OFL. The SSC used a probability of overfishing (p*) of 40% to derive the 2016-2018 ABCs, based on the Council's risk policy for a species with a typical life history.

The SSC revised their 2018 OFL and ABC recommendations and adopted a 2019 OFL and ABC in July 2018 after reviewing a stock assessment update provided by the NEFSC.[11] These ABC recommendations were based on biomass projections provided with the assessment update. The projections assumed, based on patterns in the 2016 fishery, that 87% of the 2017 ABC would be caught and F in 2018 and 2019 would be 0.22 (i.e. the F_{MSY} proxy).The projections also used an OFL CV of 60% and a 40% probability of overfishing, based on the SSC's previous OFL CV recommendation and application of the Council's risk policy. This resulted in a 2019 OFL of 41.03 million pounds (18,612 mt) and a 2019 ABC of 36.43 million pounds (16,525 mt).

The SSC considered the following to be the most significant sources of uncertainty in the 2015 benchmark assessment:[12]

- 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.
- Uncertainty exists with respect to the estimate of natural mortality used in the assessment.
- Uncertainty exists as to whether the MSY proxies ($SSB_{40\%}$, $F_{40\%}$) selected and their precisions are appropriate for this stock.
- The SSC assumed that OFL has a lognormal distribution with a 60% CV, based on a meta-analysis of survey and statistical catch at age model accuracies.
- Survey indices are particularly sensitive to scup availability, which results in high inter-annual variability. Efforts were made to address this question in the Stock Assessment Workshop and Stock Assessment Review Committee (SAW/SARC) that should be continued; and
- The projection on which the ABC was determined assumes that the quotas would be landed in 2016, 2017, and 2018.

[10] 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html
[11] Scup Assessment Update for 2017 is available at: http://www.mafmc.org/ssc-meetings/2017/july-19-20
[12] A summary of the July 2015 SSC meeting is available at: http://www.mafmc.org/ssc-meetings/2015/july-21-23

In July 2018, the SSC reviewed their recommended 2019 ABC and noted that the biomass projections, which served as the basis for the 2019 ABC, assumed that 87% of the 2017 ABC would be caught. However, preliminary catch information indicated that 113% of the 2017 ABC was caught. The SSC agreed that this was a source of implementation error in setting the 2019 ABC.[13]

2020-2021 OFL and ABC Projections

Tables 6 and 7 show projected OFLs and ABCs based on the standard and average approaches, respectively. The projections assume the 2019 ABC of 16,525 mt (36.43 million pounds) with recreational catch in 'New' MRIP equivalents will be taken in 2019, providing an estimated catch of 20,711 mt (45.66 million pounds) in 2019. OFL Total Catches are catches in each year fishing at FMSY = 0.215, prior to calculation of the associated annual ABC. The projections sample from the estimated recruitment for 1984-2018. The ABC projections are based on application of the Council's risk policy for a stock with a typical life history, resulting in an ABC P* of 40% for the standard ABC approach and an average P* of 40% (2020-2021) for the average ABC approach. A CV of 60% was applied to the OFL, consistent with past SSC recommendations.

Table 6: OFL and ABC projections from the 2019 operational stock assessment using the standard ABC approach. Note: 2019 ABC total catch represents expected catch in 2019 (under revised MRIP estimates), not the implemented 2019 ABC (Source: personal communication, Mark Terceiro, Northeast Fisheries Science Center).

Year	OFL total catch		ABC total catch		ABC F	ABC P*	SSB	
	mil lb	mt	mil lb	mt			mil lb	mt
2019	--	--	45.66	20,711	0.208	--	403.75	183,137
2020	41.17	18,674	35.77	16,227	0.185	0.40	362.73	164,530
2021	35.30	16,012	30.67	13,913	0.185	0.40	335.80	152,318

Table 7: OFL and ABC projections from the 2019 operational stock assessment using the average ABC approach. Note: 2019 ABC total catch represents expected catch in 2019 (under revised MRIP estimates), not the implemented 2019 ABC (Source: personal communication, Mark Terceiro, Northeast Fisheries Science Center).

Year	OFL total catch		ABC total catch		ABC F	ABC P*	SSB	
	mil lb	mt	mil lb	mt			mil lb	mt
2019	--	--	45.66	20,711	0.208	--	403.75	183,137
2020	41.17	18,674	33.22	15,070	0.171	0.35	363.76	164,997
2021	35.62	16,159	33.22	15,070	0.20	0.45	337.37	153,027

Staff Recommendations for 2020-2021 ABCs

The SSC has been asked to recommend two sets of ABCs for 2020-2021, one based on the standard approach and one based on the averaging approach. The averaged ABC approach would allow for stability in catch and landings limits across two years and would allow for a higher 2021 ABC than the

[13] A summary of the July 2018 SSC meeting is available at: http://www.mafmc.org/ssc-meetings/2018/july-17-18

standard approach (Table 1); however, it would require a lower 2020 ABC than under the standard approach. The averaged approach results in a P* of 0.35 in 2020 and 0.45 in 2021, resulting in an average P* of 0.40 from 2020-2021 (Table 7). The projected spawning stock biomass trajectory is approximately the same in either scenario (Table 6 and Table 7). Under the standard ABC approach, the 2020 ABC (35.77 mil lb/ 16,227 mt) would be a 2% decrease from the current interim 2020 ABC (36.43 mil lb/ 16,525 mt). The 2021 ABC (30.67 mil lb/13,913 mt) would be 14% lower than the revised 2020 ABC and 16% lower than the current interim ABC. Under the average ABC approach, the ABCs in 2020 and 2021 would be identical at 33.22 million pounds (15,070 mt, a 9% decrease compared to the current interim 2020 ABC). There are tradeoffs to both ABC approaches. The higher 2020 ABC using the standard approach will require less restriction on the recreational fishery in 2020 compared to the averaged approach and may allow time to address potential allocation issues associated with the much higher recreational harvest than previously known (e.g. Table 2). However, it will require a greater restriction of total catch in 2021 compared to the averaged approach. Staff recommend the standard ABC approach.

Updated estimates of SSB, F, and recruitment are expected to be available in 2021 to inform 2022-2023 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 2021 catch and landings limits will be updated in 2020 based on biological, fishery, or survey data.

Other Management Measures

Commercial and Recreational Annual Catch Limits (ACLs)

As specified in the FMP, 78% of the ABC is allocated to the commercial fishery as a commercial ACL and 22% is allocated to the recreational fishery as a recreational ACL (Figure 3). ACLs include both landings and discards. The ABC allocation percentages were implemented through Amendment 8 (1996) and first came into effect in 1997. These allocations were based on the proportions of commercial and recreational catch during 1988-1992 and cannot be modified without an FMP action such as an amendment.

If the SSC adopts the ABCs recommended in the previous section, the standard ABC approach would result in a 2020 commercial ACL of 27.90 million pounds (12,657 mt), a 2020 recreational ACL of 7.87 million pounds (3,570 mt), a 2021 commercial ACL of 23.92 million pounds (10,852 mt), and a 2021 recreational ACL of 6.75 million pounds (3,061 mt).

The averaged ABC approach would result in a 2020 and 2021 commercial ACL of 25.91 million pounds (11,755 mt) and a 2020 and 2021 recreational ACL of 7.31 million pounds (3,315 mt).

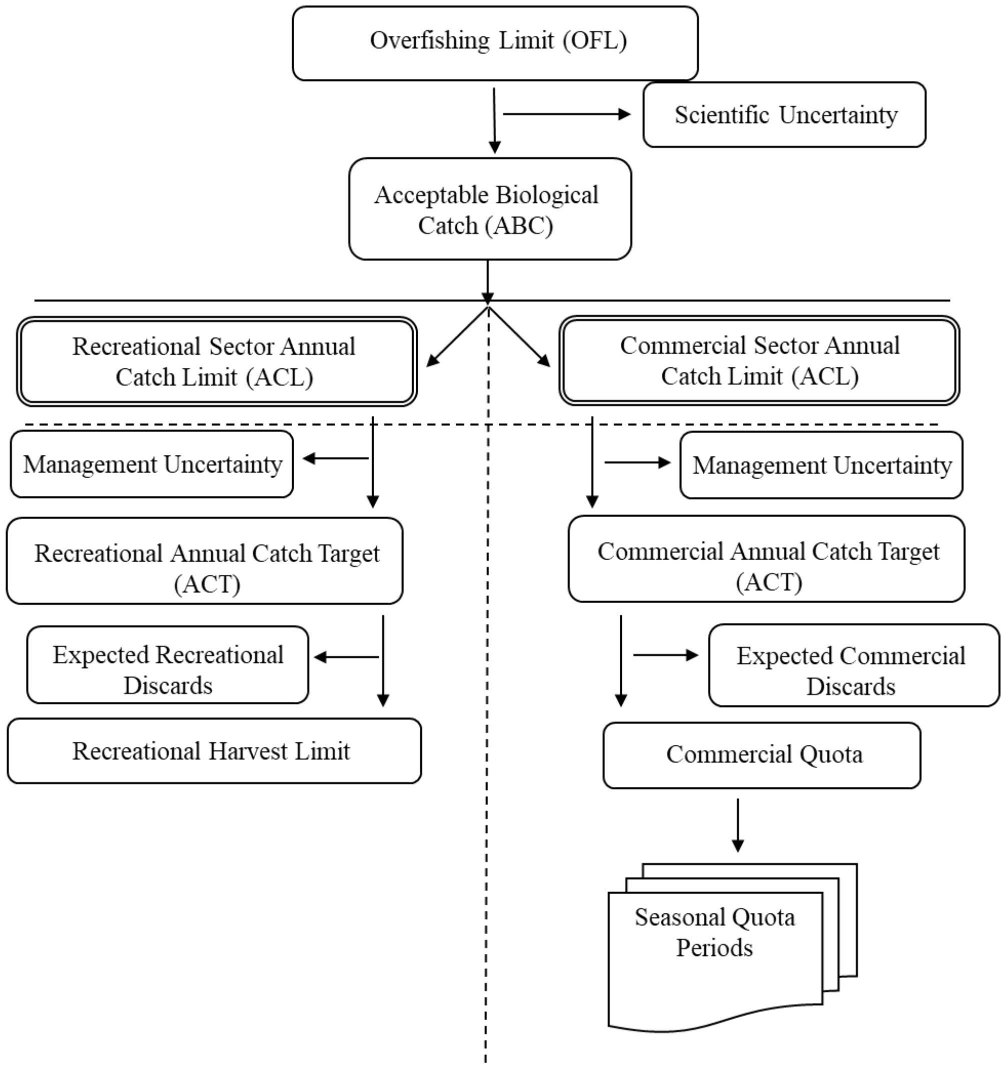

Figure 3: Scup catch and landings limit calculation methodology.

Annual Catch Targets (ACTs)

The Monitoring Committee recommends ACTs for the Council and Board's consideration. ACTs may be either equal to the ACLs or reduced from the ACLs to account for management uncertainty. Management uncertainty can include uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e. estimation errors). This can occur due to a lack of sufficient information about catch (e.g. due to late reporting, under-reporting, 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 sector-specific landings performance for recent years is shown in Table 2; however, note that the recreational fishery data includes the old MRIP estimates given that past RHLs were set with assessment information based on the pre-calibration recreational time series. For this reason, the new MRIP data cannot reasonably be compared to past RHLs. From 2014-2018, commercial and recreational landings have been consistently below the quota and RHL. The commercial quota monitoring system is timely and typically successful in constraining landings to the commercial quota.

In recent years, the Monitoring Committee and the Commission's Technical Committee have spent a great deal of time developing new and alternative methodologies to evaluate management uncertainty in the recreational fishery, the predictability and uncertainty in recreational catch estimates, and the influence of recreational regulations on harvest. These Committees plan to continue to work to make improvements to the evaluation process for recreational measures. For 2020, staff recommend no reduction in catch from the recreational or commercial ACLs so that each sector's ACT is set equal to the ACL.

Commercial Quotas and Recreational Harvest Limits (RHLs)

Commercial scup quotas and RHLs are calculated by subtracting projected discards from the sector-specific ACTs. Projected discards from the stock assessment are apportioned between commercial and recreational fisheries using the average percent of dead discards attributable to each sector over the past three years (Figure 4, Table 1). This requires the assumption that patterns in discards will be similar in future years as in past years. Changes in regulations, availability, year class strength, market demand, and other factors can impact discards from one year to the next. The Monitoring Committee should discuss the methodology for calculating expected discards during their September 2019 meeting.

According to the 2019 operational stock assessment, commercial discards accounted for an average of 80.7% and recreational dead discards accounted for an average of 19.3% of all dead discards from 2016 through 2018. The increase in the proportion attributable to the recreational fishery compared to previous years (e.g., 12.7% during 2014-2016)[14] is based in part on the revisions to the MRIP data which suggest that recreational catch, harvest, and discards are higher than previously thought.

After subtracting projected discards from the recommended ACTs, the recommended commercial quotas under the standard ABC approach are 22.23 million pounds (10,083 mt) in 2020 and 18.06 million pounds (8,194 mt) in 2021 (Table 1). Under these recommended commercial quotas, the 2020 Winter I quota would be 10.03 million pounds (4,549 mt), the Summer quota would be 8.66 million pounds (3,927 mt), and the Winter II quota would be 3.55 million pounds (1,608 mt). The 2021 Winter I quota would be 8.15 million pounds (3,693 mt), the Summer quota would be 7.04 million pounds (3,191 mt), and the Winter II quota would be 2.88 million pounds (1,306 mt). All Winter II quotas are prior to any quota rollover from Winter I, if applicable.

In the projections provided by the NEFSC for the average approach, the projected ABC discards vary slightly in each year, resulting in differing projected discards by sector and different landings limits in each year. Because the difference is very minor, for the sake of simplicity and stability, staff recommend using the average discards from 2020-2021, which would produce identical constant catch and landings limits for each sector in both years (Table 1). The Monitoring Committee should consider whether this approach is appropriate. The commercial quotas under the average approach would be 20.11 million pounds (9,123 mt) in 2020 and 2021 (Table 1). Under these commercial quotas, the 2020 and 2021 Winter I quota would be 9.07 million pounds (4,115 mt), the Summer quota would be 7.83 million pounds (3,553 mt), and the Winter II quota would be 3.21 million pounds (1,455 mt). All Winter II quotas are prior to any quota rollover from Winter I, if applicable.

After subtracting projected discards from the recommended ACTs, under the standard ABC approach

[14] Scup Assessment Update for 2017 is available at: http://www.mafmc.org/ssc-meetings/2017/july-19-20

the recommended RHLs are 6.51 million pounds (2,954 mt) in 2020 and 5.34 million pounds (2,424 mt) in 2021. Under the average ABC approach and averaging the 2020 and 2021 projected ABC discards, the recommended RHL for 2020 and 2021 is 5.92 million pounds (2,685 mt, Table 1). Under both the standard and average approach, the RHLs will be too low to accommodate recent patterns in recreational landings based on the new MRIP data (e.g. Table 2).

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 limits.

Most commercial scup trips in recent years landed well below the Winter I and Winter II possession limits. These possession limits have not been modified since 2012, when the Winter I limit increased from 30,000 to 50,000 pounds and 2014 when the initial Winter II limit increased from 2,000 to 12,000 pounds. In 2018, the Council and Commission moved October from the Summer period to the Winter II period, resulting in a higher trip limit being in effect during that month. Staff recommend no changes to the Winter I and Winter II possession limits for 2020.

Commercial Minimum Fish Size

The minimum size for retention of scup in the commercial fishery is 9 inches total length. This regulation applies to all commercial landings of scup, including landings of incidental catch. This measure was first implemented in 1996, when scup were first managed by the Council and Commission. The Council and Board considered modifying this measure in 2005, 2012, and in 2015. After reviewing this measure in detail 2015, the Monitoring Committee, Council, and Board all recommended no changes. The rationale for this recommendation is described in the Summer Founder, Scup, and Black Sea Bass Commercial Management Measures Review.[15] In the past, advisors have expressed differing opinions on the commercial minimum fish size for scup. Staff recommend that this regulation remain unchanged in 2020.

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 May 1 through August 31 must use a minimum mesh size of 5.0 inches. These regulations were modified in 2015 (effective in 2016) and 2018 (effective in 2019). In late 2015, the Council approved an increase in the November-April incidental limit from 500 to 1,000 pounds in recognition of the substantial increase in SSB and expansion of the age structure of the population since this measure was last modified in 2004. In August 2019, the Council approved an increase in the incidental scup possession limit during April 15-June 15 to 2,000 pounds to decrease discards in the spring inshore squid fisheries.

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[15] The Summer Flounder, Scup, and Black Sea Bass Commercial Management Measures Review is available at: http://www.mafmc.org/briefing/december-2015

The Council recently funded a project which analyzed the selectivity of multiple codend mesh sizes relative to summer flounder, black sea bass and scup retention in the commercial bottom trawl fishery in the Mid-Atlantic region. Results confirmed that the current minimum mesh sizes for all three species are effective at releasing most fish smaller than the commercial minimum sizes (i.e., 14 inches total length for summer flounder, 9 inches total length for scup, and 11 inches total length for black sea bass). The study was not able to identify a common mesh size for all three species that would be effective at minimizing discards under the current minimum fish 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.

The Monitoring Committee reviewed the results of this study in 2018 and recommended no changes to the commercial minimum mesh sizes for 2019. They recommended clarification of the objectives of the Council regarding consideration the mesh sizes (e.g., establishing a common minimum mesh size, minimizing discards, and/or maintaining or increasing catches of legal-sized fish). Input from the commercial fishing industry should be sought before any minimum mesh size changes are considered.

Staff will continue to work with the Monitoring Committee and Advisory Panel in 2019 to further analyze and consider potential changes to mesh size regulations. <u>Currently, staff recommend no changes to the scup minimum mesh sizes and associated possession limits for 2020</u>.

Commercial Pot and Trap Regulations

NMFS Vessel Trip Report data show that pots/traps accounted for about 1.7% of scup commercial landings in 2018. Pots and traps used in the commercial scup fishery must have either a circular escape vent with a 3.1 inch minimum diameter or square or rectangular escape vents with each side being at least 2.25 inches in length. The Council and Commission hosted a workshop in 2005 to review several studies on vent size. Workshop participants did not recommend any changes in the vent sizes for the commercial scup fishery. The Monitoring Committee reviewed these measures in 2015 and recommend no changes. <u>Staff recommend no changes to these measures for 2020.</u>

Recreational Seasons, Possession Limits, and Minimum Size

The Council and Board will discuss 2020 recreational scup seasons, possession limits, and minimum fish sizes at their joint meeting in December 2019. Data from the first four "waves" (i.e. the two-month reporting increments for recreational data) of 2019 recreational landings are expected to be available in October 2019. The Monitoring Committee will meet in November to review these landings data and make recommendations for any necessary changes in recreational management measures. Staff have no recommendations for 2020 recreational management measures at this time. However, it should be noted that the potential 2020-2021 RHLs described above will likely require notable restrictions in the recreational fishery due to the adoption of the revised MRIP data and the fixed commercial/recreational ACL allocation percentages defined in the FMP.

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

August 2019

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 August 29, 2019 to review the Fishery Information Documents and develop the following Fishery Performance Report for the 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. A series of trigger questions listed below were posed to the AP to generate discussion of observations in the summer flounder, scup, and black sea bass fisheries. Please note: Advisor comments described below are not necessarily consensus or majority statements.

Council Advisory Panel members present: Joan Berko (NJ), Jeff Deem (VA), James Fletcher (NC), Jeff Gutman (NJ), Howard King (MD), Michael Plaia* (CT), Chris Spies (NY), Doug Zemeckis (NJ)

Commission Advisory Panel members present: Paul Caruso (MA), Greg DiDomenico (NJ), Marc Hoffman (NY), Michael Plaia* (RI), Jimmy Ruhle (NC)

*Serves on both Council and Commission Advisory Panels.

Others present: Julia Beaty (MAFMC Staff), John Boreman (MAFMC SSC Chair), Dustin Colson Leaning (ASMFC Staff), Karson Coutré (MAFMC Staff), Kiley Dancy (MAFMC Staff), Mark Holliday (MAFMC SSC), Michael Luisi (MAFMC Chair), Tom Miller (MAFMC SSC vice chair), Kirby Rootes-Murdy (ASMFC Staff), Caitlin Starks (ASMFC Staff)

Trigger 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?

General Comments

Recreational Data Concerns

Multiple advisors said they had no faith in the data from the Marine Recreational Information Program (MRIP), which they see as inaccurate and fundamentally flawed. One advisor said people concerned about MRIP should focus on the high percent standard errors (PSEs) of the estimates being used.

One advisor stated that MRIP uses an estimated number of anglers in New York that is at least twice the true number. He also stated that MRIP has refused to tell him exactly how many anglers they are estimating for New York. Staff and others clarified that MRIP estimates effort in number of trips and does not use a specific number of anglers to generate catch and harvest estimates. Multiple advisors said better information is needed to help explain the MRIP methodologies to the fishing public, and MRIP staff could be more helpful in explaining how estimates are scaled up from the intercept survey.

One advisor questioned whether the MRIP numbers reflect catch from anglers going back to private docks, since they would not be accounted for in the intercept survey. He believes that recreational harvest is underestimated as a result. Staff responded that the effort of these anglers should be reflected in the effort survey, and assuming their catch rates are similar to anglers intercepted at public sites, the MRIP estimates should account for this catch. In response, this advisor said if law enforcement is less likely to visit private docks, the catch rates would be much different than at public sites. He also questioned why the Council and Board have not pursued the use of electronic reporting via mobile apps for private recreational anglers.

Another advisor noted that in New York, it seems that MRIP intercept activity disproportionately occurs in the Montauk area, which leads to overestimation of the state-wide catch and harvest.

One advisor expressed frustration that congressionally mandated revisions to the MRIP program took more than a decade to complete.

One advisor said that with the new MRIP data, the Council should consider whether past biomass targets for all species were appropriate. Another advisor responded that the biomass target is updated with every stock assessment and the most recent target accounts for the transition to the new MRIP data.

Monitoring and Reporting

One advisor said issues with uncertain recreational estimates could be addressed by a complete overhaul of the permitting, monitoring, and reporting process. He added that this is needed for both sectors. He said many commercial fisheries have issues with open access permits that are not monitored the way they should be, and many limited access permits that are not used. The Council and Board should address latent effort in commercial and recreational permits at both the state and federal levels. Federal for-hire permit holders are now required to report electronically, but there are hundreds more permits issued than are actually reporting, indicating latent permits. In addition, this advisor suggested that there appears to be an issue in the state of New York where "for-hire guides" on private boats are not held to the same reporting requirements as other for-hire vessels and are flying under the radar.

In response to comments about permit holders not reporting landings, a few AP members noted that there used to be a requirement to submit "did not fish" reports, but that requirement was recently deemed unnecessary and eliminated.

One AP member said he gets every permit available even if he does not currently use it, due to constantly changing regulations for different species and the possibility of losing permits in the future due to limited access programs.

One advisor said the organization he represents has for many years asked the Council and Commission to require the same level of reporting in the recreational fishery as in the commercial fishery (e.g., vessel and operator permits, mandatory vessel trip reports for all fishing trips). He added that challenges associated with the transition to the new MRIP data could have been avoided if better data were reported by the recreational fisheries. Another advisor agreed with the idea of enhancing monitoring and reporting, stating that he does not believe the recreational fishery is catching what MRIP is estimating, and recreational accounting could be improved. However, another advisor disagreed with the recommendation for mandatory private angler reporting, arguing that private anglers fish for fun and should not be burdened with requirements to report their catch from every trip. In addition, such reports may not be accurate as private anglers often do not keep accurate counts of their catches.

Summer Flounder

Market/Economic Conditions

One advisor noted that in the last two or three years, the price per pound received for jumbo summer flounder (about 4 pounds or larger) has decreased, and vessels are now getting about 50 cents less per pound for jumbos compared to smaller sizes. He believes that market conditions changed as the result of drops in quotas over the past few years, and market demand is currently higher for smaller summer flounder that fit better on a plate. As a result, some vessels have been discarding more jumbo fluke than in years past, which is not likely captured in any management data streams. This advisor noted that this is occurring on vessels that have conveyer sorting systems, and the fish are generally released alive and in good condition.

Environmental Conditions

One advisor noted that last year, the fall NEAMAP survey hit a dead zone, from approximately Shrewsbury Rocks to the Delaware Bay, where salinity and dissolved oxygen were way down in an offshore area. Water quality plays a role in what is happening the summer flounder fishery. The timing of the trawl surveys needs to be improved, as spawning behavior has changed. For example, off Ocean City there are lots of small summer flounder being caught in other smaller mesh fisheries, and the surveys are not capturing it. There has been a big uptick in landings from the Baltimore Canyon area indicating a recruitment event, but this has been missed by trawl surveys.

An advisor from Virginia noted that when you compare this year's recreational estimates to last year’s, they are likely to be lower, given that 2019 had a colder and wetter spring.

Management Issues

Advisors discussed the revised MRIP estimates for summer flounder. One advisor said the idea that the shore mode caught twice as many keeper fluke compared to party boats is ludicrous. Another AP member noted that in the late 1990s and early 2000s, recreational overages were very large, so even under the old estimates, recreational harvest was higher in some years than the 40% allocated to the recreational fishery in the Fishery Management Plan. The new MRIP estimates don't necessarily reflect an overall change in the proportions of recreational and commercial harvest, but instead reflect continued fluctuations of those harvest proportions over time.

Another advisor stated that he perceives summer flounder management to be a failure, particularly recreational management. In the 1990s when size and bag limits were first implemented for the recreational fishery, stock size increased through the early 2000s. When size limits went too high, the stock started to decline again. This advisor questioned whether management over the last decade has truly been helpful in rebuilding and suggested that managers more seriously look at implementing a smaller minimum size in the recreational fishery and/or managing based on harvested number of fish instead of pounds. Anglers are very unhappy having to throw back summer flounder all day and with having to go further and further offshore to catch keepers. If management were based on a bag limit alone or a bag limit in combination with a smaller minimum size, anglers would catch what they can keep and then go home. This advisor believed that management should let people take home more fish and reduce the number of recreational discards, and that one strategy to do this was to go back to measures that were implemented during rebuilding. This advisor requested that for the next meeting, advisors review more information on the proportion of harvest vs. discards in recent years compared to during the rebuilding process and the peak years of stock biomass.

Other advisors also expressed general dissatisfaction with the high size limits used to manage the summer flounder recreational fishery. One noted that as seen with the recent examples of older fish described in the 2019 data update, summer flounder are now dying of old age because anglers are not allowed to keep them. There may be environmental factors that have changed recruitment, but managers should go back to allowing anglers to keep more and smaller fish.

Two advisors discussed their support for exploring a cumulative length limit (i.e., a total length limit where anglers can keep up to a specified total number of inches of fish) with mandatory retention of all fish caught until the length limit is reached. One advisor said this has been brought up for years and law enforcement has said it's not enforceable. Millions of dollars have been spent on studying the survival of discards, but the current limits are creating many more discards than necessary. He requested that the idea of a total length limit be revisited with a trial run. Managers need to consider anglers fishing from the beach trying to catch a meal.

Another advisor responded that on head boats, a cumulative length limit would be very difficult to enforce given that it's difficult to control passenger behavior to that degree. Groups of anglers comingle their catch in coolers and it would be very difficult to keep track of individual total length limits with that many anglers on board. In addition, it would be difficult to enforce in states that allow filleting at sea. Another advisor responded that different sectors of the recreational fleet could have different regulations and that this did not necessarily need to apply to party boats.

One advisor said we do not need more discard mortality studies; instead the fishery should be managed with 100% retention and a prohibition on discards. In response to this, another advisor stated that this would be impossible because managers cannot compel people to keep fish that they don't want or can't hold, making this type of system difficult to monitor and enforce.

One advisor requested flexibility in the size limit regulations for the recreational fishery in the upper Chesapeake Bay so that anglers there can have the opportunity to land some summer flounder. This would involve different size limits by area similar to what New Jersey has for the Delaware Bay.

General Fishing Trends

A recreational advisor said, in the last few years, anglers have been seeing fewer summer flounder inshore in the recreational fishery in Massachusetts, likely because of higher water temperatures. Legal sized fish are now mostly offshore. Because of the higher size limit for the recreational fishery, the commercial fishery essentially gets a two-year head start on catching the summer flounder in state waters. This advisor also noted that while Massachusetts quota allocations were set during a time when the fishery was doing better in the area, the commercial quota now may be too high for the overall biomass available, thus hindering access to legal sized fish for the recreational fishery.

Another advisor noted that summer flounder fishing in southern New Jersey has been very tough recently. An AP member from New York indicated that some areas are having a decent fluke season (such as off Montauk), but others have had a poor season (such as in Sheepshead Bay). He also has not heard good fishing reports from the north side of Long Island Sound.

An advisor from Rhode Island indicated that keeper fluke have been very difficult to find near Block Island.

Research Priorities

One advisor requested more research on discard survival, stating that he does not believe the currently assumed discard mortality rates. Studies have shown that survivability varies based on temperature and other factors, and he noted the need to consider how environmental conditions and depth can affect mortality so that those factors can be built into discard mortality calculations.

In response, another advisor said more tagging research would be helpful to evaluate discard mortality rates. Studies that use cages can bias results because the fish don't experience normal rates of predation or normal feeding opportunities. Tagging studies can show what happens when fish are released and allowed to recover naturally.

Another advisor requested research into recreational gear impacts on discard mortality, including how the use of circle hooks impacts mortality.

One advisor thought that a study on the history of management and its successes and failures would be beneficial, in particular for the recreational fishery given the variety of factors that influence angler behavior and effort from year to year. Staff responded that a recent Council-funded recreational summer flounder Management Strategy Evaluation addresses some of those issues but may not fully address what this advisor suggested.

One advisor requested a full audit of fishery participation in the summer flounder recreational and commercial fisheries, including reporting requirements for all participants. An SSC member stated that managers have been trying to improve information on fishery participation, and such an undertaking would likely be useful. Some fishery participants used to apply for permits just to stay informed on the fisheries even if the permits were not used, but the management and permitting environment today is different and further evaluation of latent permits may be useful.

Finally, one advisor noted that there should be more research into spawning behavior and stock structure for summer flounder to update older studies.

Scup

Market/Economic Conditions

Multiple advisors noted that scup were removed from the market for too long during rebuilding and other fish such as croaker and tilapia took its place. Before rebuilding, fishermen would get over $2.00/lb for jumbo scup. One advisor said he would like to see a time series of the amount and price of imported tilapia. He said the price of tilapia drives the price of scup, while changing seasons and closures also affects the market.

One advisor noted that in Rhode Island there are many efforts to increase the market for scup and try to make it more appealing to the public. Another advisor added that the Rhode Island Commercial Fishermen's Association is experimenting with different ways to clean fish to get the bones out and market filets, etc.

One advisor said that the winter scup fishery has become predictable and east coast ethnic grocery stores rely on scup on a weekly basis. The higher demand and better prices are helpful for New Jersey scup fishermen.

Recreational Fishery

Multiple advisors noted that angler interest is currently driving the recreational scup harvest. One advisor said that in the north, no one is fishing to catch their limit because people don't want to keep that many fish. The season is essentially wide open and the bag limit is high. The for-hire fishery sometimes uses their full bag limit but others are not really interested.

One advisor said that the actual fishing season is much shorter than the open season because in October the scup move to deeper water. Another advisor said the winter recreational fishery is really important to party boats in Rhode Island. One advisor added that charter boats use small scup for striped bass bait but otherwise scup are only targeted by party boats.

One advisor felt that the shore mode estimate of scup harvest in 2018 of 43% was way too high and the revised MRIP estimates should be disregarded.

Environmental Conditions

One advisor asked how SSB could be going down when there was such a high 2015 year class. Another advisor responded that a high number of recruits doesn't necessarily add up to much in pounds of biomass. Staff also added that discards or density dependent effects can play a role in a strong year class not resulting in higher SSB.

One advisor noted that in 2019, statistical area 626 had a significant number of trawl caught scup for the first time in 18 years. These fish were probably landed in Chincoteague or Hampton, VA and show that the northeast migration is reversible.

One advisor said a mild fall meant that the fish were never driven offshore.

Management Issues

Effective in 2018, the commercial scup quota periods were modified so that October was moved from the Summer quota period to Winter II. Several advisors spoke favorably about this modification and one advisor noted that it probably had some effect on reducing discards and stabilizing the fishery. Another advisor said it may not have had much of an effect this year due to market price.

One advisor asked if the 50,000 lb trip limit causes the price to fall so much that dealers won't accept scup. Multiple advisors said dealers would still accept scup and one added that they just wouldn't pay much. One advisor said the50,000 lb trip limit was probably the best thing that had happened to owner/operators of trawlers in New Jersey and New York.

Research Priorities

The Council's 2016-2020 research plan includes a recommendation for a management strategy evaluation (MSE) to evaluate the effectiveness of scup management. Several advisors said that conducting an MSE for scup is not a priority right now because the stock is doing so well.

One advisor said that it could be helpful to look at why the stock is doing so well and compare that to what is being done with other stocks.

One advisor recommended researching the long-term effects of management. While we want the resource to be in good shape, maybe we shouldn't rebuild too quickly for market reasons.

One advisor said there should be research on aquaculture in federal waters for scup and asked why the Council didn't have an aquaculture plan. The Council chairman responded that currently there are contradictory court rulings about whether aquaculture is something that can be managed under Magnuson-Stevens Act by the Councils. Until those are resolved the Council has taken aquaculture off its priorities list.

Black Sea Bass

Biological Issues and Biomass Projections

One advisor said the lower than average 2018 recruitment could be influenced by the high abundance of large black sea bass, some of which eat juveniles.

One advisor noted that the retrospective adjustment to estimated 2018 SSB shows high abundance; however, the unadjusted values for 2014-2018 show a steep decline. He also noted that the Acceptable Biological Catch (ABC) projections for 2020-2021 show notable declines in biomass. Other advisors expressed concern about this decline. One advisor asked if this means the stock is in crisis. Staff clarified that the unadjusted biomass estimates do not show biomass declining below the target. In addition, the projected ABCs are based on projected Overfishing Limits (OFLs). The OFL is the level of catch which should bring biomass to the target level. Since black sea bass biomass is above the target, fishing at the ABC should bring biomass down closer to, but not below, the target. This does not mean the stock is in crisis.

One advisor said most trawl surveys don't sample more than 10 miles from shore, yet black sea bass have been caught as far as 150 miles from shore in lobster pots. This could result in the stock assessment under-estimating biomass.

One advisor noted that a recent paper suggests that sea whips are important habitat for black sea bass off Maryland and asked if sea whips are found in more northern areas. Other advisors said they have not observed sea whips north of Maryland.

Commercial Catch Locations and Distribution of Stock

One advisor cautioned that the higher prevalence of the large 2011 year class in the northern region (north of Hudson Canyon) compared to the southern region should not be interpreted to mean that black sea bass are no longer abundant in the southern region. He added that statistical area 616 had the highest proportion of commercial black sea bass catch in 2018 in part because vessels from southern states (e.g., North Carolina) travel to that area to target summer flounder. They do not make dedicated black sea bass trips, but target black sea bass on their summer flounder trips. For this reason, the map of catch locations in the Fishery Information Document is not reflective of the distribution of abundance. Another advisor agreed and added that for this reason, when summer flounder catch is reduced, it can also look like black sea bass catch is reduced as captains won't make trips to those areas just for black sea bass.

One advisor reminded the group that the locations reported on Vessel Trip Reports (VTRs) can be imprecise. For example, many captains will report all catch from a trip on a single VTR under a single location (usually the location of the first haul) even if fishing occurred in multiple statistical areas. When fishermen move from one statistical area to another or change gear types, they should fill out a new VTR; however, this is viewed as burdensome and is often not done.

One advisor noted that the study fleet collects tow-by-tow location data and should be used at least as a comparison to VTR data. The study fleet was meant to enhance the stock assessment process.

One advisor said the location of black sea bass catches from pots and traps can be impacted by lobster closures in areas 4 and 5 (off New York through Cape Hatteras) in the spring. These closures exclude black sea bass pot fishing.

Recreational Fishery

One advisor expressed frustration that despite high biomass, a loosening of the restrictions on the recreational fishery never seems possible. He added that for-hire fishermen depend on black sea bass for their livelihoods.

One advisor and party boat captain said he fishes every day for black sea bass when he can, as do most other for-hire captains he knows. He said the MRIP estimates showing much higher catch from anglers on private and rental boats compared to party/charter boats are unbelievable.

One advisor requested that next year's Fishery Information Document include a summary of discards by mode (private/rental, party/charter, and shore). He said this could support consideration of a total cumulative length limit in the recreational fishery. Another advisor cautioned that breaking the estimates down by mode can lead to high PSEs.

Management Issues

Two advisors said some commercial fishermen use 5.5 inch trawl mesh to target black sea bass, rather than the required minimum mesh size of 4.5 inches. This allows them to target summer flounder and black sea bass with the same net and releases more small black sea bass from the net. Since black sea bass are so abundant, fishermen are still able to catch enough sea bass with this larger mesh.

Advisors discussed potential issues related to the commercial/recreational allocation percentages defined in the Fishery Management Plan and the adoption of the new MRIP data, which show much higher recreational catches than previously thought. One advisor said the recreational fishery will be thrown under the bus yet again due to changes in the MRIP data.

Another advisor noted that before implementation of the current accountability measure system, the commercial fishery was required to take reductions due to overages in the recreational fishery. He feared that upcoming Council and Board discussions of allocations could result in the commercial fishery losing allocation due to changes in the recreational data. He cautioned that the Council and Board should avoid issues associated with groundfish catch shares where those who created the biggest problems were rewarded. He added that he has nothing against the recreational fishery as they were not responsible for the changes in the MRIP data; however, the commercial fishery has also been constrained for a long time.

One advisor said that if the recreational fishery receives a higher allocation in the future, it should be coupled with additional measures to improve reporting and accountability, which could include different measures for the for-hire and private sectors.

Research Priorities

The Council's 2016-2020 research plan includes a recommendation for a directed study of the genetic structure in the population of black sea bass north of Cape Hatteras. One advisor said this should be expanded to include stock mixing and migration patterns.

Another advisor said greater sampling of black sea bass in inshore areas could be beneficial.

Kiley Dancy

From: James Fletcher <unfa34@gmail.com>
Sent: Tuesday, July 16, 2019 9:02 AM
To: Kiley Dancy; Beal, Robert
Subject: Re: Meeting Location & Hotel Block for August 29th Advisory Panel meeting

Ms. Dancy Mr. Beal:
Can the PDT or Monitoring Committee {ASMFC What ever group} be asked to discuss, what a total length retention regulation could affect all MANAGED species with NO DISCARDS. ALSO ASK THE PDT GROUP TO DEFINE PHYSICAL WASTE OF FISHERIES; As refereed to in Article 1 section 1 of Atlantic Stated Marine Fisheries Compact.
Ask that they discuss the benefits of not targeting female fish and no dead discards with size regulations and write a report for advisors.
Ms. Dancy would you compile a total import of fish used as replacements in the market for these species. Will total retention by length affect import of fish?
Mr. Beal CAN ASMFC at the up coming meeting; discuss physical waste & total length retention for all ASMFC recreational fisheries?

--
James Fletcher
United National Fisherman's Association
123 Apple Rd.
Manns Harbor, NC 27953
252-473-

Kiley Dancy

From: James Fletcher <unfa34@gmail.com>
Sent: Tuesday, July 16, 2019 10:46 AM
To: Kiley Dancy; Moore, Christopher
Subject: IMPORTS - TRADE2010.pdf

https://www.st.nmfs.noaa.gov/st1/trade/documents/TRADE2010.pdf

PAGE 3 SHOWS FLOUNDER Imports; for 2010 My computer skills are not good will you try to bring 2016-2018 import of flounder scup black sea bass substitute imports information for advisors.
Dr.Moore would you consider asking your staff to show imports for species that take market share from our U.S. fishermen during each discussion?
On aquaculture: what is MAFMC aquaculture position in EEZ?
Instead of Chub Mackerel perhaps a plan for aquaculture?

--
James Fletcher
United National Fisherman's Association
123 Apple Rd.
Manns Harbor, NC 27953
252-473-3287

Kiley Dancy

From: James Fletcher <unfa34@gmail.com>
Sent: Tuesday, July 16, 2019 11:14 AM
To: Kiley Dancy
Subject: Imports and Exports of Fishery Products Annual Summary, 2017 - Trade2017.pdf

https://www.st.nmfs.noaa.gov/Assets/commercial/trade/Trade2017.pdf found this advisors could discuss imports & size restriction vs total length retention of all fish

--
James Fletcher
United National Fisherman's Association
123 Apple Rd.
Manns Harbor, NC 27953
252-473-3287

Kiley Dancy

From: Katie Almeida <kalmeida@towndock.com>
Sent: Monday, August 19, 2019 10:35 AM
To: Kiley Dancy
Subject: Fluke/Scup/BSB

HI Kiley,

Sorry I can't make the AP meeting, but I had a vacation scheduled and we leave that afternoon. I did do a little asking around and got some answers to your list of questions.

1) It's a lot of work to fish for scup because of the size issues (min limits and market driven). You might get more people to fish for scup if there was a 5% allowance for undersized scup.
   Discuss the option to increase the minimum size for scup? It's too hard to move the smaller culls.
   Perhaps we'd come closer to reaching the quota? When squid comes around some people will choose to fish for squid over directing on scup.
   For Fluke and BSB the main issue is the quota, especially for BSB! Happy to have the increase in quota for fluke!

3) Would like to see some research on how to fix the seabass issue for example, look into a dedicated bsb assessment.
4) Possible decrease the scup quota and increase the bsb and fluke quotas

Feel free to reach out to me for any questions.

Thanks!
Katie

Katie Almeida
Fishery Policy Analyst
45 State Street | Narragansett, RI 02882 USA
O: 401-789-2200 x143 | C: 508-930-2633
www.towndock.com

Kiley Dancy

From: Katie Almeida <kalmeida@towndock.com>
Sent: Thursday, August 29, 2019 9:02 AM
To: Beaty, Julia
Cc: Kiley Dancy; Coutre, Karson; Donald Fox
Subject: RE: Fluke/Scup/BSB

Hi Julia,

I've added Donald Fox in case he'd like to add anything to this response.

Regarding the scup, increase the min size for scup. It's hard to move the smaller fish, right now there isn't a market.

For black sea bass, what I should have said was that we'd like to see a dedicated SURVEY for bsb.

Thanks,
Katie

From: Beaty, Julia <jbeaty@mafmc.org>
Sent: Tuesday, August 27, 2019 10:42 AM
To: Katie Almeida <kalmeida@towndock.com>
Cc: Kiley Dancy <kdancy@mafmc.org>; Coutre, Karson <KCoutre@mafmc.org>
Subject: RE: Fluke/Scup/BSB

Hi Katie,

Sorry to hear that you can't make the AP meeting. I wanted to follow up on some of your comments to make sure I understand them.

Does this statement mean to say decrease (as opposed to increase) the minimum size to allow people to keep more small scup? "Discuss the option to increase the minimum size for scup? It's too hard to move the smaller culls."

I'm also not sure what specifically you are referring to when you say the sea bass issue and what you mean by a dedicated BSB assessment. BSB just went through an operational stock assessment. Do you mean some other type of assessment?

Thanks!

Julia

Julia Beaty
Fishery Management Specialist
Mid-Atlantic Fishery Management Council
800 N. State Street, Suite 201

Kiley Dancy

From: Beaty, Julia
Sent: Monday, August 26, 2019 12:09 PM
To: Kiley Dancy
Subject: FW: COMPLYING ASMFC / STOCK ENHANCEMENT.
Attachments: Scan0596.pdf

-----Original Message-----
From: James Fletcher <unfa34@gmail.com>
Sent: Monday, August 26, 2019 9:55 AM
To: Beaty, Julia <jbeaty@mafmc.org>; Batsavage, Chris <chris.batsavage@ncdenr.gov>
Subject: COMPLYING ASMFC / STOCK ENHANCEMENT.

Ms. Julia add for Baltimore if possible: Discussion of physical waste. ALSO HARD DISCUSSION OF TOTAL LENGTH FOR ALL MAFMC MANAGED SPECIES.
MUST STOP DISCARDS!
Mr. BATSAVAGE, IS ARTICLE 1 OF ASMFC BINDING ON NORTH CAROLINA?

--
James Fletcher
United National Fisherman's Association
123 Apple Rd.
Manns Harbor, NC 27953
252-473-3287

THE FISHING INDUSTRY DOES NOT ENDORSE THE PRESENT FORM OF MANAGEMENT FOR SOUTHERN FLOUNDERS.

The management of Southern Flounders; harvesting the large female flounders leaving the slower growing males, has resulted in less fish and smaller fish for harvest.

Therefore the Fishing Industry demands a policy of Stock Enhance for southern flounders be implemented immediately by North Carolina Marine Fisheries in place of regulatory action to restrict harvest.

Yamaha Fisheries Journal 37 published October 1991 outlines the basics for flounder stock enhancement. Southern Flounder: A Hot Candidate for Aquaculture {Coast watch} is published data indicating female fish grow two to three times faster than male flounder.

The Fishing Industry feels that National Marine Fisheries, Councils {Mid Atlantic - New England – South Atlantic; Atlantic States Marine Fisheries Commission have not managed the fisheries to the benefit of the Nation.

Management of fisheries resources by these agencies and the states has resulted in the United States importing 93 % of seafood consumed; Why does the Country with the second largest Exclusive Economic Zone in the world import 93% of seafood consumed?

The Fishing Industry believes Stock enhancement / Ocean Ranching is a logical method for increasing production for Southern Flounder in North Carolina. Stock Enhancement by North Carolina Marine Fisheries or Contracting with the major Hatchery owners of the world should be implemented.

UNITED NATIONAL FISHERMAN'S ASSOCIATION
123 APPLE Rd MANNS HARBOR NC 27953
PH 252-473-3287 CELL 757 435 8475

James Fletcher

STEUB HOUSE DARE COUNTY [illegible]

2005 North Carolina Code - General Statutes § 113-252. Atlantic States Marine Fisheries Compact and Commission.

§ 113-252.� Atlantic States Marine Fisheries Compact and Commission.

The Governor of this State is hereby authorized and directed to execute a compact on behalf of the State of North Carolina with any one or more of the states of Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, South Carolina, Georgia, and Florida and with such other states as may enter into the compact, legally joining therein in the form substantially as follows:

ATLANTIC STATES MARINE FISHERIES COMPACT

The contracting states solemnly agree:

Article I

The purpose of this Compact is to promote the better utilization of the fisheries, marine, shell and anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of such fisheries, and by the prevention of the physical waste of the fisheries from any cause. It is not the purpose of this Compact to authorize the states joining herein to limit the production of fish or fish products for the purpose of establishing or fixing the price thereof, or creating and perpetuating monopoly.

Article II

This agreement shall become operative immediately as to those states executing it whenever any two or more of the states of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, South Carolina, North Carolina, Georgia and Florida have executed it in the form that is in accordance with the laws of the executing state and the Congress has given its consent. Any state contiguous with any of the aforementioned states and riparian upon waters frequented by anadromous fish, flowing into waters under the jurisdiction of any of the aforementioned states, may become a party hereto as hereinafter provided.

Definition of *waste* (Entry 2 of 3)

transitive verb

1 **:** to lay waste especially **:** to damage or destroy gradually and progressively reclaiming land *wasted* by strip-mining
2 **:** to cause to shrink in physical bulk or strength **:** emaciate, enfeeble a body *wasted* by disease
3 **:** to wear away or diminish gradually **:** consume
4a **:** to spend or use carelessly **:** squander waste valuable resources
b **:** to allow to be used inefficiently or become dissipated

waste (wāst)

v. **wast·ed, wast·ing, wastes**

v.tr.

1. To use, consume, spend, or expend thoughtlessly or carelessly.

2. To cause to lose energy, strength, or vigor; exhaust, tire, or enfeeble: *Disease wasted his body.*

3. To fail to take advantage of or use for profit; lose: *waste an opportunity.*

4.

Organization and development of stock enhancement in Japan

Sugaya, Takuma

Date published: 2006

Keywords : Fishery resources, Stocks, Stock assessment, Fishery organizations, Hatcheries, Fish, Aquatic crustaceans, Aquatic molluscs, Spawning, Seed production, Resource conservation, Protected resources, Rare resources, Resource management, Stocking (organisms), Japan

Springer

Undulated flooring in the rearing tank decreases hypermelanosis in Japanese flounder *Paralichthys olivaceus*

Fisheries Science

November 2017, Volume 83, Issue 6, pp 1027–1035 | Cite as

Original Article Aquaculture

First Online: 23 October 2017

Abstract

In the aquaculture of the Japanese flounder *Paralichthys olivaceus*, hypermelanosis, a malpigmentation condition in which the scales of a significant area on the blind side express the characteristics of those on the ocular side, remains a major concern. Since introducing sand into the rearing tank effectively suppresses hypermelanosis, the inhibitory effects of various characteristics of the surface of the tank floor were investigated. Although an inhibitory effect was observed in both tanks with a sand-image floor and a sand-pasted floor, the strongest effect was found in tanks with a dimpled floor. In addition, covering the inner surface of the tank with net also inhibited hypermelanosis. Using a commercially available corrugated plate, the inhibition of hypermelanosis was confirmed with a noted increase in this effect when combined with light coloration. Juveniles tended to situate themselves in the valley portions of the corrugated plate, suggesting that floor contact with the blind side may contribute to hypermelanosis inhibition. Further observations on the floor contact area with various floor configurations suggested that hypermelanosis is locally suppressed in the areas with floor contact. Therefore, suppression by an undulated (both dimpled and corrugated) floor is likely due to an increase in floor contact area with the blind side.

Southern Flounder: A Hot Candidate for Aquaculture

By PAM SMITH

Sea Grant researchers at North Carolina State University are turning up the heat on Southern flounder to produce all-female cultured stocks. The controlled-breeding method relies on water temperature manipulation during the flounder's early development — not on genetic engineering.

From a pure science standpoint, their research results are important, since most temperature-dependent sex determination has been documented in reptiles, such as some turtles and lizards, and all crocodiles and alligators.

"From an economic standpoint, that is significant," says Russell Borski, a zoology professor and member of the flounder research "dream team."

The production of all-female stock pushes the Southern flounder up a notch as a candidate for aquaculture in North Carolina, he says.

Studies show that female flounder grow two to three times the size of male flounder within two years — a reasonable grow-out period for aquaculture operations. Given the high consumer demand and high world-market value for flounder, the ability to produce larger fish in a short period of time could add up to handsome investment returns.

The production of farm-raised finfish, such as hybrid striped bass, tilapia and trout, is expanding in North

Kiley Dancy

From: Vetcraft Sportfishing <vetcraft@aol.com>
Sent: Monday, August 26, 2019 2:23 PM
To: Kiley Dancy
Subject: Re: Meeting materials for 8/29 Advisory Panel meeting, and additional scheduled AP webinar for 9/24

Kiley........I would like to submit the following comments for inclusion in the minutes of the August 29, 2019 AP meeting.

First I would like to give you an update for the southern half of New Jersey, the area of which I am most familiar. Our fluke fishing is continuing to worsen each year, with the possibility of the average angler having a keeper size fish, diminishing by the year. I see many of the head boats tied to the dock because they don't have enough patrons to make the trip worthwhile. On the days they do sail, the boat is sparsely populated. Most of the artificial reefs continue to show a diminished number of fluke, with this year being extremely poor.

Charter boats like mine are lucky if we can get one keeper per person on most days. Most charter boats in my area continue to have poor revenue or have gone out of business. The recreational sector is in dire need of an economic incentive to keep the industry afloat. South Jersey has lost its striped bass fishery and fluke is not far behind with the current high size limits.

Another problem that adds to our difficulty is the pressure on the inshore fish by the commercial fleet. I, myself, have seen commercial boats trawling circles around the artificial reefs where I fish, intercepting the fluke before they can take up summer residence on the reefs. Also, this year, when we finally had an influx of fish on some flat bottom, here too the draggers moved in and swept up a lot of the fish.

In fairness to the recreational sector, and to prevent further economic destruction of our sector, I would recommend the following:

1. Allow a minimum size of 16" for all land based anglers, even if the quota were one per person

2. Allow a size parameter (14-16") for one fish so at least anglers will have one fish to take home

3. Establish a 12 mile limit off the southern states (NJ, Del, MD, Va) for dragging activity during the recreational season

For research recommendations, I think we have to put money into researching some basic science facts regarding fluke, as it is hard to correct problems such as low recruitment, regional depletion, dead discards, without a better science base.

1. Determine why recruitment is so poor for fluke.....is it related to the epicenter shift?

2. Determine when the main spawning period is for different lattitudes so the stock can not be removed during its spawning aggregations.

3. Determine fluke migration patterns better so we understand how regional depletion can occur.

4. Find better ways to limit dead discards in the recreational sector...........hook size, circle hooks, etc.

5. Find better ways to limit dead discards in the commercial sector.........Revisit net size (If 75% of fluke retained are over 3 pounds (NOAA stats) does it make sense to use a net size that retains 14" fish, reduction of discarded fluke in non target sectors, etc

Capt Harv
Vetcraft Sportfishing
Cape May, New Jersey
Call or Text 610-742-3891
Email: vetcraft@aol.com
www.vetcraftsportfishing.com

Kiley Dancy

From: Dustin C. Leaning <DLeaning@asmfc.org>
Sent: Tuesday, August 27, 2019 1:59 PM
To: Art Smith
Cc: BRENT FULCHER; Beaty, Julia; Coutre, Karson; cstarks@asmfc.org; Kiley Dancy
Subject: RE: August 29, 2019 AP meeting

Good Afternoon Art,

Thank you for comments, your feedback is appreciated. We will be sure to incorporate your comments into the fishery performance reports for summer flounder and scup.

Best,
Dustin

From: ARTHUR D SMITH [mailto:artsmith@gotricounty.com]
Sent: Monday, August 26, 2019 4:35 PM
To: Dustin C. Leaning <DLeaning@asmfc.org>
Cc: BRENT FULCHER <bjseafood@earthlink.net>
Subject: August 29, 2019 AP meeting

Good Afternoon Dustin,

My name is Art Smith and I am an AP member from North Carolina. I will not be able to attend the meeting in Baltimore but have reviewed all of the information you provided and would like to offer the following.

If I have reviewed the information correctly it appears all of the stocks are in fairly good shape. I would really like for the councils to try to do something about discards. The reports are telling me that 20% of summer flounder caught commercially are discarded dead. 25% discards multiplied by 80% mortality rate equals 20% dead discards. This is such a waste. The management of the fishery should be changed to allow (require) the fishermen to retain everything they catch even if this means landing fish that are less than 14". You are not going to catch too many undersized fish pulling a 5.5" bag. Some of the discards may be a result of needing 10 baskets to finish your trip and catching 20 baskets on your last tow, but still it is a terrible waste to throw fish overboard.

Also, I was dismayed to see that nearly 7 million pounds of scup were discarded in I believe was 2017. The mortality on these fish is probably close to 100%. These fish should be landed even if the market value is not very great. There is a segment of the seafood consuming public that needs a supply of low priced fresh fish.

I firmly believe that the current gear restrictions and quotas will effectively manage the fish stocks and undersized fish are not the problem.

I realize my concerns are way outside the box of current fisheries management thinking but maybe the thinking needs to change. A dead fish is not going to reproduce so why not land it. Throwing away perfectly fine seafood is such a waste.

Thank you for your time. I appreciate all of the work that you and the other managers do in enhancing the fisheries resources.

Art Smith
North Carolina

Kiley Dancy

From: Dustin C. Leaning <DLeaning@asmfc.org>
Sent: Wednesday, August 28, 2019 9:43 AM
To: Kiley Dancy
Subject: FW: Meeting materials for 8/29 Advisory Panel meeting, and additional scheduled AP webinar for 9/24

From: bjseafood@earthlink.net [mailto:bjseafood@earthlink.net]
Sent: Wednesday, August 28, 2019 7:40 AM
To: Dustin C. Leaning <DLeaning@asmfc.org>
Subject: Re: Meeting materials for 8/29 Advisory Panel meeting, and additional scheduled AP webinar for 9/24

Dustin,
Good Morning. I wanted to let you know that I had planned on being at the meeting today, but some untimely business to come up that prevents me from being present. My thoughts are similar to Art Smiths , as we should reduce our dead discards on both sectors, Recreational and Commercial . My thoughts are we should allow a smaller size limit on Recreational Harvest to help to reduce dead discards. Again sorry I will not be able to be present.
Regards,
Brent Fulcher

Sent from my iPad

Kiley Dancy

From: James Fletcher <unfa34@gmail.com>
Sent: Tuesday, September 3, 2019 9:38 AM
To: Kiley Dancy; Batsavage, Chris
Subject: Environmental endocrinology of salmon smoltification - ScienceDirect

https://www.sciencedirect.com/science/article/pii/S0016648010002418

It occured to me that summer & southern Flounder management needs review by SSC,
IF both soecies spawn in the ocean & larva move inshore then chemicals in the inshore waters can stop inshore migration.
The surfactants used for spruce bud worms affected the Atlantic Salmon. Is the decline in both species of flounder related to chemicals in water preventing inshore migration?
Is North Carolina southern flounder population problem due to CHEMICALS?

IS SPAWNING & RELEASING LARVA INSHORE A SOLUTION?
THE SSC MUST BE ASKED TO COMMENT ON SPRUCE BUD WORM SURFACTANT DECLINE IN SALMON & THE DECLINE IN SOUTHERN & SUMMER FLOUNDER.
WERE THE SMALLER FISH HISTORICALLY CAUGHT OFF N.C. MALE SOUTHERN FLOUNDER THAT CAN NO LONGER MIGRATE OUT OF THE SOUNDS DUE TO CHEMICAL SURFACTANTS?

WOULD RELEASE OF LARVAL FLOUNDER IN SOUND & CHESAPEAKE, DELAWARE BAY PROVE THE PROBLEMS WITH CHEMICALS; ARTICLE 1V OF ASMFC ALLOWS STOCKING.

LARVA STOCKING IS COST EFFECTIVE ! THIS ADVISOR ASK SSC TO COMMENT IN WRITTEN FORM.

--
James Fletcher
United National Fisherman's Association
123 Apple Rd.
Manns Harbor, NC 27953
252-473-3287

Kiley Dancy

From: Monty Hawkins <capt.montyhawkins@gmail.com>
Sent: Wednesday, September 4, 2019 9:53 AM
To: Kiley Dancy
Cc: Advisors - SFSBSB; Beaty, Julia; Leaning, Dustin Colson; Coutre, Karson; Rootes-Murdy, Kirby; cstarks@asmfc.org; Luisi, Michael; Boreman, John; Gilbert, Emily; Moore, Christopher; Hare, Jon
Subject: A BSB Comment..

Here a comment to sea bass managers everywhere..
Fishery management is a frustrating bit of business. In my youth there were no regulations at sea. None that I was aware of. From the stories of old-timers, however, it seemed pretty obvious which way things would continue to trend if we didn't act soon.
In 1985 Maryland led the charge with a complete closure on striped bass. The feds followed & acted on stripers too. And then nothing for other species for a long while.
In 1992 I put a boat limit on sea bass - 9 inches. Might sound laughably small now. Was a big deal to many clients then. No one had ever thrown any back before. "They all die anyway!" was one common response; was what I'd been taught too. Yet we'd see little sea bass with even 5 hook wounds in their lip by end of summer. By 1996 I'd tagged thousands with ALS Tagging - one important Result was unexpected: sea bass have nearly absolute habitat fidelity. Even returning to the exact same reef after offshore winter migration.
What we threw back stayed there and would return there next year.
We were throwing back spawners knowing they'd end up in a frying pan before too long.

The single most important reason for choosing 9 inches as a size limit back then was the assertion that "all sea bass have spawned by 9 inches, some twice" that was made to me by a MD State biologist, Nancy Butowski in 1991. Research confirmed what I was already seeing at sea, that many cbass had indeed transitioned to male by 7 1/2 inches. (First I suppose you have to understand nearly all sea bass begin life as female. Only some will switch to male to keep a reef's spawning population in balance.)
What we saw over the next few years in the pre-regulatory era carved it in stone -- Areas where we fished with our own size limit became much better despite heavy pressure. There were many more sea bass. Every artificial reef we built back then filled up with sea bass—and this our greatest period of reef expansion. Tautog were returning in good number too and colonizing every reef we built.
Before management even began on our reef fish, I knew it was going to work. Had already witnessed wonderful success.

With the 9 inch limit, populations grew despite intense fishing pressure. When fed/state management began in 1997 they too went with a 9 inch limit.
Sea bassing got better & better. We were protecting an entire year class of spawners...

So what happened? Why isn't sea bass fishing today just off the charts?
Best I ever saw was in 2002/2003.
In 2003 I limited clients at 25 fish apiece more often than not.

At a huge national meeting a scientist sits at the table and listens ..but not very well.
"So after you began overfishing, how long before sea bass collapsed?"

Numbskull.. In the 1980s we threw nothing back — Ever. When sea bass got tough we killed tog. When tog and sea bass were tough, we boxed up red hake (‘ling’ in these parts.)
I saw many days with nearly a hundred sea bass a man. Some days where high-hook would have close to 200..
Regulation put an end to all that. THAT’s what overfishing looked like - not this tightly regulated mess of today.

Still, with today’s far stricter regulation than in early/pre regulation, we now witness far less spawning production.

Here's where management's disconnect comes in. Science has been thrown askew from implausible Recreational Catch Estimates from MRFSS & MRIP.
NOAA asserts the most asinine catches to small private boats. Regular readers will have seen hundreds of examples in my reports.
Here’s just one. In November/December 2016/2017 NOAA’s MRIP recreational catch estimates show New York’s private Boats landing more sea bass, over 3 million pounds in perhaps 20-some fishable early winter days, than All Party/Charter from Hatteras north caught all year..
NY skippers on big-water Partyboats report no such fleet of private boats as to make this a remote possibility.
Those estimates are off by about 3 million pounds..

That’s where ‘overfishing’ comes from today. A computer screen with LOL dumb statistics on it..

We now - and since 2002 - have had a 12 1/2 inch black sea bass size limit because of repeated MRFSS reports where, in the face of steeply declining for-hire catches owing stricter regulation, private boats are calculated to have crushed all sea bass catch records despite increasing regulatory constraints. These assertions of overfishing have triggered management actions to raise the size limit multiple times in other states/regions, and are often accompanied by emergency and routine closures.

It took me a while to piece it together. Why the decline when we were catching vastly fewer fish?
I explored discard mortality in detail. Were our throwbacks at this higher size limit not making it? Commercial pressure spiking where our fish winter?
Was it the little bit of hardbottom habitat loss I’d witnessed as summer flounder regulation finally loosened on trawl gear?
Was it, as many thought; that increasing trap pressure on artificial reefs were forcing a decline?
I explored all these. Our throwbacks do fine. Despite an enormous spike in trawl in late winter 2004, I’d seen no sign of another.
Traps were tightening up because the fish were too. Very unfortunate for reef builders, but the sea bass decline from that early 2000s high was seen broadly across all habitat types - not just artificial reef.
By 2006 I was telling management
that since 2002 the recreational size limit had lowered spawning production.
They still don’t get it. May never. Maybe you won’t either. But I’ll try to explain it!

Management might ask, "Well, what does age at maturity matter so long as we're applying more & more catch restriction? Doesn't taking less result in more?"
Well, No.
It isn't.
And managers believe, to their very soul, that successful fishery management must include BOFF - Big Old Fecund Females. (fecund meaning lots of eggs)
Well, for a long time now we’ve had larger female sea bass than science even believed existed prior to 2000. Sometimes a client’s fish pool winner will be a female - beating all others aboard.

The "Iron-Clad Rule" (Murawski) of fish populations becoming far more numerous if ***fished*** at the appropriate level relies heavily on several simple assumptions that no scientist or manager should make without careful consideration; especially when dealing with reef fisheries: To be true --for fish to become far more numerous-- ***age at maturity*** must either remain constant or its changes factored into management; And the base area, the footprint, of reef habitat must remain ***unchanged or increasing***.
The 'rule' is now being applied with opposite force as fish perceive population characteristics of a mature reef—they look around and see big scary large males that will likely kill or wound them if they switch to male while too young. Their spawning behavior is - SLOW DOWN, there's too many big guys..
Today we rarely see males less than 11.5 inches. Just as they mature they also become legal. There is therefore no longer a spawning size-limit protection. Hasn't been since 2002 when we forced sea bass to mature later.

From the 1996 Chesapeake Bay & Atlantic Coast Black Sea Bass Fishery Management Plan: ***Fifty percent of black sea bass are sexually mature at 7.7 inches*** Available at NSCEP by searching title
From NOAA Technical Memorandum NMFS-NE-143, BSB EFH Source Document: ***50% are mature at about 19 cm SL (7.5 inches) and 2-3 years of age*** (today we know 7.5 inches is early age one) Brien *et al.* 1993..
Also from the EFH Source Document: ***In the South Atlantic Bight, Cupka et al. (1973) reported that both sexes mature at smaller sizes (14-18 cm SL) (5.5 to 7.1inches)***
Able & Fahay "The First Year in the Life of Estuarine Fishes" Pub 1998, citing Lavenda 1949, Mercer 1978 & Werner et al 1986: ***..that matures first as female, then changes to a male at ages of 1 to 8 years:***
That first 9 inch size limit agreed perfectly with my own observations. When lit-up in spawning color, male sea bass --blue heads or knot heads-- are very simple to spot. It follows that where small 7/8/9 inch sea bass are observed to have transitioned from female to male there ought to be active females of similar or same size. What science claimed *then* was true ***then***: Yes, by 9 inches every sea bass has spawned
The claim some sea bass had even spawned twice made perfect sense to me..
Age at maturity in sea bass is now noticeably older than it used to be: Where we used to see numerous small male sea bass under 9 inches, even as small as 6 3/4 inches; We now see males transitioning mostly at the new size limit, at 12 to 13 inches and only rarely at 9 inches.
It's my understanding that the transition to male is at even larger sizes up north where 15 inch size limits are common.

There was a bad growth curve back then in the science.. Where it says 50***% are mature at about 19 cm SL (7.5 inches) and 2-3 years of age*** we now know those fish are barely age one, not 2 to 3 years of age.
From Mercer 1978: ***"..Black Sea Bass had significantly faster growth rates in the Mid-Atlantic.."***
Early Fishery Management Plans (FMPs) had just 4% of the cbass population over 3 years old (and thought that was 7 1/2 inches?) Because sea bass presently have a 12 1/2 inch size limit (age 3) a large percentage of the population should be age 3 -- In today's fishery only those 3 year olds and a fewer older fish that survive fishing pressure are recruited to the spawning stock, whereas previously virtually every sea bass over 6 months of age was at least trying to spawn.
Whether accelerated spawning experienced for decades in pre/early management was a result of **more young fish spawning** or young fish **learning to spawn earlier** makes no difference: Spawning Was Accelerated, Fish & Fisher Both Benefited.
Now we don't.

Prior to 1997 recreational fishers averaged roughly 4 million sea bass a year with no size limit and no creel limit. Despite my own boat's management beginning in 92, back then very few Mid-Atlantic cbass EVER saw their 3rd birthday. In fact, many were taken before they'd even ***had*** a birthday. But we still averaged 4 million a year in the lowest point of fishing's history, before cbass management had even begun.
Since 2004 I believe we have factually averaged well under a million fish landed per year in the Mid-Atlantic States, all of which were at least 3 or 4 years old.

If habitat, winter trawl & age at maturity had remained constant within the several distinct regional populations, or -far better- were actively managed for productivity, we'd *conservatively* be 2.5 million fish to the good every year just from recreational measures.
The other 50% of cbass quota goes commercial and their catch too is measurably declined from premanagement -- If management were humming along we'd be 5 million cbass to the good *annually.*
Sea bass live about 12 years..
That would be 35 million cbass having escaped harvest just since 2009 - and at least that many again since. Consider too the added boost which should be occurring from spawning population increase..

Yeah, No, it's not working. We're receiving no benefit whatever from catch restriction based management using the most amazingly ludicrous statistics ever called science—what are NOAA's MRIP & MRFSS catch estimates..

We have nicer fish--bigger fish, than the premanagement era, but less of them than straightforward math would have.

Counter-intuitive though it may seem, management has turned spawning activity down to 'simmer' in the Mid-Atlantic via larger & larger size limits--they have unwittingly used spawning biology to reduce the spawning stock size. Owing grossly overinflated catch estimates, Management and science remain unaware their actions are steadily eroding the recreational cbass fishery.
Management overweights assertions of overfishing, favors catch restriction policies to the point of exclusivity:
Tools using biological considerations such as age at spawning/maturity, habitat production & habitat fidelity remain unused.

As Reef populations declined, spawning size regression never occurred. Small fish remain predominantly absent the spawning population

..except for a large scale experiment management didn't see coming.
In 2013 MD Wind Energy Area surveys began.
I complained bitterly that sub-bottom profiler survey equipment was driving sea bass and summer flounder from about 500 sq miles of bottom.
I wasn't guessing. In 2007 I was anchored up and catching like crazy at the Jackspot artificial reef site when a 50 foot state survey boat, run by a good friend, came in to finalize our permit conditions with a survey. That's why I was there - history in the making. (To me at least!)
But when Rick came in for his first leg, the sea bass bite - a magnificent bite - instantly shut off.
Literally like a switch.
I asked him what he'd turned on. "My sub-bottom profiler."
When he turned it back off the bite resumed at a far more tepid pace...
Now picture 150 footers with much more powerful sub-bottom profiler equipment running back and forth 12 miles, day & night, for 3.5 summers..
The fish simply left. They couldn't stand it. The bottom was barren, devoid of sea bass and fluke.
These "sub bottom profilers" are NOT the extremely loud oil/gas survey equipment. Some hold they mimic a gigantic echolocating mammal — a humongous dolphin — and scare fish that way.
I made a video at surveys' conclusion. (YouTube search "Survey effects off Maryland")
I predicted to management that when surveys were over, the entire area would be recolonized and that spawning size of sea bass would regress to that early/pre management size of under 9 inches.
That's exactly what happened. Production shot straight up too. We've enjoyed much better sea bassing the last few years owing, I believe, to a boost in spawning population as age 1 sea bass rejoined the spawning stock on this massive area of uncolonized reef..

We’ve now worked through it. Saw the very last of the under-9 inch spawners this spring (2019) and none after early July.
We’ll now witness spawning production fall again as it must with far-fewer participants in the spawning population.

I believe it is visual cues that drive spawning urge; that larger fishes’ presence prevent whatever hormonal response is needed for age 0, 1, & 2 cbass to join the spawning class.
I believe we have managed the black sea bass stock to a point where only a quarter or a fifth of the stock engage in spawning.
May well be less than that...

In 2003 I thought, and wrote, that I believed we were at holding capacity — that we could not possibly have a larger sea bass population along DelMarVa; That our reef habitats couldn't hold anymore..
If readers comprehend "holding capacity" as a function of environment--either in forage or physical dimension--where there simply must be enough to eat; If you can then imagine a reef with no fishing pressure whatever reaching its climax population, a point where natural recruitment of young fish replaces natural mortality — where that reef's population is in balance: If so, then you can imagine a method of doubling that population of fish by simply doubling the size of the reef.

Fishery managers should be interested in means by which they can double a population of fish..

I have several videos on the web that document DelMarVa's remnant natural hardbottoms as well as artificial reef.
(http://www.youtube.com/watch?v=-cMC8JVa2Bk) &
(http://www.youtube.com/watch?v=n77WF9XQRJM&feature=related or YouTube search, "Common seafloor habitats" & "Maryland corals."

Here from a **1961** study: California Fish Bulletin 146, Man-Made Reef Ecology: Summary & Conclusions -- Page 198
Brackets { } are mine, **BOLD** original but emphasized. Parenthesis ( ) & quotes are original.
..it is apparent that "non-productive" areas of nearshore ocean floor can be made "productive" by installation of relief structures {artificial reef}. *Initially, these structures attract fishes from surrounding areas and present a substrate suitable for development of the complex biotic assemblages* {reef growths, e.g. mussels & coral} *typical of natural reefs. As these new reefs mature, biological succession occurs and fishes which may have been initially attracted only to the structures are incorporated into the reef community in response to increasingly available food and shelter.* ***Ultimately (in about 5 years) a natural situation is attained*** *and the plant & animal populations exhibit fluctuations typical of* {natural} *reef ecosystems.*

Artificial reef substrates create natural reef production.

It remains true that there were more sea bass caught from 1950 to 1961 than in all the decades since combined.
Sea bass can never be rebuilt to the population of the 1950s with the habitat footprint of today. They'll never *stay* rebuilt without winter quotas specific to region. Habitat & habitat fidelity —Spawning Site Fidelity — are tools which must be grasped for quota assignment & size limits that maximize spawning potential. We have an ocean to work with; yet, for the most part, Recreational regulation is driven almost solely by catch statistics no one any longer believes.

Lowering the size limit on sea bass to 11 inches would swiftly lower their age at maturity.

We'd soon see a far larger spawning population..

Were NOAA to discover the seafloor reef habitat footprint of the late 1940s and restore it; lower the size limit as a tool to enhance spawning production; use habitat fidelity in quota management: we'd make incredible strides in fisheries abundances - especially sea bass..

Regards,
Monty

Capt. Monty Hawkins
Partyboat Morning Star OCMD
Mhawkins@morningstarfishing.com

Kiley Dancy

From: Monty Hawkins <capt.montyhawkins@gmail.com>
Sent: Wednesday, September 4, 2019 11:30 AM
To: Kiley Dancy; Beaty, Julia; Coutre, Karson; Leaning, Dustin Colson; Rootes-Murdy, Kirby; Gilbert, Emily
Subject: Fwd: An MRIP comment..

And now as an 'adviser'..
Thanks
Monty

Begin forwarded message:

From: Monty Hawkins <capt.montyhawkins@gmail.com>
Date: November 30, 2018 at 6:59:41 AM EST
To: cmoore@mafmc.org, Mike Luisi <Michael.Luisi@Maryland.gov>, Angel Willey -Dnr- <angel.willey@maryland.gov>, sdoctor@dnr.state.md.us, John Boreman <jgboremanjr@gmail.com>, Jon Hare - NOAA Federal <jon.hare@noaa.gov>, john.manderson@noaa.gov, Mary Clark Sabo <msabo@mafmc.org>, Julia Beaty <jbeaty@mafmc.org>, Emily Gilbert <emily.gilbert@noaa.gov>, bmuffley@mafmc.org, Kirby Rootes-Murdy <krootes-murdy@asmfc.org>, Kiley Dancy <kdancy@mafmc.org>
Cc: Frank Blount <Francesflt@aol.com>, Carl Forsberg <lito325@msn.com>, Jeff Gutman <Jgutman28@comcast.net>, Robert Bogan <captbogan@aol.com>, Skip Feller <sfeller3@verizon.net>
Subject: An MRIP comment..

Greetings All,
This is from my fish report 11/28/18 - some thoughts on recent MRIP sea bass estimates. What was already a bad guess has become unfathomably far from true.
Regards,
Monty
****
Shocker: NOAA's taking some very bad guesses at what we recreational fishers catch.
Yawn..
But it's a big deal where our quotas are concerned. It's these constant and forever over-estimates by MRIP that have lead to ever stricter regulation.
So far as sea bass go, we're fortunate to have great managers battling for us along DelMarVa. All states above DE Bay have more restrictive regs. New Jersey is down to just 2 cbass in high summer. MA, RI, CT, & NY all have 15 inch size limits & small bag limits.. We're still at 15 fish at 12.5 inches.
Truth is, while we have had managers who isolated us from MRIP's madness up north, we're simply lucky we've not had an MRIP recreational catch estimate along DelMarVa showing insane levels of catch that absolutely no one should believe ..It just doesn't matter to NOAA - unbelieved estimates get ground through the system anyway as "Recreational Overfishing."

NY's Nov/Dec Private Boat sea bass harvest in 2016 & 2017 jumped from well below 100,000 pounds to about 3 Million lbs.. That's WAY MORE for just NY's Private Boats THIS TIME OF YEAR than ALL PARTY CHARTER BOATS FROM FLORIDA TO MAINE CAUGHT ALL YEAR! That's 2.7 million more pounds of JUST Private Boat catch, In JUST one state, in two REALLY COLD MONTHS than for All Party/Charter along the whole east coast ALL YEAR.
Believe that?

NOAA does.. They "Have To" they say.. Fisheries law says NOAA has to use "The Best Scientific Information Available." Because MRIP's estimates are all there is - they use them.

And that, dear reader, is how our recreational sea bass quota disappears.
Nobody believes NY's Private Boat guys caught that. No one.
But when Council is discussing recreational harvest - those numbers are folded right in.
Accused & convicted of overfishing via statistic - NY's recreational fishers had to fight like crazy to keep just 7 sea bass at 15 inches from Sept to December in 2018.
Pretty sure I know what would happen to my trips with a limit like that..

Every couple trips I see a private boat or two this time of year. A hundred fifty miles north, & that much colder, NY's incredible Private Boat sea bass estimate in 2017 is oddly counterbalanced with MRIP showing NY Party/Charter catching just 25,000 pounds of Nov/Dec sea bass. While Private Boats caught almost exactly 3 million pounds in Nov/Dec 2017 - All NY Party/Charter took just 25K lbs..
Really? This time of year I carry a LOT of boat owners who have (wisely!) winterized their boats. The private boat fleet is largely in storage.
Oh sure, some guys are ready - waiting. Looking forward to the winter striper run especially.
But the parking lot behind my boat is getting FULL of boats - all sitting "On The Hard" as some like to say.
NY, apparently, is not that way. Not according to MRIP...

Forcing Bad Statistics into our system of recreational regulation make good science & management impossible. "Overfishing" rears its head Every Year! We're forever going past our allotted quotas.. NOAA makes everyone in system use 'The Best Available Data' - period. Because MRIP is NOAA's recreational catch estimating darling, results will be what they are so long as NOAA's "Must Use MRIP" remains policy - And because management MUST act to PREVENT "overfishing" - for we rec fishers MRIP creates a bad regulatory result - management is always having to further reduce our catch with tighter regs..

The National Academy of Science glows with pride; MRIP issues press release after press release telling managers how great they're doing.

Have a look. This is a tiny fraction of what I see in MRIP - and just for one species!
In the summer of 2000 MRIP says NJ Shore anglers landed just over 200K sea bass. They weighed 5 to a pound. (no bag limit then, just an 11 inch size limit as memory serves. Maybe 10. Wasn't 12 yet.) From that year, 2000, until last summer, 2017, no other sea bass were reported from the NJ Shore -- no NJ sea bass taken from shore at all between 2000 & 2017. But this summer, in 2018, NJ—whose anglers were allowed just two sea bass at 12.5 inches in high summer—is said to have averaged 1.7 pound keepers from shore.
That didn't happen. It's never happened.
It was only 15,500 sea bass. Not enough to disrupt our regulatory flow. But the MRIP system let it though.
Still, those 15K cbass from shore become 26,371 lbs. This is more than MRIP shows for All NJ Party Boats in the same period. It's more than half of what All Party Boats are estimated to have caught throughout the entire Mid-Atlantic region in high summer.

Many of us are targeting sea bass in summer.
I'm pretty sure NJ's dedicated jetty fishers would have been having a time reporting that many "1.7 Pound Average" sea bass from shore.

It's interesting too that 1.7 pounds is half a pound higher than any of NJ's boat caught fish.
Though some Shore anglers are certainly skilled beyond belief, there's just no way NJ Shore anglers could land larger keepers than skilled Party/Charter or Private Boat skippers. It's not how the fish behave.

Back in Sept/Oct 2016 MRIP claimed Maryland had 129,000 sea bass from Shore averaging 1.4 pounds. That's equal to several years worth of MD Party/Charter catch. 178,000 pounds of sea bass from shore - in the internet era - and I could only find one guy, a fellow who fishes down by the inlet frequently; one man who claimed to have caught a legal sea bass. One.
Takes a couple inches beyond our 12.5 inch size limit to make a sea bass 1.4 pounds. There were no 1.4 pound sea bass caught from shore.

In May/June of this year, 2018, there was really only Massachusetts' big spike in Private Boat landings. According to MRIP data NOAA will force managers to use: Just MA's Private Boats, as is so common in MRIP, landed more sea bass during those weeks of open spring season, about 1.5 million MORE pounds, than All Party/Charter Boats in the Mid & North Atlantic will catch all year - All Combined. MA catches over a million and a half more pounds than ALL of last year's For-Hire total..

MRIP's July/Aug 2018 numbers are out now too. They show NY Party/Charter catching just 4.8% of that state's sea bass. RI For Hire had 5.3% - CT 3.5% - DE 3%..

I've written numerous times about how a method of testing MRIP's accuracy could be devised by generating "Percentages of the Fishery" -- what For-Hire and sharp Private Boat skippers think is a fair division of actual catch based on "While Out Fishing Observation." Wherever MRIP is wildly divergent from what skilled anglers perceive as a reasonable percentage calculation; closer scrutiny might call for tossing the number------Or At Least Figuring Out WHY It's So Messed Up!

Professionals have to turn in catch reports daily. Not that MRIP doesn't botch it, but being too far off when We Tell Them What We Caught is inexcusable.
In fact, I believe a BETTER ESTIMATE for some fisheries could be devised using "percentage of the catch" alone.
For Instance: Maryland's For-Hire summer sea bass catch shows 11,000 pounds. MD's summer Private Boat catch estimate in 2018 is zero. Rather than plugging a zero into the system, I think a sit down with fishers actually engaged in the sea bass fishery would show Private Boats catching approximately 20% of our total sea bass landings.
Here MD's Private Boat landings would now become 2,200 pounds.

In NY one skipper recently told me he thought Party/Charter responsible for 60% of that state's sea bass landings. Because NY For-Hire landed 41,574 lbs of sea bass in MRIP estimate; by using percentage of the fishery calculation Private Boats would show 24,944 lbs..
Instead, NY's Private Boats show 825,000 pounds of summer sea bass -- this while anglers were allowed just three fish at 15 inches.
Yes, the number we turn in would have to be examined. And many skippers would have to be consulted - not just one - but a reasonable percentage division could be found..
MRIP has NY For-Hire at 4.8% of the summer sea bass landings. Boy, do I doubt that. No NY skipper I've ever spoken with thought Party/Charter catch was less than 50% in sea bass.

Fisheries are being stolen by bad data.
We really need to fix it.

I've watched fairly closely since 1998. Instead of even minutely better, every repair to recreational catch estimates since 2005 has made the system worse.
Way Worse.

Quota disappears in an electronic puff of bad data.
Shorter seasons/closed seasons/smaller bag limits/longer minimum sizes -- bad data has the helm.
We MUST find a way to allow management to call Bad Statistics! Bad Science!

Better still -- instead of just allowing managers to unglue obviously bad estimates, we ought to also bring MRIP back to earth. Who could guess how many millions of dollars have been lost in the recreational fisheries owing MRIP's bad data - let alone the money squandered creating that data.

Fish do not fall from the sky. They are a product of habitat.
Quota, however, can be sopped-up - completely spent - in a few bad estimates.
Would that NOAA might begin to consider the Mid-Atlantic seafloor's remaining hardbottoms & examine their diminishment over time -- from the period immediately after WWII especially.
It remains true that there were more sea bass caught and sold by the pound from 1950 to 1961 than in all the years since combined.
That's a lot of fish. A huge difference.
Delve into that -- there's where "Fisheries Restoration" will stem from.
Choking off commerce through ever-tightening catch restriction -- by using data no one believes to create an aura of "overfishing" that's simply Not True -- could fairly be said the opposite.
"Fishery," of course. includes the human-use side of a fish population. Shall we settle for whatever population can be mustered via regulations' diminished catch? Or ought we look to the facts of Fisheries Production to discover how in the world sea bass were once so much more prolific..
I tell all who will read: Reef Restoration Makes Fisheries Restorations More Simple!

I witnessed, and my clients very much enjoyed, a wonderful increase in sea bass population when there was still no bag limit at all and the size limit was 9, 10, & 11 inches. Anglers this time of year would often box up over 100 sea bass -- even 200 sometimes!
Know this from that era - the following year there'd be more sea bass in spring than in the previous year..
In 2001 I wrote a piece about the expansion of natural hardbottom habitats from 12 to 30 miles off our coast as summer flounder trawl quota was unfathomably low -- no one was dragging those hardbottoms - they regrew where a hard substrate remained. Cbass were flourishing on those bottoms, and Production, Spawning Production! - was in full gear..
I now believe the story of that population is far more complex - and far more difficult to convince managers of. It turns out that all sea bass scientific papers from before 2000 show sea bass beginning to spawn by age one - 9 inches or less. Sometimes they'd even spawn in their first year of life - what science calls "age zero."
I've chronicled sea bass "age at maturity" shifting to age three (even 4) for many years now. Have written about it extensively.
Understanding why the sea bass fishery remained viable in the era of NO regulation, then positively flourished under light regulation - and is now idling along at perhaps 15 to 20 percent of 2001's spawning production - requires we understand regulation's ability to alter spawning biology.
Or, as NOAA is certainly doing today, claim a restoration victory based on recreational catch restriction -- and these ever-tighter restrictions based on illusions of catch that never happened.

In a couple months we'll see whether MRIP's one arm bandit style of estimating catch will allow regulators to loosen, or force managers to restrict yet again.
We'll be no closer to the truth of fisheries restorations' factual needs - and we'll witness, again, recreational estimates no one believes cartwheel regulation off in new directions.

Regards,
Monty

Capt. Monty Hawkins
mhawkins@morningstarfishing.com
Party Boat Morning Star
Ocean City, Maryland

Sent from my iPhone

Kiley Dancy

From: Monty Hawkins <capt.montyhawkins@gmail.com>
Sent: Wednesday, September 4, 2019 11:35 AM
To: Beaty, Julia; Kiley Dancy; Rootes-Murdy, Kirby; Coutre, Karson; Leaning, Dustin Colson; Gilbert, Emily; Hare, Jon; Moore, Christopher; Beal, Robert
Subject: Fwd: On MRIP's Failing: A Comment

Sent this after a request for comment - "Does MRIP meet standards in 'Quality of Information Act."
You might guess, correctly; I don't think MRIP, I'd printed, is fit to line a bird cage.
As a comment to management in my 'advisor' role please.
Thanks
Monty

Sent from my iPhone

Begin forwarded message:

> **From:** Monty Hawkins <capt.montyhawkins@gmail.com>
> **Date:** July 21, 2019 at 5:26:00 PM EDT
> **To:** RDML Tim Gallaudet <Timothy.Gallaudet@noaa.gov>
> **Cc:** MRIP Comment <nmfs.mrip@noaa.gov>, Chris Oliver <chris.w.oliver@noaa.gov>, Bob Beal <rbeal@asmfc.org>, cmoore@mafmc.org, Mike Luisi <Michael.Luisi@maryland.gov>, Angel Willey -Dnr- <angel.willey@maryland.gov>, linda.barker@maryland.gov, Jon Hare - NOAA Federal <jon.hare@noaa.gov>, sdoctor@dnr.state.md.us, lynn.fegley@maryland.gov
> **Subject: On MRIP's Failing: A Comment**
>
> Greetings Admiral Gallaudet & everyone else too!
>
> *MRIP should be discarded immediately after a hearty public flogging for crimes against fisheries science, fisheries management, & theft of full potential for all US East Coast & Gulf Coast marine recreational fisheries.*
>
> Comment by Capt. Monty Hawkins, Partyboat Morning Star, OC MD, on NOAA's Marine Recreational Information Program--MRIP--which replaced NOAA's previous program, the Marine Recreational Fishing Statistics Survey--MRFFS--in 2012. At question is whether MRIP can be considered scientifically suitable as demanded of the "Quality of Information Act."
>
> NO! MRIP cannot meet any standard of quality, let alone a scientific standard.
>
> Greetings All,
> Having fought for repair of recreational catch estimates since 1998, I cannot imagine a worse result from Congress's 2007 demand that MRFSS be repaired or replaced.
> Where MRFSS was wildly inaccurate, MRIP has blown recreational catch further skyward with such absurdity that even non-fishers can plainly see the impossibly of MRIP's 'new & improved' recreational catch estimates.
> MRIP should be discarded immediately after a hearty public flogging for crimes against fisheries science,

fisheries management, & theft of full potential for all US East Coast & Gulf Coast marine recreational fisheries.

In the event a NOAA reader, or any other, should want to understand how I came to such strong conclusions, I've included a small part of this story below.

Every recreational regulatory tightening for all marine species is based primarily on NOAA's catch estimates. With the regulatory community playing whack-a-mole/close-a-fishery whenever MRFSS showed a sudden increase in recreational landings, fisheries science & marine ecology based fisheries productions never had a chance. So far as I'm concerned, the most important aspects of fisheries restorations remain wholly unfound.

We suffered a 2 week sea bass closure in 1998 when MRFSS showed a million more sea bass caught by NJ Partyboats in 1997.. (Oh? Only a million more? It was routine then for MRFSS to show astronomical estimates in the For-Hire fleet & not at all for Private Boats..)
After several regulatory tightenings, NOAA RA Pat Kurkel closed sea bass by 'emergency' based on MRFSS' estimates in 2009. (This closure very nearly bankrupted me..)
Much of the Mid & North Atlantic's sea bass season remains seasonally closed owing spikes in recreational catch data.
There was an emergency all right - NOAA using bad data to destroy our fiscal potential & blind science to several means of achieving true fisheries restorations.

Closures brutal; further regulatory tightening would ensue after the 2009 closure had expired. Some states now have such restrictive sea bass regulation in place that their fishery may as well be closed.
Make no mistake, MRIP's failings are not just about sea bass. That one reef fishery happens to be my primary fishery. I can examine any marine recreational fishery and swiftly find implausible landings estimates.
As has been the case since 2003, recreational Party/Charter landings are far more stable - & they're required to be reported for each trip. Because professionals are on the water whenever it's fit, we naturally have a better grasp of true fishing pressure; not only from competition, but from private boats as well. Very few fisheries have Private Boat effort greater than Party/Charter's fisheries extractions.

To demonstrate how wildly flawed MRIP's recreational catch data might be, here's an example of comparing the somewhat better known Party/Charter landings from the tautog fishery:
In mid-2010 I was raising a stink about the Wave 2 (March/April) NJ Shore 2010 tautog landings estimate. MRFSS had NJ's shivering early spring anglers catching more tautog (when they Are Not biting from shore!) than All Party/Charter throughout the species full range. At about 64,000 fish, it would have been funny had it not been "science."
Already foremost in mind, this was the very first estimate I checked when MRIP was released in 2012. The new and loudly cheered MRIP had taken a purely ridiculous shore tautog estimate and made it unfathomably impossible — they'd added 100,000 more tautog to NJ's March/April Shore estimate..
But that MRIP nonsense was just the beginning. Now, after MRIP's two "recalibration" events, that same estimate - where a couple fellows are trying to catch NJ's very first shore-caught tog in mid/late April - is now shown as over 800,000 lbs.
That's more tautog in a few weeks from the jetties of one state than All Party/Charter & All Commercial fishers catch ***in a year*** throughout the species entire range.

The estimate still stands. You can look it up.
It's really dumb ..yet shows in grand fashion how an estimate test can be devised; a method of creating Bayesian statistical stops that would hold MRIP's statistical spikes in check.
I've suggested "Percentage of the Catch" comparative testing for nearly 2 decades & especially at meetings prior to MRIP's formation. Ask professional & frequent recreational participants, "What percentage split is seen in the (whatever) fishery between Party/Charter & Private Boat. Using Party/Charter estimates & reported VTR (Federal Vessel Trip Reports) landings to create a fairly hard landings value, it's then simple math to calculate Private Boat landings from participant's suggested percentage values..
(Say a number of Connecticut fishers believe For-Hire catches 70 to 80% of that state's sea bass—from the known value of Party/Charter reported landings & NOAA's estimate, it's a simple calculation to create a catch estimate which also includes the Private Boats' 30%.. The Private Boat catch would never be shown as many-times higher than Party/Charter again..)

Instead of developing an honest look at recreational extraction, however, MRIP's developers instead chose to cower in fear of mighty recreational Shore & Private Boat fishers who, in MRIP's view, are easily capable of outfishing any amount of professional effort -- even, as above, ALL Commercial & Party/Charter combined, and outfish their annual landings in short time-spans — even just weeks.. Management is now more afraid of recreational catch than foreign factory trawlers of yore.

Another example: Black Sea Bass 2017 (here from Fish Report 3/27/19 where I had weeks of work in gathering "Percentage of Catch" info from For-Hire participants in every state between VA & MA and then devised coastal landings estimates state by state; first from MRIP's Party/Charter values and Private Boat Percentage of the Catch, then actual For-Hire VTR reported landings & Private Boat percentages..)
11,447,940 lbs of recreational sea bass was MRIP's actual 2017 value for all recreational sea bass catch north of Cape Hatteras. (Eleven and a half million would be over 3 years of all commercial catch..)
4,160,000 was the catch assigned by Science/Management - Ignoring MRIP (A First! Demonstrates managers' level of trust.. Sea Bass would have been closed for at least 2 years to all recreational effort had the 11.5 million number not been reduced..)
1,961,129 is my total pounds calculation using MRIP's Party/Charter landings & a For-Hire/Private Boat Percentage of the Catch estimate..
1,226,473 if calculated via actual VTR reported values & For-Hire Percentage of the Catch estimate..

MRIP, by my method, is dern-near TEN MILLION POUNDS TOO HIGH in their total estimate.
10.5 Million Pounds is MRIP's 2017 estimate for all Private Boat sea bass effort north of Hatteras.
That's ***Far More*** than ***All Commercial Trawl/Trap & All Party/Charter Landed in 2017..***
Have you EVER heard anyone complain about private boats wiping out a reef's sea bass population? I guess the folks at MRIP sure have..
Conversely, some of MRIP's biggest cheerleaders routinely bash Party/Charter for taking too many fish. Yet, plain as day in MRIP's data, Party/Charter extraction is inconsequential in today's recreational fisheries.
Just one problem: in reality For-Hire effort truly is a powerful extractive force. Far higher than Private Boat in many fisheries, especially sea bass & scup. We even take a dern good chunk of recreational summer flounder & striped bass.
Boy, you'd never know if MRIP tables were your only picture of recreational fishing pressure....

Here's a hint at the evil & wholly uncontrollable overfishing goblins hiding in NOAA's closet & under it's bed - here's what they're afraid of: One of MRIP's lead statisticians told me, (as if I were a bit dull in the

head, and maybe he has a point..) "There are a lot more Private Boats than For-Hire boats. They Have To Catch More Fish."
Oyyyyy... despite the For-Hire recreational fisheries' innumerable NOAA/State Fisheries Permits, (really, there are a LOT of fishing permits needed to take people fishing as a business!) and despite For-Hire's obvious potential for large harvest/catch/landings; and especially despite what we see fishing, where many-many days For-Hire anglers are the only folks soaking a line—especially in shoulder & winter seasons: immediately after the 2003 repair to For-Hire estimates; in 2004 NOAA's official recreational catch estimates began increasing Private Boat to where today MRIP invariably shows Party/Charter For-Hire landings as unworthy of consideration.

In fact, of the last two years (2017 & 2018) For-Hire have, according to MRIP, landed less than 10% of the Mid & North Atlantic's sea bass. (9.7% in 2017 & 7.9% in 2018)
For summer flounder (fluke) it's often less than 5%.. (3.8% in 2017 & 5.4% in 2018)
Why must For-Hire skippers do all this paperwork if there's no real impact on the fisheries? ..at least 'no impact' according to NOAA's MRIP Recreational Catch Data..
My response to, "*There are a lot more Private Boats than For-Hire boats. They Have To Catch More Fish."* is, there are a LOT more people who DO NOT have a boat than do. Not everyone who likes to fish has a boat! Then too, we carry boat owners when their boat's put up for winter, or when they travel..
Yeah, MRIP's got this really messed up.
Using the more precise (but nowhere near perfect) MRIP/VTR For-Hire landings values in conjunction with somewhat loose percentage splits would cast a far better picture of true recreational catch.

A couple more doozies..
Briefly consider NY's Nov/Dec 2016/2017 Private Boat sea bass estimates -- where MRIP claims For-Hire only caught 0.8% of NY's sea bass in early winter 2017 and professional effort was outfished by Private Boats 120 to 1 when NY Private Boats landed 3 million pounds.. Though professional skippers doubt seriously Private Boats catch even 10% of NY Nov/Dec sea bass landings, MRIP has those few NY Private Boats who actually fish in early winter landing nearly the entirety of the annual Mid/North-Atlantic recreational quota.
If the good folks at MRIP had a chart in front of them saying the NY Wave 6 (Nov/Dec) Percentage Split was 90% For-Hire and only 10% Private Boat, that egregious estimate would have never made it to a computer screen.
Even upping it to 20% for Private Boat's share, NY's sea bass tally would have been 31,759 lbs - not 3 million lbs.. Upping it to 50% would not make it much higher.
To achieve that three million pound Private Boat estimate, caught in early winter when I could only get out 21 days in my partyboat, would require 2,496 Private Boats, with everyone catching a limit, going every fishable day.
That would be 357 Private Boats running Every Fishable Day from EACH of NY's inlets w/winter sea bass access.
That sure isn't what those big NY Partyboat operators saw offshore...

While that estimate's ineptitude is glaringly obvious, creating "percentage of the fishery" comparisons offer much finer detail as well.

There's not been any concern for MRIP's 2018 Wave 5 (Sept/Oct) Black Sea Bass recreational catch estimate in Maryland (an estimate I'm deeply familiar with) - MRIP now has 200,036 lbs total for MD Wave 5 sea bass.
Holy Moly!! That's a LOT of sea bass!

But, by MRIP's calculation, only 4.4% of the total catch was by MD For-Hire boats. For every 95.6 pounds of MD Private Boat catch, there'd only be 4.4 pounds of For-Hire Party/Charter sea bass..
I beg to differ.
It should be quite the opposite, if perhaps a tad higher (maybe) for Private Boats. That is, For-Hire should show about 80% of landings for sea bass in Sept/Oct - not a mere 4.4%!
Percentages are funny. Merely jumping For-Hire catch to 9% would more than double For-Hire landings. Since doubling the For-Hire estimate would be HUGE --it's already pretty tight(ish) - we tell NOAA what we caught!-- it seems far more likely an out-of-step estimate would require a lowering (or, on rare occasion, raising) of Private Boat catch.
Here, based on "Percentage of the Catch," MD's actual combined sea bass landings in Sept/Oct 2018 would far more likely be about 11,137 lbs -- not 200,000..

How high has MRIP jacked-up recreational private boat catch?
Here are some MRFSS sea bass tables from 2011, the year before MRIP was released. They were included in my comment titled "Course Correction" from 2011. These tables contain MRFSS "numbers of fish" estimates which Party/Charter fishers actually involved with the sea bass fishery thought wrong in the extreme.
Now shown as incredibly higher, I've added MRIP's latest nonsense in {brackets} beside old version MRFSS estimates.

Species: BLACK SEA BASS - Massachusetts - Wave 3 - May/June - Private Boat Note "0" for both programs in 2006..		
Year	**HARVEST (TYPE A + B1)**	**PSE**
2003	16,282 {35,000}	36.6
2004	17,177 {30,000}	46.7
2005	53,349 {91,000}	32.3
2007	28,281 {37,000}	85.3
2008	65,376 {86,000}	29.1
2009	26,827 {69,000}	38.9
2010	221,028 {1,014,000}	31.3
2011	70,305 {232,000!}	31.6

Species: BLACK SEA BASS - Rhode Island - Wave 3 - May/June - Private Boat		
Year	**HARVEST (TYPE A + B1)**	**PSE**
2003	1,745 {4,000}	46.9
2004	5,686 {7,000}	29.4
2005	6,160 {7,000}	57.2
2006	1,975 {1,000}	70.4
2007	3,601 {2,000}	43
2008	0 {0}	0
2009	989 {2,000}	90.4

2010	36,182 {100,000}	50.7
2011	0 {0}	0

2011 MRFSS Species: BLACK SEA BASS - Massachusetts - Wave 4 - July/Aug - Private Boat		
Year	**HARVEST (TYPE A + B1)**	**PSE**
2003	39,289 {66,982}	36.7
2004	33,003 {45,386}	35.5
2005	43,478 {61,925}	42.6
2006	27,518 {39,079}	44.1
2007	13,062 {10,542}	71.3
2008	13,548 {22,972}	69.4
2009	164,483 {443,502}	25.6
2010	138,748 {251,805}	35.1
2011	31,565 {126,675}	29.3

Species: BLACK SEA BASS - New York - Wave 5 - Sept/Oct - Private Boat		
Year	**HARVEST (TYPE A + B1)**	**PSE**
2003	101,350 {209,000}	31.7
2004	29,863 {51,000}	49.2
2005	7,749 {7,000}	50.3
2006	58,398 {105,000}	32.7
2007	42,352 {133,000}	25.7
2008	54,352 {161,000}	34.7
2009	105,256 {401,000}	45.1
2010	325,074 {561,000}	24.4

Species: BLACK SEA BASS - New Jersey - Wave 5 - Sept/Oct - Private Boat		
Year	**HARVEST (TYPE A + B1)**	**PSE**
2003	238,830 {503,000}	22.1
2004	350,981 {781,000}	28.3
2005	73,860{159,000}	43.6
2006	97,767 {164,000}	44
2007	18,116 {15,000}	69.4

2008	160,799 {1,022,000}	35.8
2009	32,815 {161,000}	34.6
2010	234,150 {1,518,000}	44

In 2011 I wrote of these MRFSS estimates: "*Just these 5 data sets, wildly divergent from the mean & incredibly divergent from the historical trend of for-hire fishers catching more sea bass than the private boat fleet; These few sets alone account 812,000 fish above the mean, a substantial part of the modern recreational quota.* ***Just this difference is more than twice as many sea bass as the entire Mid-Atlantic party/charter fleet is said to have caught in all of 2010.***"
Now, with MRIP having undergone two "recalibrations," these five single-state/single-mode (Private Boat) two-month 'wave' periods in 2010 are now 2.49 million fish higher than with MRFSS; and, in total, 3.44 million fish are now shown by this pathetic 'repair' of MRFSS.

The true harvest of black sea bass is primarily by Party/Charter.
Even in states like MA where Private Boat harvest is significant, no For-Hire skipper I've spoken with thought Private Boats catch more sea bass except on summer Saturdays when Private Boat effort spikes ..yet MRIP has just these five single wave sets as 2.97 million more sea bass than all Party/Charter's 0.474 million from Cape Hatteras north..
It's quite likely the For-Hire estimate is also too high. Even though we tell NOAA what we caught, they add handsomely to Recreational VTR reported landings - It's the other ghost in NOAA's closet: unreported For-Hire effort.

Did Maryland Shore fishers land 178,000 lbs of sea bass in Sept/Oct 2016 that averaged 1.4 lbs apiece? (No! They caught, near as I can tell, ONE legal sea bass from shore. It was 12.5 inches or a bit over half a pound.)
Did New York Private Boats land six million lbs of sea bass in 2016 & 2017? (No! One state's highly regulated private boats could not land more sea bass than all commercial trawl & trap..)
What's the chance 1.6 M lbs of cod crossed recreational docks from NY Private Boats in hearty winter weather, and their Partyboat fleet didn't get in on it.. (Zero. There's no chance that happened.)
In 2017 MRIP has MA & CT at nearly a million pounds of shore caught striped bass while Rhode Island's shore landings were only 3/4 of a million - but get this - here's the "Average Size" of those shore-caught stripers.. CT 19.6 lbs - MA 33.4 lbs - RI 33.8 lbs..
And the grand prize for "Average" Shore caught stripers is RI in 2018 at 45.1 lbs! (Nice! Would that it were true..)
In Delaware's estimates last year, 2018, sea bass caught from Shore 'averaged' 1.9 lbs! (Yeah, No. That didn't happen either..)

There is No Recreational Marine Species that's not affected by MRIP's estimates. This statistical baloney is positively blinding fisheries science.
It has to stop.
It has to get repaired.
MRIP is the worst possible result from Congress's 2007 intent to repair or replace MRFSS.
MRIP cannot possibly meet the Quality of Information Act's standards.

Regards,
Capt. Monty Hawkins
Partyboat Morning Star

Scup Fishery Information Document

August 2019

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 2018. 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 on scup management, including previous Fishery Information Documents, please visit http://www.mafmc.org/sf-s-bsb/.

Key Facts:

- An assessment update using data through 2016 indicated that the scup stock was not overfished, and overfishing was not occurring in 2016. An updated stock assessment was peer reviewed in August 2019; however, final results from that peer review are not currently available.
- Commercial landings decreased by about 2 million pounds and recreational landings decreased by about 0.6 million pounds from 2017 to 2018.
- Commercial discards decreased by 30% from 2017 to 2018 but remain above average.
- Price per pound increased by $0.12 and total ex-vessel value increased by $0.4 million in 2018.
- Private vessels and anglers fishing from shore caught the majority of the 12.98 million pounds of scup harvested recreationally in 2018.

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.[1]

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.[2, 3]

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's) 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.[1]

Status of the Stock

A benchmark stock assessment was peer reviewed and approved in 2015. An update to that assessment using commercial and recreational fishery data and fishery-independent survey data through 2016 indicated that the stock was not overfished and overfishing was not occurring. Spawning stock biomass (SSB) was estimated to be 396.6 million pounds in 2016, about 2.1 times the target SSB level (Figures 1 and 2).[3,4]

The NEFSC bottom trawl survey biomass indices for scup in fall 2015 and spring 2016 were record highs for the time series (i.e. 1963 - 2017 for the fall survey and 1968 -2017 for the spring survey). Both seasonal indices decreased after 2016. Several state fisheries-independent surveys show similar trends.[5]

Fishing mortality was estimated to be 0.139 in 2016, 37% below the fishing mortality reference point (Figure 1). The 2015 year class (i.e. those scup spawned in 2015) was estimated to be 252 million fish, about 2.1 times the average recruitment from 1984 to 2016. The 2016 year class is estimated to be 65 million fish, about 47% below the average (Figure 2).[4]

Scup recently underwent an operational assessment for use in management for 2020 and beyond and will be final by the end of August. The assessment will include the revised MRIP values and is expected to change the current biological reference points and estimated biomass and fishing mortality. New assessment information was not available during the development of this fishery information document.

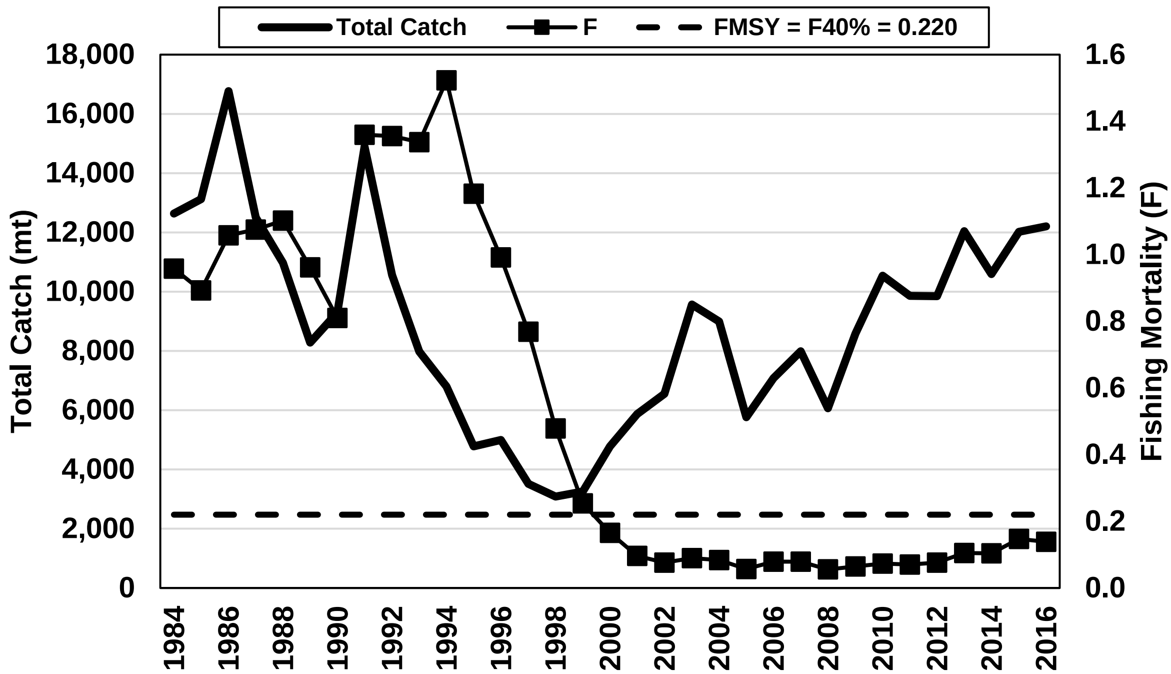

Figure 1: Total fishery catch and fishing mortality rate (F) for fully selected age 3 scup, 1984-2016. The horizontal dashed line is the fishing mortality reference point from the 2015 benchmark stock assessment. Overfishing is occurring when the fishing mortality rate exceeds this threshold.[4]

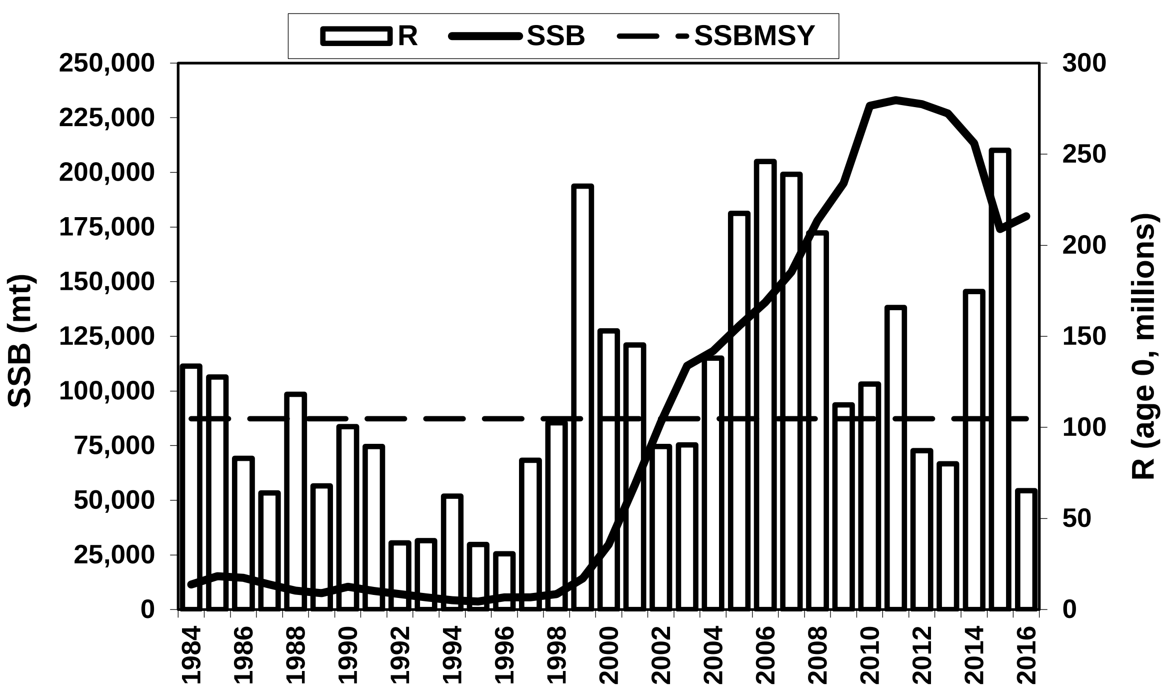

Figure 2: Scup spawning stock biomass and Recruitment, 1984-2016.[4]

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 (i.e. 78% commercial, 22% recreational). 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. Table 1 shows scup catch and landings limits from 2009 through 2019, as well as commercial and recreational landings through 2018.

Total scup landings (commercial and recreational) from Maine to North Carolina peaked in 1981 at over 32 million pounds and reached a low of 6 million pounds in 1998. In 2018, about 26.35 million pounds of scup were landed by commercial and recreational fishermen (Figure 3).[6,7]

Recreational data are available from MRIP. 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, including a transition from a telephone-based effort survey to a mail-based effort survey. The new estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall scup catch and harvest estimates. The RHLs and other management measures through 2019 were based on the old MRIP estimates. Once the new estimates are incorporated into a peer reviewed and accepted stock assessment (expected August 2019), they will be used to derive RHLs and other management measures for future years.

Table 1: Summary of scup catch limits, landings limits, and landings, 2009 through 2019. Values are in millions of pounds unless otherwise noted.

Measure	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ABC	11.70	17.09	51.70	40.88	38.71	35.99	33.77	31.11	28.40	39.14	36.43
TAC[a]	15.54	17.09	31.92	--	--	--	--	--	--	--	--
Commercial ACL	--	--	--	31.89	30.19	28.07	26.35	24.26	22.15	30.53	28.42
Commercial quota[b]	8.37	10.68	20.36	27.91	23.53	21.95	21.23	20.47	18.38	23.98	23.98
Commercial landings	8.20	10.40	15.03	14.88	17.87	15.96	17.03	15.76	15.44	13.37	--
% of commercial quota landed	98%	97%	74%	53%	76%	72%	80%	77%	84%	55%	--
Recreational ACL	--	--	--	8.99	8.52	7.92	7.43	6.84	6.25	8.61	8.01
RHL[b]	2.59	3.01	5.74	8.45	7.55	7.03	6.80	6.09	5.50	7.37	7.37
Recreational landings, old MRIP estimates	3.23	5.97	3.67	4.17	5.37	4.43	4.41	4.26	5.42	5.61	--
% of RHL harvested (based on old MRIP estimates)[c]	125%	198%	64%	49%	71%	63%	65%	70%	98%	76%	--
Recreational landings, new MRIP estimates	6.28	12.48	10.32	8.27	12.64	10.27	12.17	10.00	13.54	12.98	

[a] Prior to implementation of the 2011 Omnibus ACLs and AMs Amendment, the Council specified a Total Allowable Catch (TAC). After implementation of this amendment, the Council specified ABCs instead of TACs. Both terms refer to the total catch limit in a given year. The difference between the TAC and the ABC in 2009 is due to NMFS specifying a revised catch limit after new scientific information became available. In 2011, the difference was due to the Council specifying a more conservative limit than that recommended by the SSC.

[b] Commercial quotas and RHLs reflect the removal of projected discards from the sector-specific ACLs. For 2006-2014, these limits were also adjusted for Research Set Aside.

[c] The percent of RHL harvested is based on a comparison of the RHL to the previous or old MRIP estimates. The RHLs did not account for the new MRIP estimates, which were released in July 2018 and were not incorporated into a stock assessment until 2019; therefore, it would be inappropriate to compare past RHLs to the revised MRIP estimates.

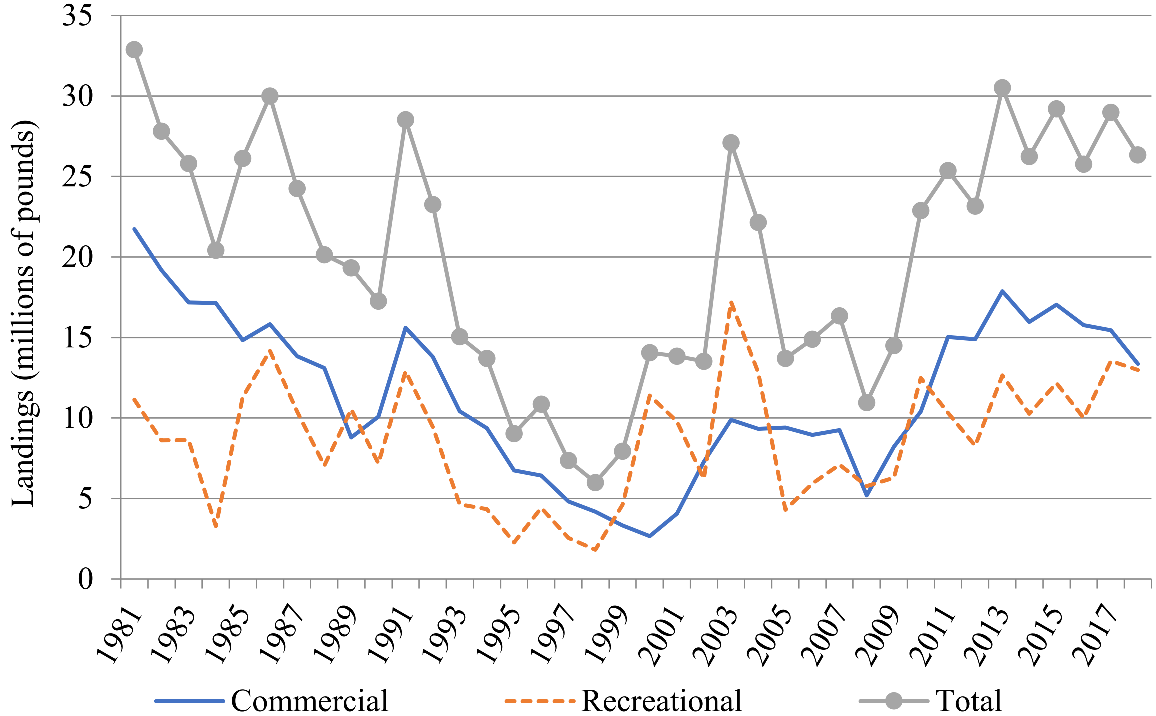

Figure 3: Commercial and recreational scup landings, Maine - North Carolina, 1981-2018. Recreational landings are based on the new MRIP numbers.[6,7]

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 2018, commercial fishermen landed 13.37 million pounds of scup, about 55% of the commercial quota.[6]

In 2018, about 7.26 million pounds of scup were discarded in commercial fisheries, representing a 30% decrease from 2017. Commercial discards increased from 2014-2017, peaking at about 10.42 million pounds in 2017. This was the highest number of discards since at least 1981 and resulted in the 2017 commercial ACL being exceeded by about 17% and the ABC being exceeded by about 11%, despite a quota underage. This increase in discards was likely mainly due to the large 2015 year class, which is the largest year class since at least 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.[5]

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 2). 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 3).

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. The winter II possession limit was 28,500 pounds in 2018 due to quota rollover from the winter I period. 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 2018, about 97% of the commercial scup landings (by weight) reported on VTRs were caught with bottom otter trawls. Pots/traps accounted for about 1.7% of landings while all other gear types each accounted for less than 1% of the 2018 commercial scup landings.[9]

In 2018, 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 (Table 4).

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 suggest that NMFS statistical areas 537, 539, 611, 612, 613, and 616 were responsible for the largest percentage of commercial scup catch in 2018. Statistical area 539, off Rhode Island, had the highest number of trips which caught scup (Table 5, Figure 4).[9]

Over the past two decades, total scup ex-vessel revenue ranged from a low of $2.36 million in 2000 to a high of $10.77 million in 2015. In 2018, 13.37 million pounds of scup were landed by commercial fishermen from Maine through North Carolina. Total ex-vessel value in 2018 was $9.70 million, resulting in an average price per pound of $0.73. All revenue and price values were adjusted to 2018 dollars to account for inflation.[6]

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 also influence price. The highest average price per pound over the past two decades was $1.46 ($1.00 in 2018 dollars) and occurred in 1998. The lowest mean price per pound was $0.55 ($0.50 in 2018 dollars) and occurred in 2013.[6]

Over 176 federally-permitted dealers from Maine through North Carolina purchased scup in 2018. More dealers in New York purchased scup than in any other state (Table 6).[6]

At least 100,000 pounds of scup were landed by commercial fishermen in 17 ports in 6 states in 2018. These ports accounted for approximately 93% of all 2018 commercial scup landings. Point Judith, Rhode Island was the leading port, both in terms of landings and number of vessels landing scup (Table 7).[6] The ports and communities with the greatest participation in the scup fishery are described in Amendment 13 to the FMP (available at **http://www.mafmc.org/sf-s-bsb/**). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at **www.mafmc.org/communities/**.

A moratorium permit is required to fish commercially for scup. In 2018, 618 vessels held commercial moratorium permits for scup.[10]

Table 2: 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	% of 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*	38.95%	State-specific
Winter II	October 1 – December 31*	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.

*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 3: 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%

Table 4: Changes in scup small mesh incidental possession limit for the commercial fishery from 2018-2019.

<table>
<tr><th></th><th>Jan</th><th>Feb</th><th>Mar</th><th colspan="2">Apr</th><th>May</th><th colspan="2">June</th><th>July</th><th>Aug</th><th>Sept</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
<tr><td>2018</td><td colspan="5">1,000 lb</td><td colspan="6">200 lb</td><td colspan="3">1,000 lb</td></tr>
<tr><td>2019</td><td colspan="4">1,000 lb</td><td colspan="3">2,000 lb</td><td colspan="4">200 lb</td><td colspan="3">1,000 lb</td></tr>
</table>

Table 5: Statistical areas which accounted for at least 5% of the total commercial scup catch (by weight) in 2018, with associated number of trips.[9]

Statistical area	% of 2018 commercial scup catch	Number of trips
616	27%	823
537	20%	988
539	14%	2,628
613	14%	1,217
611	8%	2,016
612	7%	627

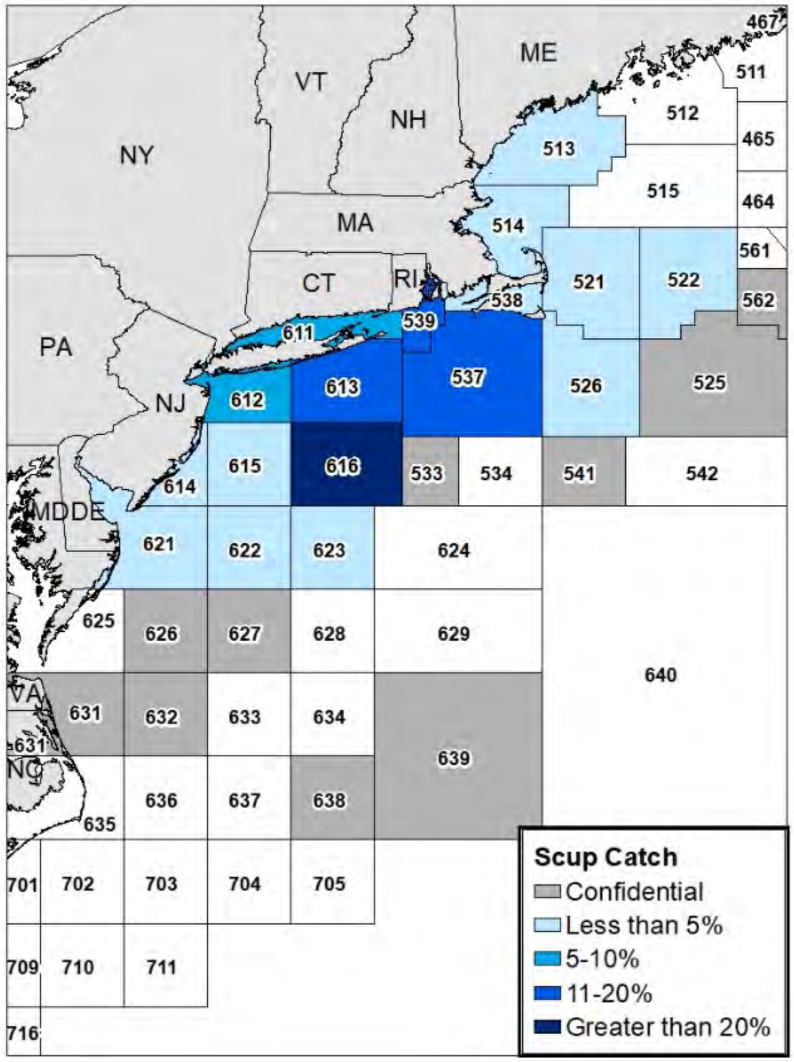

Figure 4: Proportion of scup catch by statistical area in 2018. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. [9]

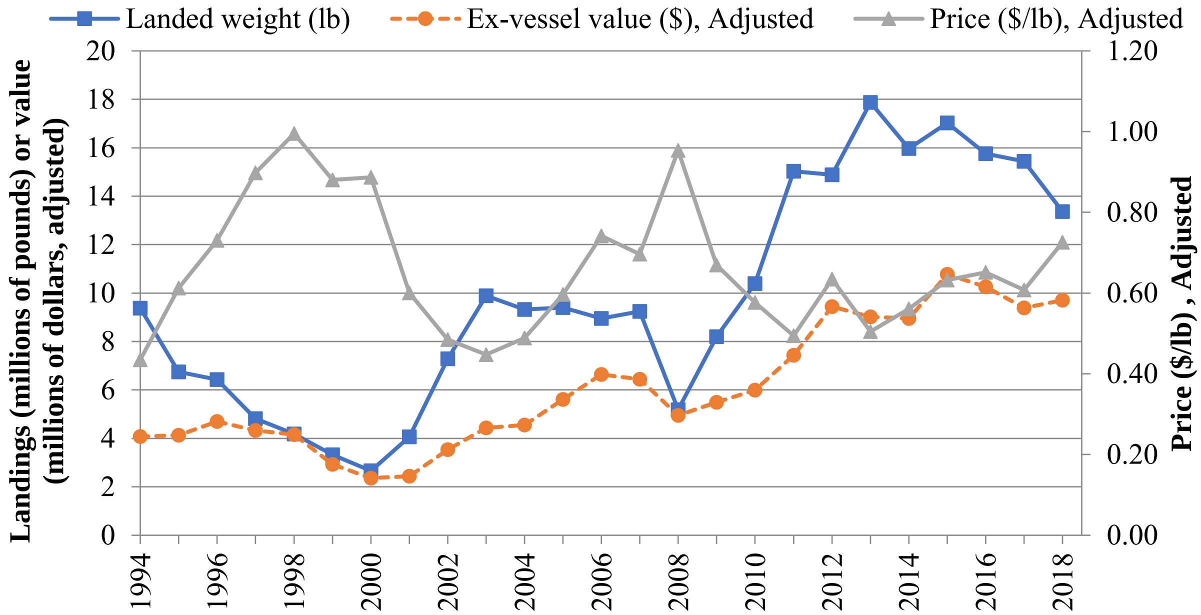

Figure 5: Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2018. Ex-vessel value and price are adjusted to show real 2018 dollars using the Gross Domestic Product Price Deflator.[6]

Table 6: Number of dealers per state which reported purchases of scup in 2018. C = Confidential.[6]

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of Dealers	C	32	31	14	48	20	C	5	11	15

Table 7: Ports reporting at least 100,000 pounds of scup landings in 2018, based on NMFS dealer data. C = Confidential.[6]

Port	Scup Landings (lb)	% of total commercial scup landings	Number of vessels
POINT JUDITH, RI	3,947,294	30%	136
MONTAUK, NY	2,406,758	18%	78
PT. PLEASANT, NJ	2,159,292	16%	37
NEW BEDFORD, MA	1,116,915	8%	60
STONINGTON, CT	428,232	3%	17
LITTLE COMPTON, RI	394,109	3%	11
MATTITUCK, NY	341,233	3%	4
NEW LONDON, CT	264,862	2%	10

HAMPTON, VA	258,591	2%	41
HYANNIS, MA	179,220	1%	10
NEWPORT, RI	154,140	1%	12
AMMAGANSETT, NY	153,223	1%	C
BELFORD, NJ	144,198	1%	20
HAMPTON BAYS, NY	134,307	1%	33
CHINCOTEAGUE, VA	132,210	1%	13
CAPE MAY, NJ	127,329	1%	24
GREENPORT, NY	102,215	1%	C

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. 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.[8] As previously stated, commercial scup discards increased by 71% between 2016 and 2017, likely due to the large 2015 year class.[5] Although discards decreased by about 30% in 2018, they still remain well above average. Further analysis is needed to evaluate the impact of the GRA modification on commercial scup discards in 2017 and 2018.

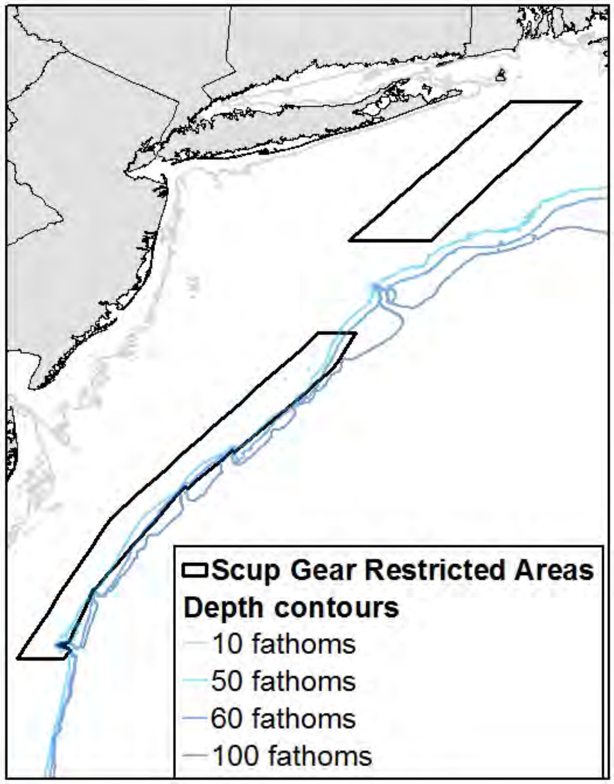

Figure 6: The Scup Gear Restricted Areas.

Recreational Fishery

The recreational scup fishery is managed on a coast-wide basis in federal waters. Current federal regulations include a minimum size of 9 inches total length, a year-round open season, and a possession limit of 50 scup (Table 8). These measures have been unchanged since 2015.

As previously described, MRIP released a revised time series of recreational fishery data in July 2018. The revised catch, harvest, and effort estimates for scup are substantially higher than the previous estimates. Information presented in this section is based on the new estimates.

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 recreational harvest limit. 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 and there were very minor changes in the state regulations from 2018 to 2019 (Tables 9 and 10).

From 1981-2018, recreational catch of scup 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. Recreational anglers from Maine through North Carolina caught an estimated 30.37 million scup and landed 14.55 million scup (about 12.98 million pounds) in 2018 (Table 11).[7]

Vessels carrying passengers for hire in federal waters must obtain a federal party/charter permit. In 2018, 731 vessels held scup federal party/charter permits. Many of these vessels also held party/charter permits for summer flounder and black sea bass.[10]

Most recreational scup catch occurs in state waters during the warmer months when the fish migrate inshore. Between 2016 and 2018, about 96% of recreational scup landings (in numbers of fish) occurred in state waters and about 4% occurred in federal waters (Table 12). New York, Massachusetts, Connecticut, Rhode Island, and New Jersey accounted for over 99.9% of recreational scup harvest in 2018 (Table 13).[7]

About 48% of recreational scup landings (in numbers of fish) in 2018 were from anglers who fished on private or rental boats. About 9% were from anglers fishing on party or charter boats, and about 43% were from anglers fishing from shore (Table 14).[7]

Table 8: Federal recreational measures for scup, 2005-2019.

Regulation	2005-2007	2008-2009	2010-2011	2012	2013	2014	2015-2019
Minimum size (total length)	10 in.	10.5 in.	10.5 in.	10.5 in.	10 in.	9 in.	9 in.
Possession limit	50	15	10	20	30	30	50
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

Table 9: State recreational fishing measures for scup in 2018.

State	Minimum Size (inches)	Possession Limit	Open Season
MA	9	30 fish; 150 fish/vessel with 5+ anglers on board	May 1-December 31
MA (party/charter)	9	45 fish	May 1-June 30
		30 fish	July 1-December 31
RI (private & shore)	9	30 fish	May 1-December 31
RI shore program (7 designated shore sites)	8		
RI (party/charter)	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
CT (private & shore)	9	30 fish	May 1-December 31
CT shore program (46 designated shore sites)	8		
CT (party/charter)	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
NY (private & shore)	9	30 fish	May 1-December 31
NY (party/charter)	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
NJ	9	50 fish	January 1-December 31
DE	8	50 fish	January 1-December 31
MD	8	50 fish	January 1-December 31
VA	8	30 fish	January 1-December 31
NC, North of Cape Hatteras (N of 35° 15’N)	8	50 fish	January 1-December 31

Table 10: State recreational fishing measures for scup in 2019.

State	Minimum Size (inches)	Possession Limit	Open Season
MA (private & shore)	9	30 fish; 150 fish/vessel with 5+ anglers on board	April 13-December 31
MA (party/charter)	9	30 fish	April 13-April 30; July 1-December 31
		50 fish	May 1-June 30
RI (private & shore)	9	30 fish	January 1-December 31
RI shore program (7 designated shore sites)	8		
RI (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
CT (private & shore)	9	30 fish	January 1-December 31
CT shore program (45 designed shore sites)	8		
CT (party/charter)	9	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	9	50 fish	January 1- December 31
DE	8	50 fish	January 1-December 31
MD	8	50 fish	January 1-December 31
VA	8	30 fish	January 1-December 31
NC, North of Cape Hatteras (N of 35° 15’N)	8	50 fish	January 1-December 31

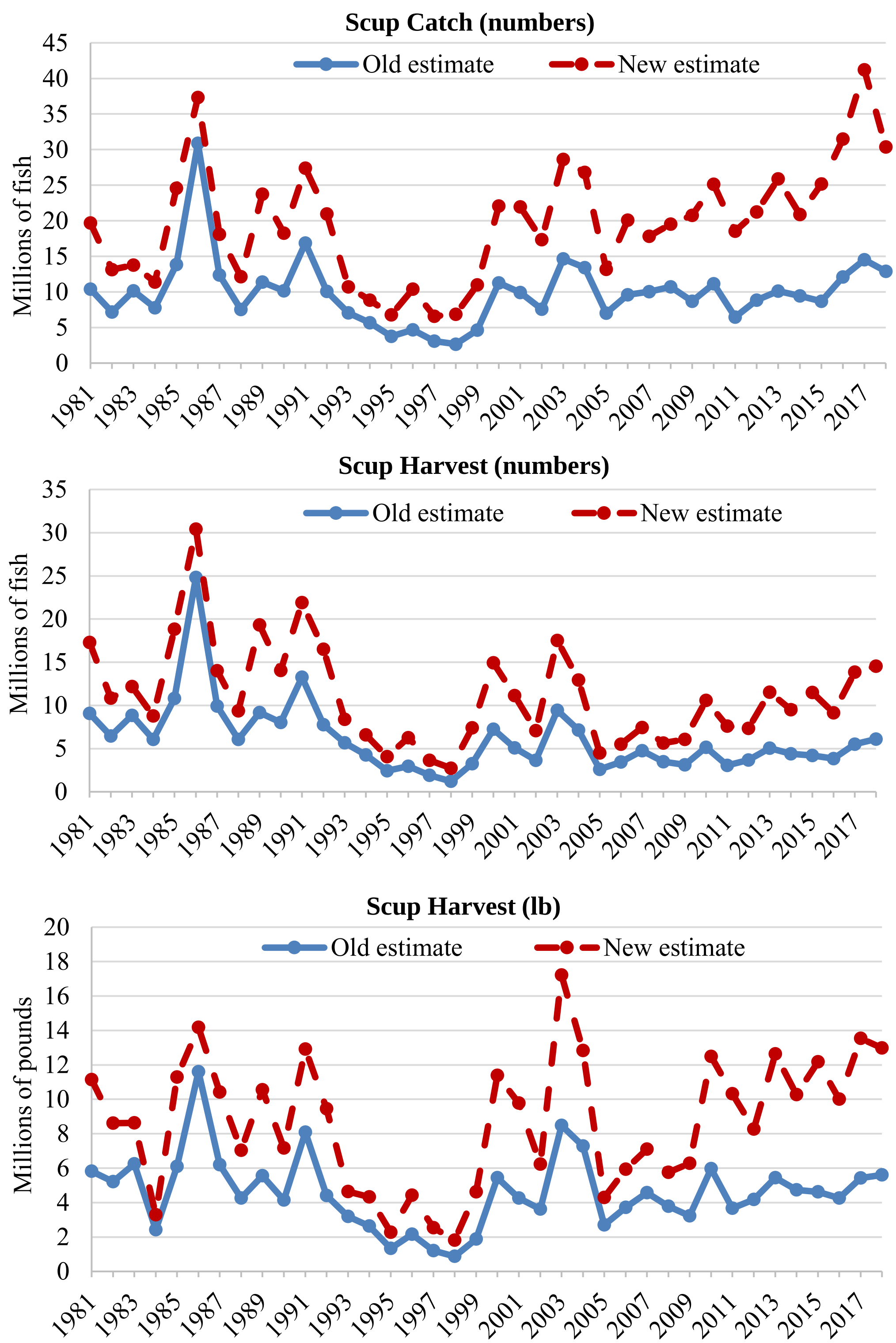

Figure 7: Old and new MRIP estimates of recreational scup catch in numbers of fish and harvest in numbers of fish and pounds, ME - NC, 1981 - 2018. 2018 old MRIP values are back-calibrated, as MRIP stopped producing estimates using the old methodology after 2017.[7]

Table 11: Estimated recreational catch and harvest of scup, Maine - North Carolina, 2009- 2018, based on the revised MRIP estimates.[7]

Year	Recreational catch (millions of fish)	Recreational harvest (millions of fish)	Recreational harvest (millions of pounds)	% of catch retained
2009	20.75	6.06	6.28	29%
2010	25.13	10.60	12.48	42%
2011	18.52	7.60	10.32	41%
2012	21.24	7.33	8.27	35%
2013	25.88	11.55	12.64	45%
2014	20.89	9.49	10.28	45%
2015	25.15	11.50	12.17	46%
2016	31.49	9.14	10.00	29%
2017	41.20	13.85	13.54	34%
2018	30.38	14.55	12.98	48%

Table 12: Estimated percent of scup (in numbers of fish) caught by recreational fishermen in state and federal waters, Maine - North Carolina, 2009 - 2018, based on the revised MRIP estimates.[7]

Year	State waters	Federal waters
2009	95.6%	4.4%
2010	94.4%	5.6%
2011	98.5%	1.5%
2012	99.7%	0.3%
2013	96.3%	3.7%
2014	96.5%	3.5%
2015	98.9%	1.1%
2016	93.5%	6.5%
2017	96.0%	4.0%
2018	96.2%	3.8%
2009-2018 average	**96.6%**	**3.4%**
2016-2018 average	**95.2%**	**4.8%**

Table 13: Recreational scup harvest by state, 2016- 2018. Percentages were calculated based on numbers of fish using the revised MRIP estimates.[7]

State	2016	2017	2018	2016-2018 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	20%	15%	22%	19%
Rhode Island	17%	10%	16%	14%
Connecticut	15%	12%	21%	16%
New York	40%	47%	37%	41%
New Jersey	7%	16%	3%	9%
Delaware	0%	0%	0%	0%
Maryland	0%	0%	0%	0%
Virginia	2%	0%	0%	1%
North Carolina	0%	0%	0%	0%

Table 14: Scup harvest (in numbers of fish) by recreational fishing mode, Maine - North Carolina, 1981 - 2018, based on the revised MRIP estimates. Some percentages do not sum to 100% due to rounding.[7]

Year	Shore	Party/charter	Private/rental	Total number
1981	17%	5%	77%	17,309,466
1982	27%	19%	54%	10,833,209
1983	48%	15%	37%	12,189,399
1984	39%	1%	59%	8,780,949
1985	17%	1%	82%	18,840,079
1986	20%	5%	75%	30,431,320
1987	13%	2%	85%	14,030,573
1988	20%	7%	73%	9,388,288
1989	25%	10%	64%	19,324,847
1990	18%	9%	74%	14,040,609
1991	31%	7%	62%	21,904,578
1992	27%	8%	65%	16,496,804
1993	17%	18%	65%	8,403,033
1994	14%	9%	77%	6,614,976
1995	31%	10%	59%	4,063,825
1996	8%	5%	86%	6,266,685
1997	18%	13%	69%	3,664,972
1998	23%	5%	72%	2,738,577
1999	14%	15%	71%	7,413,091
2000	19%	8%	73%	14,942,137
2001	33%	12%	54%	11,132,587
2002	31%	15%	54%	7,074,231
2003	17%	9%	74%	17,519,824
2004	25%	12%	63%	12,943,178
2005	24%	4%	73%	4,499,104
2006	20%	10%	71%	5,521,170
2007	15%	8%	77%	7,459,506
2008	22%	20%	58%	5,650,033
2009	14%	18%	68%	6,064,112
2010	18%	13%	70%	10,598,648
2011	22%	7%	72%	7,598,242
2012	14%	16%	69%	7,334,845
2013	34%	15%	51%	11,547,027
2014	20%	15%	65%	9,493,673
2015	17%	8%	76%	11,498,783
2016	34%	10%	56%	9,143,579
2017	23%	11%	65%	13,845,319
2018	43%	9%	48%	14,546,549
1981-2018 average	**23%**	**10%**	**67%**	**11,082,838**
2016-2018 average	**34%**	**10%**	**56%**	**12,511,816**

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[2] Northeast Data Poor Stocks Working Group. 2009. The northeast data poor stocks working group report, part A: skate species complex, deep sea red crab, Atlantic wolf fish, scup, and black sea bass. Northeast Fish Science Center Reference Document 09-02; 496 p. Available at: http://www.nefsc.noaa.gov/publications/crd/crd0902/.

[3] Northeast Fisheries Science Center. 2015. 60th Northeast Regional Stock Assessment (60th SAW) assessment report. Northeast Fisheries Science Center Reference Document 15-08. Available at: http://www.nefsc.noaa.gov/publications/.

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[6] Unpublished NMFS dealer data (i.e., "AA tables", which include both state and federal dealer data).

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[8] Terceiro, M., A. Miller. 2014. Commercial fishery scup discarding and the Gear Restricted Areas (GRAs). White paper for the Mid-Atlantic Fishery Management Council. 30 p.

[9] Unpublished NMFS Vessel Trip Report data.

[10] Unpublished NMFS permit data.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 25, 2019

To: Council and Board

From: Kiley Dancy, Staff

Subject: Summer Flounder Specifications Review for 2020

The Council and Board will review previously adopted 2020 specifications for summer flounder on Tuesday, October 8. Materials listed below are provided for the Council and Board's consideration of this agenda item.

Please note that some materials are behind other tabs.

1) Monitoring Committee recommendation summary *(behind Tab 11)*
2) September 2019 Scientific and Statistical Committee meeting report *(behind Tab 18)*
3) Staff memo on 2020 summer flounder specifications dated August 26, 2019
4) Summer Flounder Data Update for 2019
5) August 2019 Advisory Panel Fishery Performance Report (*behind Tab 11)*
6) Additional written comments from advisors related to summer flounder, scup, and black sea bass Fishery Performance Reports *(behind Tab 11)*
7) Additional public (non-advisor) comments received on summer flounder as of September 25, 2019
8) 2019 Summer Flounder Fishery Information Document

An Advisory Panel meeting summary from their September 24, 2019 webinar, as well as additional written comments related to this meeting, will be added to the supplemental meeting materials on the October meeting page on the Council's website.

Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman ǀ G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: August 26, 2019

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Review of Summer Flounder Specifications for 2020

Executive Summary

In 2019, specifications for summer flounder were revised mid-year based on the results of a new benchmark stock assessment, which was developed and peer reviewed in 2018 through the 66th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC 66; NEFSC 2019).[1] The assessment incorporates data through 2017, including the recently revised time series (1981-2017) of recreational catch provided by the Marine Recreational Information Program (MRIP).[2]

The November 2018 stock assessment indicates that the summer flounder stock was not overfished, and overfishing was not occurring in 2017. Spawning stock biomass (SSB) was estimated to be 98.22 million lb (44,552 mt) in 2017, 78% of SSB at maximum sustainable yield (SSB_{MSY} = 126.01 million lb/57,159 mt). The fishing mortality rate (F) in 2017 was 0.334, 25% below the fishing mortality threshold reference point ($F_{MSY\ PROXY} = F_{35\%} = 0.448$).

Peer review and assessment summary reports were made available in February 2019, and in March 2019, the Council and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) approved constant three-year catch and landings limits for 2019-2021 based on a three-year averaging approach. These specifications were implemented via interim final rule on May 17, 2019 (84 FR 22392).

The measures currently implemented include an Acceptable Biological Catch (ABC) for 2019-2021 of 25.03 million lb or 11,354 mt. This ABC and the corresponding sector-specific catch and landings limits for 2020 may remain unchanged if the Scientific and Statistical Committee (SSC), Council, and Board determine that no changes are warranted. Alternatively, after reviewing the July 2019 data update for

[1] Northeast Fisheries Science Center (NEFSC). 2019. 66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 19-01; 40 p. Available from: https://www.nefsc.noaa.gov/publications/crd/crd1908/.

[2] 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 for most years are several times higher than the previous estimates for shore and private boat modes.

summer flounder (updated catch, landings, and fishery independent survey indices through 2018), the SSC may determine that a revised ABC is warranted, or request additional information to consider revisions to the 2020 ABC.

Similarly, the Monitoring Committee will review recent fishery performance and make a recommendation to the Council and Board regarding any potential modifications to the implemented 2020 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs) as well as the set of commercial management measures that can be modified through specifications.

The currently implemented 2020 catch and landings limits are shown in Table 1. The methods used to derive these measures are described in more detail later in this memo.

Table 1: Currently implemented catch and landings limits for summer flounder for 2020. These measures are identical to those implemented for 2019 and 2021, with the exception of the OFL which varies slightly in each year. The sector-specific catch and landings limits are initial limits prior to any deductions for past overages.

Measure	**2020**		**Basis**
	mil lb	mt	
OFL	30.94	14,034	Stock projections
ABC	25.03	11,354	SSC recommendation for averaged approach with projections sampling from recent 7-year recruitment series
ABC Landings Portion	19.21	8,715	Stock projections
ABC Discards Portion	5.82	2,639	Stock projections
Expected Commercial Discards	2.00	907	34% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Expected Recreational Discards	3.82	1,732	66% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Commercial ACL	13.53	6,136	60% of ABC landings portion (FMP allocation) + expected commercial discards
Commercial ACT	13.53	6,136	No deduction from ACL for management uncertainty
Commercial Quota	11.53	5,229	Commercial ACT, minus expected commercial discards
Recreational ACL	11.51	5,218	40% of ABC landings portion (FMP allocation) + expected recreational discards
Recreational ACT	11.51	5,218	No deduction from ACL for management uncertainty
RHL	7.69	3,486	Recreational ACT, minus expected recreational discards

As described below, staff recommend no changes to the currently implemented catch and landings limits for 2020. Staff also recommend no changes to the commercial minimum size or mesh exemption requirements for 2020. As described below in "Commercial Management Measures," staff preliminarily recommend consideration of phasing out the 6" square minimum mesh size regulation, leaving the 5.5" diamond minimum mesh size in place. Staff will seek Advisory Panel input on this subject prior to the Monitoring Committee discussion.

Introduction

The Magnuson-Stevens Act requires the Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for 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. In addition, the Monitoring Committee established by the Fishery Management Plan (FMP) is responsible for developing recommendations for management measures designed to achieve the recommended catch limits. The SSC is responsible for recommending ABCs that address scientific uncertainty, while the Monitoring Committee recommends ACTs that address management uncertainty and management measures to constrain landings to the ACTs.

In early 2019, the SSC recommended revised 2019 and new 2020-2021 specifications based on the 2018 benchmark stock assessment results. The Council and Board adopted three-year specifications for 2019-2021 based on an averaged ABC approach, where the initial catch and landings limits in each of the three years are identical.

The SSC is asked to review the 2020 ABC and recommend changes or request additional information if necessary. Similarly, the Monitoring Committee will review the previously implemented 2020 ACL and ACT recommendations, as well as the commercial quota and recreational harvest limit, recommending any changes as needed. 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). The Council will meet jointly with the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) in October 2019 to review the SSC, Monitoring Committee, and Advisory Panel recommendations. In this memorandum, information is presented to assist the SSC and Monitoring Committee in developing recommendations for the Council and Board to consider for the 2020 fishing year for summer flounder.

Additional relevant information about the fishery and past management measures is presented in the Fishery Performance Report for summer flounder developed by the Council and Commission Advisory Panels, as well as in the corresponding Summer Flounder Fishery Information Document prepared by Council staff.[3]

[3] The Fishery Information Document is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11. The Fishery Performance Report will be developed by advisors during their meeting on August 29, 2019 and will be posted to the same website once it is finalized.

Recent Catch and Landings

Reported 2018 landings in the commercial fishery were approximately 6.14 million lb (2,787 mt), about 95% of the adjusted commercial quota of 6.44 million lb (2,567 mt). The 2018 commercial ACL (7.51 million pounds or 3,404 mt) was exceeded by about 11%, with 2018 commercial catch estimated at 8.34 million pounds (3,784 mt) according to the 2019 data update.

Recreational harvest in 2018 was 7.60 million (3,447 mt), based on revised MRIP estimates. These estimates cannot fairly be compared to the 2018 RHL, which was set using the old assessment that incorporated old MRIP estimates. 2018 recreational landings back-calibrated to the previous MRIP methodology show that 2018 harvest would have been estimated at 3.35 million pounds under the old methodology, about 76% of the 2018 recreational harvest limit (4.42 million lb or 2,004 mt). Back-calibrated estimates of total dead recreational catch are not currently available for comparison to the 2018 recreational ACL, or for inclusion in a comparison of total catch relative to the ABC. NMFS will perform their own 2018 ACL overage evaluations as part of the rulemaking for 2020 specifications. The overage amounts calculated by NMFS may vary from those shown here.

The 2019 commercial landings as of the week ending August 10, 2019, indicate that 48% of the 2019 coastwide commercial quota has been landed (Table 2). Last year, 67% of the 2018 commercial quota had been landed as of August 11. The 2019 percentage of quota landed is lower than average likely due to the mid-year increase in commercial quota.

Table 2: The 2019 state-by-state commercial quotas and the amount of summer flounder landed by commercial fishermen, in each state as of week ending August 10, 2019.

State	Cumulative Landings (lb)	Quota (lb)[a]	Percent of Quota (%)
ME	0	5,224	0
NH	0	51	0
MA	297,361	745,407	40
RI	1,250,983	1,722,462	73
CT	170,452	247,895	69
NY	528,330	839,869	63
NJ	578,955	1,840,176	31
DE	0		0
MD	52,749	223,954	24
VA	1,086,930	2,378,210	46
NC	1,329,010	2,970,242	45
Other	0	0	0
Totals	**5,294,770**	**10,973,490**	**48**

[a]Quotas adjusted for overages. Source: NMFS Weekly Quota Report for week ending August 10, 2019.

As of this memo, preliminary recreational estimates for 2019 are available through wave 3 (May/June). Preliminary estimates indicate that through June 2019, approximately 1.80 million pounds of summer flounder have been landed, about 23% of the 2019 RHL (Table 3).

Table 3: Preliminary summer flounder recreational harvest through wave 3 (June 2019) by state.

State	Preliminary Harvest (lb)
MASSACHUSETTS	11,613
RHODE ISLAND	402,311
CONNECTICUT	73,945
NEW YORK	586,433
NEW JERSEY	522,033
DELAWARE	32,961
MARYLAND	36,706
VIRGINIA	116,161
NORTH CAROLINA	21,915
Total	**1,804,078**

Stock Status and Biological Reference Points

The recent benchmark stock assessment was developed through the 66th SAW process, and peer reviewed at the 66th SARC from November 27-30, 2018. The assessment incorporated the revised time series of recreational catch from MRIP, which is 30% higher on average compared to the previous summer flounder estimates for 1981-2017. The MRIP estimate revisions account for changes in both the angler intercept survey and recreational effort survey methodologies. While fishing mortality rates were not strongly affected by incorporating these revisions, increased recreational catch resulted in increased estimates of stock size compared to past assessments.

The biological reference points for summer flounder as revised through the SAW/SARC 66 process include a fishing mortality threshold of $F_{MSY} = F_{35\%}$ (as the F_{MSY} proxy) = 0.448, and a biomass reference point of $SSB_{MSY} = SSB_{35\%}$ (as the SSB_{MSY} proxy) = 126.01 million lb = 57,159 mt. The minimum stock size threshold (1/2 SSB_{MSY}), is estimated to be 63.01 million lb (28,580 mt; Figure 1).

Assessment results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2017 relative to the biological reference points. Fishing mortality on the fully selected age 4 fish ranged between 0.744 and 1.622 during 1982-1996 and then decreased to 0.245 in 2007. Since 2007 the fishing mortality rate (F) has increased, and in 2017 was estimated at 0.334, below the SAW 66 F_{MSY} proxy of $F_{35\%}$ = 0.448 (Figure 2). The 90% confidence interval for F in 2017 was 0.276 to 0.380.

SSB decreased from 67.13 million lb (30,451 mt) in 1982 to 16.33 million lb (7,408 mt) in 1989, and then increased to 152.46 million lb (69,153 mt) in 2003. SSB has decreased since 2003 and was estimated to be 98.22 million lb (44,552 mt) in 2017, about 78% of SSB_{MSY} = 126.01 million lb (57,159 mt), and 56% above the ½ SSB_{MSY} proxy = ½ $SSB_{35\%}$ = 63.01 million lb (28,580 mt; Figure 1). The 90% confidence interval for SSB in 2017 was 39,195 to 50,935 mt.

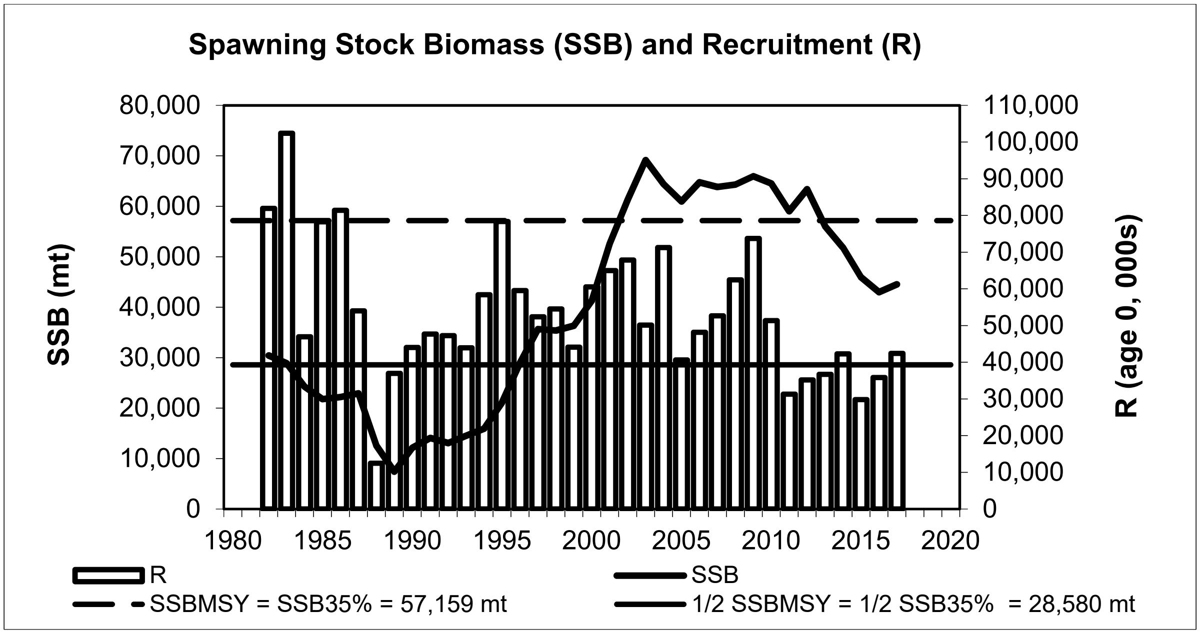

Figure 1: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) 1980-2017. The horizontal dashed line is the 2018 SAW66 recommended target biomass reference point proxy, $SSB_{MSY} = SSB_{35\%} = 57{,}159$ mt. The horizontal solid line is the 2018 SAW66 recommended threshold biomass reference point proxy ½ SSB_{MSY} = ½ $SSB_{35\%}$ = 28,580 mt. Source: NEFSC 2019.

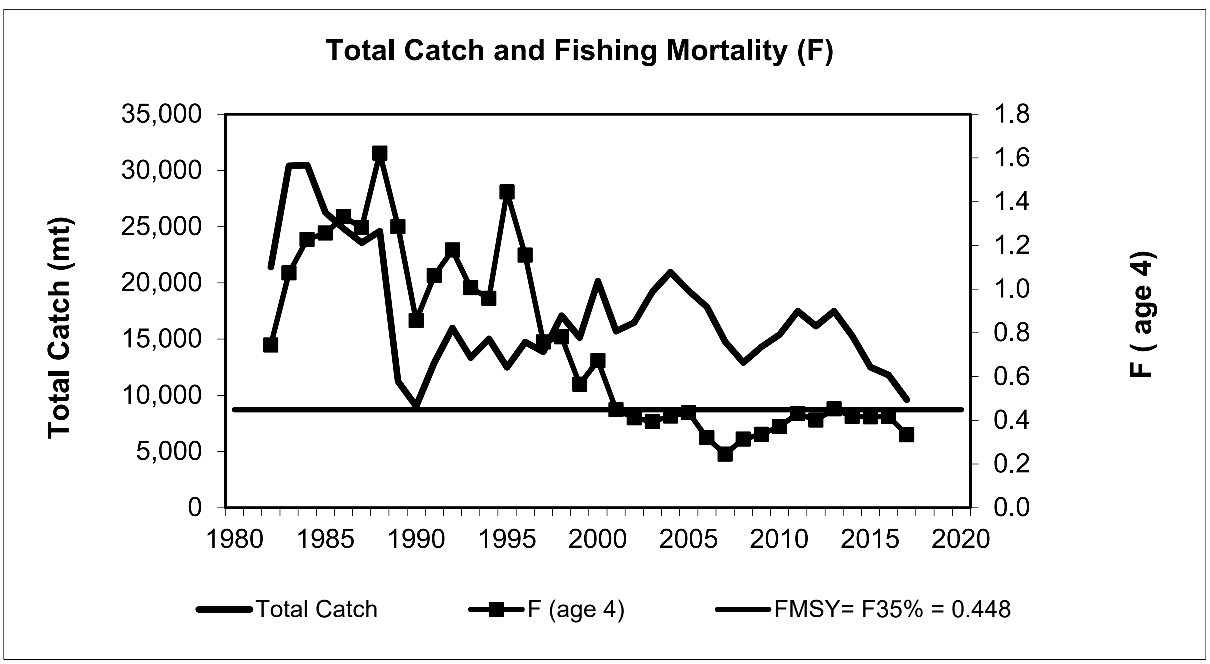

Figure 2: Total fishery catch (mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder. The horizontal solid line is the 2018 SAW66 recommended fishing mortality reference point proxy FMSY = F35% = 0.448. Source: NEFSC 2019.

Recruitment of juvenile summer flounder has been below-average since about 2011, although the driving factors behind this trend have not been identified. Bottom trawl survey data also indicate a recent trend of decreasing length and weight at age, which implies slower growth and delayed maturity. These factors affected the change in biological reference points used to determine stock status.

In July 2019, Northeast Fisheries Science Center (NEFSC) provided a data update for 2019[4], including updated catch and landings information as well as survey indices through 2018. The fishery independent survey data indicates that aggregate stock size increased from 2017 to 2018, and that recruitment in 2018 was estimated to be above average. Most state and federal survey indices of abundance increased slightly to moderately between 2017 and 2018. The Delaware index peaked again in 2018, approximately doubling from the next highest estimate from 2017.

Review of Prior SSC Recommendations

In February 2019, the SSC recommended, and the Council and Board adopted, three-year ABCs for summer flounder for 2019-2021, based on new stock status information and projections from the 2018 assessment. The recommendations for 2019 replaced the SSC's prior 2019 recommendations (from July 2018), which were intended to be implemented on an interim basis.

As requested by the Council, the SSC recommended two alternative sets of three-year ABCs based on the SAW66 assessment: ABCs for 2019-2021 fishing years derived by the "typical" approach resulting in ABCs varying each year, and a constant ABC for all three fishing years derived by averaging the three ABCs resulting from the "typical" approach. The Council and Board ultimately adopted ABCs based on the three-year averaging approach.

The SSC indicated that the approach to estimating uncertainty in the OFL had not changed since the previous benchmark (SAW/SARC 57). Accordingly, the SSC maintained its determination that the assessment should be assigned an "SSC-modified OFL (overfishing limit) 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 CV, because: (1) the latest benchmark 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 exhaustive investigations of alternate model structures affirm the specification of the 60% OFL CV by the SSC.

The SSC accepted the OFL proxy ($F_{35\%} = 0.448$) used in the assessment. Given recent trends in recruitment for summer flounder, the SSC recommended the use of the most recent 7-year recruitment series for OFL projections, because near-term future conditions are more likely to reflect recent recruitment patterns than those in the entire 36-year time series.

At the time of the SSC meeting, OFLs under the averaged approach could not be developed due to the need to further develop the methodology; however, NEFSC staff provided these OFLs following the meeting after receiving input from the SSC on their calculation. The OFLs for both the annually varying

[4] Available at http://www.mafmc.org/s/Summer_flounder_2019_Data_Update.pdf.

and averaged approaches are shown in Table 4, along with the ABCs resulting from the application of the Council's risk policy using a 60% CV and a projected SSB/SSB_{MSY} below 100% . The probability of overfishing (P*) in each year is also shown.

Table 4: SSC-recommended OFLs, ABCs, and P* values for both the averaged and annually varying approaches.

	3-Year Averaged Approach (adopted by Council and Board)			Annually Varying Approach		
Year	OFL	ABC	P*	OFL	ABC	P*
2019	30.00 mil lb (13,609 mt)	25.03 mil lb (11,354 mt)	0.372	30.00 mil lb (13,609 mt)	23.52 mil lb (10,667 mt)	0.330
2020	30.94 mil lb (14,034 mt)		0.351	31.36 mil lb (14,226 mt)	25.48 mil lb (11,559 mt)	0.354
2021	31.67 mil lb (14,367 mt)		0.336	31.96 mil lb (14,496 mt)	26.10 mil lb (11,837 mt)	0.357

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.
- 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.

Staff Recommendation for 2020 ABC

Staff recommend maintaining the previously implemented specifications for summer flounder for the 2020 fishing year, as described in Table 1, including a 2020 ABC of 25.03 million pounds (11,354 mt). The 2019 data update indicates little evidence to suggest that stock condition has changed substantially from what was indicated in the 2018 benchmark assessment. Another data update will be requested in 2020 to review specifications implemented for 2021. In 2021, an assessment update is expected in order to inform specifications for 2022-2023.

Sector-Specific Catch and Landings Limits

Recreational and Commercial Annual Catch Limits

The summer flounder ABC includes both landings and discards, and is divided into the commercial and recreational ACLs for summer flounder (Figure 3). Based on the allocation percentages in the FMP, 60% of the amount of the ABC expected to be landed are allocated to the commercial fishery, and 40% to the recreational fishery. Discards are apportioned based on the discards contribution from each fishing sector using a 3-year moving average percentage.

This requires the assumption that patterns in landings and discards will be similar in future years as in past years. Changes in regulations, availability, year class strength, market demand, and other factors can impact patterns in landings and discards from one year to the next. The Monitoring Committee should discuss the methodology for calculating expected discards during their September 2019 meeting.

When 2019-2021 specifications were set in early 2019, the most recent three-year period of available data was 2015-2017. The discard percentages by sector were calculated using the revised MRIP data, which increased both the recreational harvest and discards, modifying the percent of discards attributable to the recreational sector. Using revised MRIP data, the proportion of discards from 2015-2017 are estimated at 66% from the recreational fishery and 34% from the commercial fishery (Table 1).

With the 2019 data update now available, discard information can be evaluated through 2018. The three-year average of discards by sector from 2016-2018 is estimated at 64% from the recreational fishery and 36% from the commercial fishery. The Monitoring Committee could consider modifying the sector-specific ACLs accordingly (slightly modifying the expected discards for each sector); however, staff recommend maintaining the current distribution of projected discards given that the differences are minor.

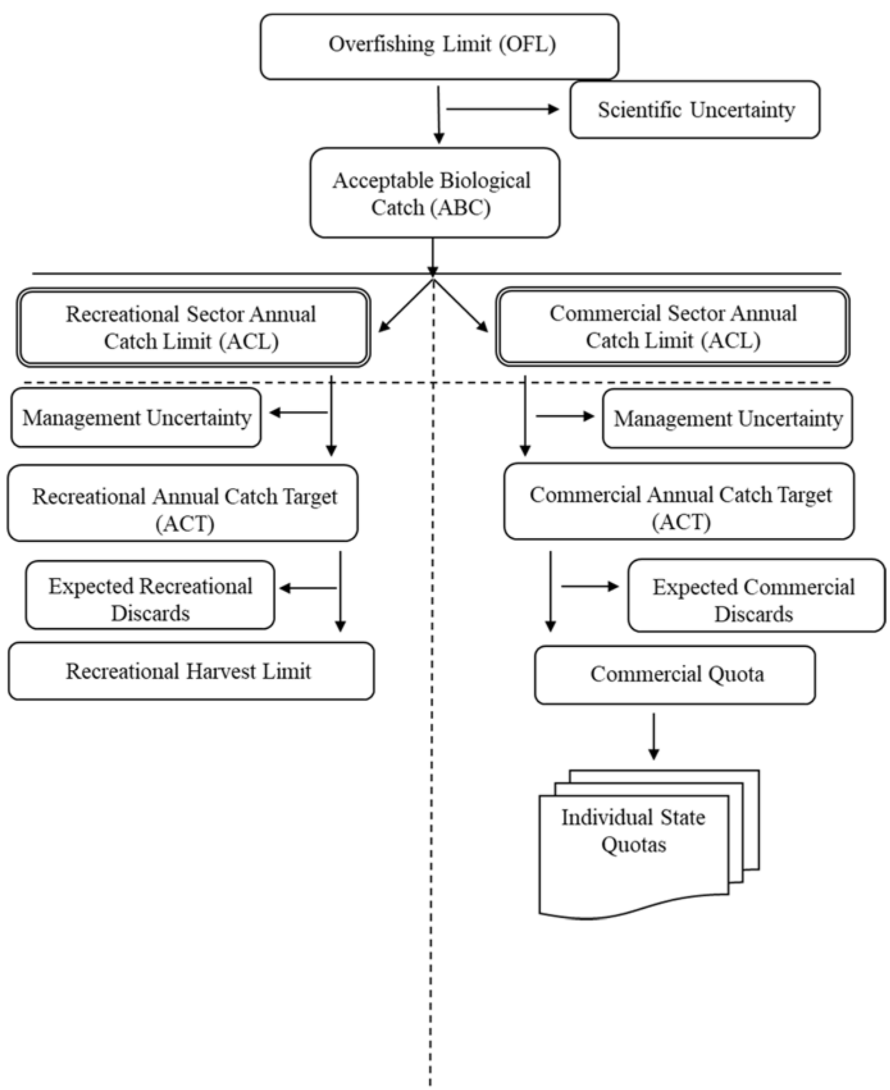

Figure 3: Flowchart for summer flounder catch and landings limits.

Annual Catch Targets and Accountability Measures

The Monitoring Committee is responsible for recommending ACTs, which are intended to account for management uncertainty. The Monitoring Committee should consider all relevant sources of management uncertainty in the summer flounder fishery and provide the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT. ACTs may be reduced upon implementation in some cases if an Accountability Measure (AM) is triggered for a given fishery, as described below.

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 bycatch) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels).

Commercial landings have generally been near the commercial quotas for the last five years (2014-2018; Table 5). The NMFS Regional Administrator has in-season closure authority for the commercial summer flounder fishery, and commercial quota monitoring systems in place are typically effective in allowing timely reactions to landings levels that approach quotas.

Staff recommend maintaining commercial ACTs set equal to the ACLs for 2019-2021, such that no reduction in catch is taken for management uncertainty.

For 2019, a commercial AM was triggered based on an overage of the commercial ACL in 2017. For the commercial fishery, ACL overages caused by higher than projected discards result in a payback amount scaled based on estimates of stock biomass relative to the biomass target. The revised 2019 commercial ACT was reduced by approximately 547,000 pounds based on the biomass estimate from the most recent assessment. For 2020, a commercial AM may be triggered based on an evaluation of commercial catch in 2018 compared to the commercial ACL. While 2018 catch estimates are available from the NEFSC data update, GARFO estimates of commercial catch used in the ACL evaluation may differ and are still being finalized for 2018. Thus, it is not known at this time what the magnitude of any reductions would be for the 2020 commercial ACT.

Because commercial discards resulted in the commercial ACL being exceeded in 2017 and likely in 2018 as well, trends in commercial discards should continue to be monitored closely for potential future incorporation into ACT recommendations. However, commercial catch and landings limits were increased substantially in 2019 and will be maintained at this higher level for 2020 and 2021. In 2017 and 2018, a large proportion of discards were likely the result of below-average quotas. Observer data for observed trawl hauls from 2014-2018 supports this conclusion (Table 6). Given that the commercial quota is now around 50% higher compared to 2018, commercial discards would be expected to decrease due to availability of more quota.

Recreational performance relative to past RHLs cannot be evaluated using the revised MRIP data, since past harvest limits were set based on assessments that used the old data. A performance evaluation for 2014-2018 using old MRIP data is provided in Table 5 (2014-2017 uses pre-calibration MRIP data; 2018 back-calibrated data is not available on the MRIP query website but was provided by MRIP staff). Compared to the commercial fishery, recreational performance has been much more variable relative to the RHLs given the difficulty forecasting recreational effort and catch rates in any given year. Between 2014-2018, recreational harvest was below the recreational harvest limits in three of the five years, notably in 2015 when the recreational fishery experienced a large underage, with landings 36% below the recreational harvest limit.

The Monitoring Committee should continue its ongoing work to incorporate estimates of uncertainty in the recreational data and more fully consider various factors that may influence recreational catch and harvest. For example, the impacts of management changes on recreational discards and the impacts of year class size and trends in biomass projections should be more thoroughly considered with the goal of better predicting impacts of management measure changes. The Council and Board are currently considering both short-term and long-term modifications to the recreational management system to address some of these uncertainties in recreational management, and achieve a balance of flexibility and stability in the recreational measures.

The Council and Board recently received a report on a Council-funded study that evaluates management of the recreational summer flounder fishery using a Management Strategy Evaluation (MSE) framework. This project also involved the development of a recreational fleet dynamics model that can be used to more accurately forecast harvest and discards resulting from a particular set of management measures. Staff recommend using this tool in conjunction with typical methods when developing recreational measures for 2020 in late 2019, including accounting for the effects of management measures on both harvest and discards, which should improve performance relative to the recreational ACL.

Recreational AMs are evaluated based on a three-year moving average of recreational catch compared to the average recreational ACL over the same time period. These are typically evaluated in the fall during the setting of recreational measures for the upcoming fishing year. Given summer flounder stock status, and old MRIP harvest estimates being under the RHL in 2017 and 2018, it is unlikely that a recreational AM will be triggered for summer flounder in 2020; however, this will be re-evaluated later this fall.

<u>For 2020, staff recommend maintaining the previously implemented ACTs set equal to the ACLs, such that no reduction in catch is taken for management uncertainty.</u>

Table 5: Summer flounder commercial and recreational fishery performance relative to quotas and harvest limits, 2014-2018. Recreational data shows pre-revision MRIP estimates in order to allow comparison to past RHLs.

Year	Commercial Landings (mil lb)[a]	Commercial Quota (mil lb)[b]	Percent Overage(+)/ Underage(-)	Recreational Landings - OLD MRIP (mil lb)[c]	Recreational Harvest Limit (mil lb)	Percent Overage(+)/ Underage(-)
2014	11.07	10.51	+5%	7.39	7.01	+5%
2015	10.68	11.07	-4%	4.72	7.38	-36%
2016	7.81	8.12	-4%	6.18	5.42	+14%
2017	5.83	5.66	+3%	3.19	3.77	-15%
2018	6.14	6.44	-5%	3.35	4.42	-24%
5-yr Avg.	-	-	+1%	-	-	-11%

[a] Source: NMFS dealer data, as of June 2019.
[b] Commercial quotas are post-deduction for past landings and discard overages.
[c] Source: 2014-2017 pre-calibration MRIP data from NMFS MRIP calibration comparison query accessed June 27, 2019. 2018 back-calibrated data is from personal communication with NMFS. Recreational landings are from Massachusetts through North Carolina.

Table 6: Percent of observed trawl hauls with discarded summer flounder by discard reason, 2014-2018.

Recorded Discard Reason	2014	2015	2016	2017	2018	Avg
Regulations; too small	48%	46%	45%	31%	40%	42%
Regulations; quota filled	36%	37%	40%	50%	45%	42%
High graded	9%	8%	8%	7%	7%	8%
Market; too small	3%	1%	2%	4%	2%	2%
Poor quality	2%	1%	1%	1%	<1%	1%
No market	<1%	2%	1%	3%	2%	2%
Market, will spoil	<1%	4%	1%	1%	1%	2%
Other	2%	4%	1%	1%	1%	2%

Commercial Quotas and Recreational Harvest Limits

Projected discards are removed from the sector-specific ACTs to derive landings limits, which include annual commercial quotas and RHLs (Table 1). The commercial quota is divided amongst the states based on the allocation percentages in the FMP, shown in Table 7. The Council and Board recently approved modifications to the commercial allocations through a Summer Flounder Commercial Issues Amendment (see: http://www.mafmc.org/actions/summer-flounder-amendment). A summary of the commercial allocation changes is available at: http://www.mafmc.org/s/SF-Allocation-Revisions-Fact-Sheet-March-2019.pdf. These changes are pending implementation by the National Marine Fisheries Service, and if approved, are expected to take effect on January 1, 2021.

Table 7: The summer flounder quota allocations for the commercial fisheries in each state. These allocations are expected to be revised for the 2021 fishing year as a result of the Summer Flounder Commercial Issues Amendment.

State	Allocation (%)
ME	0.04756
NH	0.00046
MA	6.82046
RI	15.68298
CT	2.25708
NY	7.64699
NJ	16.72499
DE	0.01779
MD	2.03910
VA	21.31676
NC	27.44584
Total	100

Specific management measures that will be used to achieve the RHL for the recreational fishery in 2020 will not be determined until later in 2019. Typically, the Council and Board review data through Wave 4 (July-August) in the current year to set specifications in the upcoming year. The Monitoring Committee meets in November to review these data and make recommendations regarding any necessary changes in the recreational management measures (i.e., bag limit, minimum size, and season). As discussed above, the Monitoring Committee should consider the use of new approaches to recreational summer flounder measures in 2020, including the use of the previously mentioned fleet dynamics model to predict management outcomes.

Commercial Management Measures

Commercial Gear Regulations and Minimum Fish Size

Management measures in the commercial fishery other than quotas (i.e., minimum fish size, gear requirements, etc.) have remained generally constant since 1999.

The current commercial minimum fish size is 14 inches total length (TL). The 14-inch minimum size was implemented in 1997 and represented an increase from the previous minimum size of 13 inches TL.

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). The minimum fish size and mesh requirements may be changed through specifications based on the recommendations of the Monitoring Committee. The 5.5-inch diamond or 6.0-inch square minimum mesh size requirements were first implemented in 1993 under Amendment 2 to the FMP, but at the time applied only to the net's codend. Under Amendment 10 to the FMP, effective in 1998, the minimum mesh requirements were modified to apply throughout the whole net.

<u>Staff recommend no changes to the current 14-inch minimum fish size, or seasonal possession thresholds triggering the minimum mesh size at this time.</u>

The Monitoring Committee reviewed the results of a study by Hasbrouck et al. (2018)[5] during their July 2018 meeting. The Monitoring Committee agreed that this study provides valuable contemporary information on the mesh selectivities for all three species, and that this information could be useful for future stock assessments. The results suggest that, in general, the current minimum mesh sizes are effective at releasing catch of most undersized and immature fish.

The Monitoring Committee noted that the summer flounder selectivity curve for 6.0" square mesh does not appear to be equivalent to that of the 5.5" diamond. Instead, the 6.0" square is much more similar to a 5.0" diamond mesh. The 6.0" square mesh releases less than 50% of minimum size fish. The Monitoring Committee had some concerns with the amount of undersized summer flounder caught with the 6.0" square mesh and recommended further exploring the impacts of this mesh size. Phasing out the use of 6.0" square mesh for summer flounder could reduce discards of undersized fish. The Monitoring Committee noted that further analysis should be done on how many vessels are currently using 6.0" square vs. 5.5" diamond mesh.

The Monitoring Committee emphasized that fishing industry feedback should be sought, and additional analysis should be completed before pursuing specific changes. Staff is currently soliciting input from the Summer Flounder, Scup, and Black Sea Bass Advisory Panel on mesh size issues prior to the September Monitoring Committee meeting, and may provide additional analysis on mesh size use if available.

For summer flounder, <u>staff preliminarily recommend further consideration of phasing out the 6.0" square mesh size over a period of several years</u>, in favor of either a 5.5" diamond mesh requirement alone, or adjusting the square mesh requirement to a larger size. If the Monitoring Committee agrees that this should be explored, the group should consider whether there is enough technical justification for selecting a larger square mesh size requirement.

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[5] Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

Minimum Mesh Size Exemption Programs

Small Mesh Exemption Area

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 a bycatch of summer flounder while operating in other small-mesh fisheries.

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 lb 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 period from November 1 in the previous year to April 30 in the current year. However, when this analysis is conducted each summer, complete observer data is not yet available through the end of April in the current year. As such, a year-long lag in the analysis is used.

Staff evaluated NEFOP data for November 1, 2017 through April 30, 2018. These data indicate that a total of 724 trips with at least one tow were observed east of 72° 30.0'W and 364 of these trips used small mesh (Table 8). Of those 364 trips, 135 trips reported landing more than 200 lb of summer flounder. Of those 135 trips, 47 trips 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 6.5% (47/724 trips). The prior year percentage of trips that met the criteria, also shown in Table 8, was also 6.5%. The Monitoring Committee should continue to closely monitor the use of this exemption program. If the rate of trips meeting these criteria increases, the Monitoring Committee should consider modifications to this program.

For an unrelated action in 2017, GARFO staff compiled the number of vessels issued a letter of authorization (LOA) for the small mesh exemption program in recent years, shown in Table 9, indicating that an average of 64 summer flounder permit holders have requested this LOA from 2013 through 2017.

Based on the information described above, staff recommend no change in the SMEP program, however, the rates of summer flounder discarding should continue to be closely tracked by the Monitoring Committee.

Table 8: Numbers of trips that meet specific criteria based on observed trips from November 1, 2016 to April 30, 2017, and November 1, 2017 to April 30, 2018.

Criteria		Nov. 1, 2016 – April 30, 2017	Nov. 1, 2017 – April 30, 2018
A	Observed trips with at least one catch record east of 72° 30' W Longitude	555	724
B	That met the criteria in row A and used small mesh at some point during their trip	376	364
C	That met the criteria in rows A-B and landed more than 200 pounds summer flounder on whole trip	150	135
D	That met the criteria in rows A-C and discarded >10% of summer flounder catch east of 72° 30' W Longitude	36	47
E	% 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 D/row A)	6.5%	6.5%
F	Total summer flounder discards (pounds) from trips meeting criteria in A-D	14,640	33,868
G	Total summer flounder landings (pounds) from trips meeting criteria in A-D	25,472	76,780
H	Total catch (pounds) from trips meeting criteria in A-D	40,113	110,648

Table 9: Number of vessels issued the small mesh LOA from fishing year 2013-2017.

Year	Vessels Enrolled
2013	71
2014	55
2015	65
2016	61
2017	69

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. Only North Carolina has a flynet fishery at present. The supplemental memo from T.D. VanMiddlesworth dated August 13, 2019 (see Attachment) indicates that no summer flounder were landed in the North Carolina flynet fishery in 2013, 2015, 2016, 2017, or 2018. In 2015, as part of the review of commercial measures, the Monitoring and Technical Committees reviewed information indicating that summer flounder landings in this fishery have generally declined since 2007, and have been under 2,000 lb since 2010. Based on this information, staff recommend no change to the summer flounder flynet exemption program. Staff had previously noted that scup and black sea bass were landed in the North Carolina flynet fishery in recent years, and that the Monitoring Committee should consider whether similar exemptions should be explored for these species. Based on the additional information provided in the attached memo, flynets used to land these species appear to be generally compliant with the minimum mesh requirements for scup and black sea bass, and therefore an exemption for these species is likely not needed.

ATTACHMENT

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

STEPHEN W. MURPHEY
Director

Memorandum

To: Kiley Dancy, MAFMC

From: Todd Daniel VanMiddlesworth, NCDMF

Date: August 13, 2019

Subject: Species composition and landings from the 2018 North Carolina fly net fishery

The 2018 North Carolina fly net fishery landed 40,460 pounds of finfish consisting of four species including Atlantic croaker, black sea bass, scup, and longfin squid. All 2018 North Carolina fly net 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. Summer flounder were not landed in the 2013, 2015, 2016, 2017, and 2018 fly net fisheries. Fly net landings and trips for most species were lower in 2018 than in 2017. Total fly net landings in 2018 were much lower than those in 2017 (131,104 pounds), which may be the result of reduced fishing effort on targeted fish species and increased shoaling at Oregon Inlet resulting in limited access of fly net boats to North Carolina ports.

Historically, the North Carolina fly net fishery targeted species such as Atlantic croaker, kingfish, bluefish, striped bass, and weakfish. Other species such as black sea bass and scup have also been targeted. Fly net landings for these species has greatly declined over the years. Although fly nets are used to land black sea bass and scup, flounder trawls are responsible for most of the landings. As of 2018, approximately 93% of black sea bass and 99% of scup commercial landings in North Carolina were from flounder trawls. The North Carolina Division of Marine Fisheries (NCDMF) collects data from all commercial fisheries including the fly net fishery. Data that is collected includes gear, effort, and biological information. The captains are interviewed while they offload their catch to obtain gear and effort information. If the captain is not present or does not wish to be interviewed, we do not obtain this information. In order to address concerns of fly nets using correct mesh sizes for landing black sea bass (4.5 inch minimum mesh size throughout codend of the net) and scup (5.0 inch minimum mesh size throughout codend of the net), ten years (2009-2018) of North Carolina Division of Marine Fisheries commercial fish house sampling data was used to determine minimum mesh size used in the codends of fly nets that landed black sea bass and scup. During 2009-2018, all fly nets sampled that were targeting black sea bass used the minimum mesh size of 4.5 inch or greater. There was only one fly net sampled that was using a smaller mesh size than 4.5 inches to land Atlantic croaker and landed ~2 pounds of black sea bass. As for fly nets sampled that were targeting scup, all used the minimum mesh size of 5.0 inch or greater. There were only three fly nets sampled that were using smaller mesh sizes than 5.0 inches to land black sea bass and Atlantic croaker and landed less than 100 pounds of scup per trip.

Summer flounder Data Update for 2019

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

Fishery and Survey Data

Reported 2018 landings in the commercial fishery were 2,787 mt = 6.144 million lbs. Estimated 2018 landings in the recreational fishery were 3,447 mt = 7.599 million lbs. Total commercial and recreational landings in 2018 were 6,234 mt = 13.744 million lbs. Estimated 2018 discards in the commercial fishery (80% mortality rate) were 997 mt = 2.198 million lbs. Estimated 2018 discards in the recreational fishery (10% mortality rate) were 1,003 mt = 2.211 million lbs. Estimated total commercial and recreational discards were 2,000 mt = 4.409 million lbs. The total catch of summer flounder in 2018 was 8,234 mt = 18.153 million lbs, the lowest since 1982 (Table 1, Figure 1).

State and Federal survey indices of summer flounder stock size are presented in Figures 2-9. Indices of summer flounder recruitment (age 0 fish) are presented in Figures 10-16. The surveys indicate that aggregate stock size increased from 2017 to 2018 (Figure 9) and that recruitment in 2018 was above average (Figure 16).

Some notable fish were collected in the Northeast Fisheries Science Center (NEFSC) commercial fishery sampling in 2018. The oldest summer flounder collected to date was sampled, a 57 cm fish (likely a male) estimated to be age 20. Also sampled were two age 17 fish, at 52 cm (likely a male) and at 72 cm (likely a female). Two large (likely female) fish at 80 and 82 cm 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.

Table 1. Commercial (comm) and recreational (recr) fishery landings, estimated commercial and recreational dead discard, and total catch (metric tons) as used in the assessment of summer flounder, Maine to North Carolina. Includes 'New' Marine Recreational Information Program (MRIP) estimates of recreational catch.

Year	Comm Landings	Comm Discard	Comm Catch	Recr Landings	Recr Discard	Recr Catch	Total Landings	Total Discard	Total Catch
1982	10,400	n/a	10,400	10,758	250	11,008	21,158	250	21,408
1983	13,403	n/a	13,403	16,665	356	17,022	30,068	356	30,425
1984	17,130	n/a	17,130	12,803	537	13,340	29,933	537	30,470
1985	14,675	n/a	14,675	11,405	184	11,589	26,080	184	26,264
1986	12,186	n/a	12,186	12,005	646	12,651	24,191	646	24,837
1987	12,271	n/a	12,271	10,638	668	11,306	22,909	668	23,577
1988	14,686	n/a	14,686	9,429	483	9,912	24,115	483	24,598
1989	8,125	456	8,581	2,566	84	2,650	10,691	540	11,231
1990	4,199	898	5,097	3,517	414	3,931	7,716	1,312	9,028
1991	6,224	219	6,443	5,854	617	6,470	12,078	836	12,914
1992	7,529	2,151	9,680	5,746	559	6,305	13,275	2,710	15,985
1993	5,715	701	6,416	6,228	703	6,931	11,943	1,404	13,347
1994	6,588	1,539	8,127	6,481	409	6,889	13,069	1,947	15,016
1995	6,977	827	7,804	4,090	589	4,679	11,067	1,415	12,482
1996	5,861	1,436	7,297	6,813	624	7,437	12,674	2,060	14,734
1997	3,994	807	4,801	8,403	663	9,066	12,397	1,470	13,867
1998	5,076	638	5,714	10,368	997	11,365	15,444	1,635	17,079
1999	4,820	1,666	6,486	7,573	1,078	8,651	12,393	2,744	15,138
2000	5,085	1,620	6,705	12,259	1,182	13,441	17,344	2,802	20,146
2001	4,970	411	5,381	8,417	1,897	10,314	13,387	2,308	15,695
2002	6,573	948	7,521	7,388	1,564	8,952	13,961	2,512	16,473
2003	6,450	1,160	7,610	9,746	1,867	11,614	16,196	3,028	19,224
2004	7,880	1,628	9,508	9,616	1,833	11,449	17,496	3,461	20,958
2005	7,671	1,499	9,170	8,412	1,711	10,123	16,083	3,210	19,293
2006	6,316	1,518	7,834	8,452	1,583	10,034	14,768	3,100	17,868
2007	4,544	2,128	6,672	6,300	1,801	8,101	10,844	3,929	14,773
2008	4,179	1,162	5,341	5,597	1,970	7,567	9,776	3,132	12,909
2009	5,013	1,522	6,535	5,288	2,484	7,771	10,301	4,006	14,307
2010	6,078	1,478	7,556	5,142	2,710	7,852	11,220	4,188	15,408
2011	7,517	1,143	8,660	6,116	2,711	8,827	13,633	3,854	17,487
2012	5,918	754	6,672	7,318	2,172	9,490	13,236	2,927	16,163
2013	5,696	863	6,559	8,806	2,119	10,925	14,502	2,981	17,483
2014	4,989	830	5,819	7,364	2,092	9,456	12,353	2,922	15,275
2015	4,858	703	5,561	5,366	1,572	6,938	10,224	2,274	12,498
2016	3,537	772	4,309	6,005	1,482	7,487	9,542	2,254	11,796
2017	2,644	906	3,550	4,565	1,496	6,061	7,209	2,402	9,611
2018	2,787	997	3,784	3,447	1,003	4,450	6,234	2,000	8,234

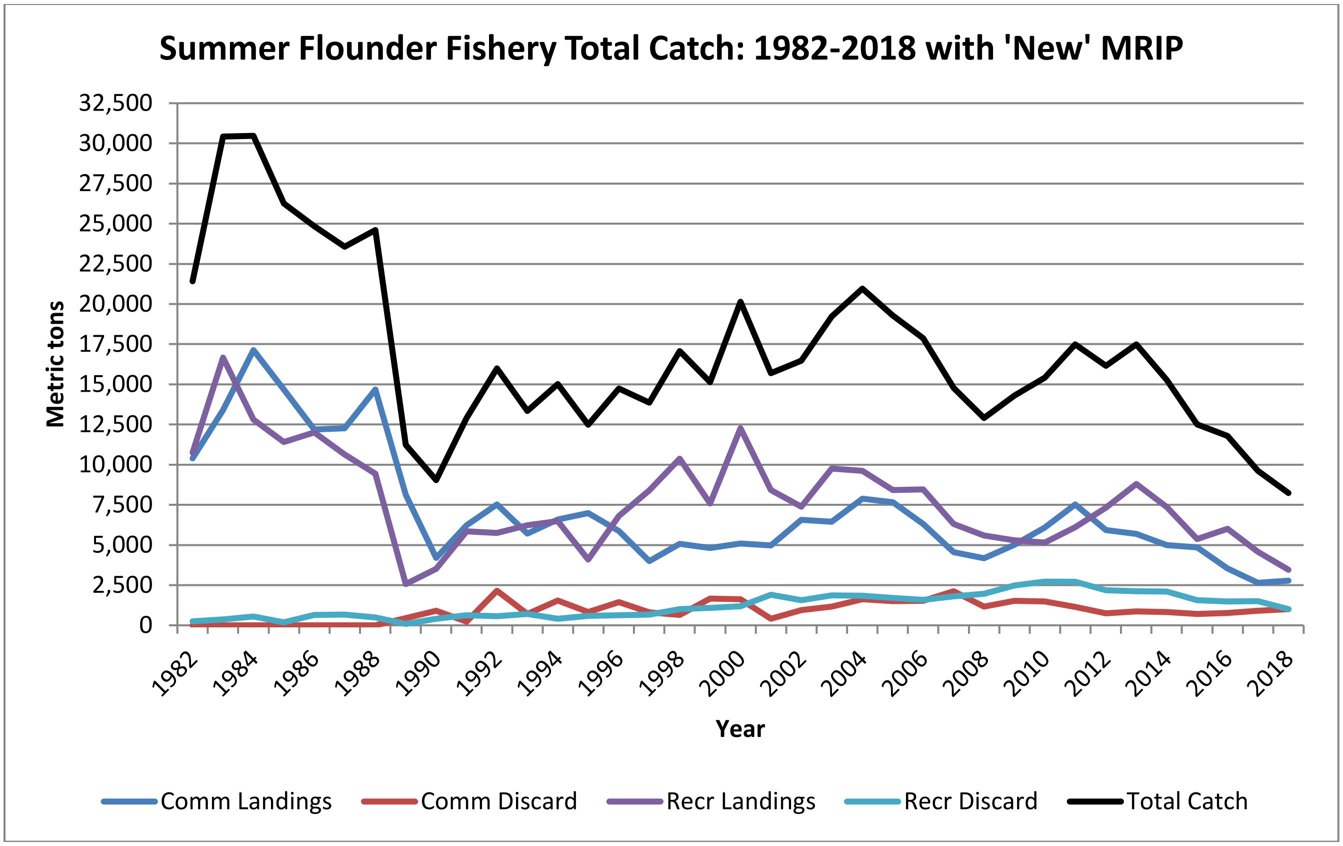


Figure 1. Summer flounder fishery total catch (includes 'New' Marine Recreational Information Program [MRIP] estimates of recreational catch).

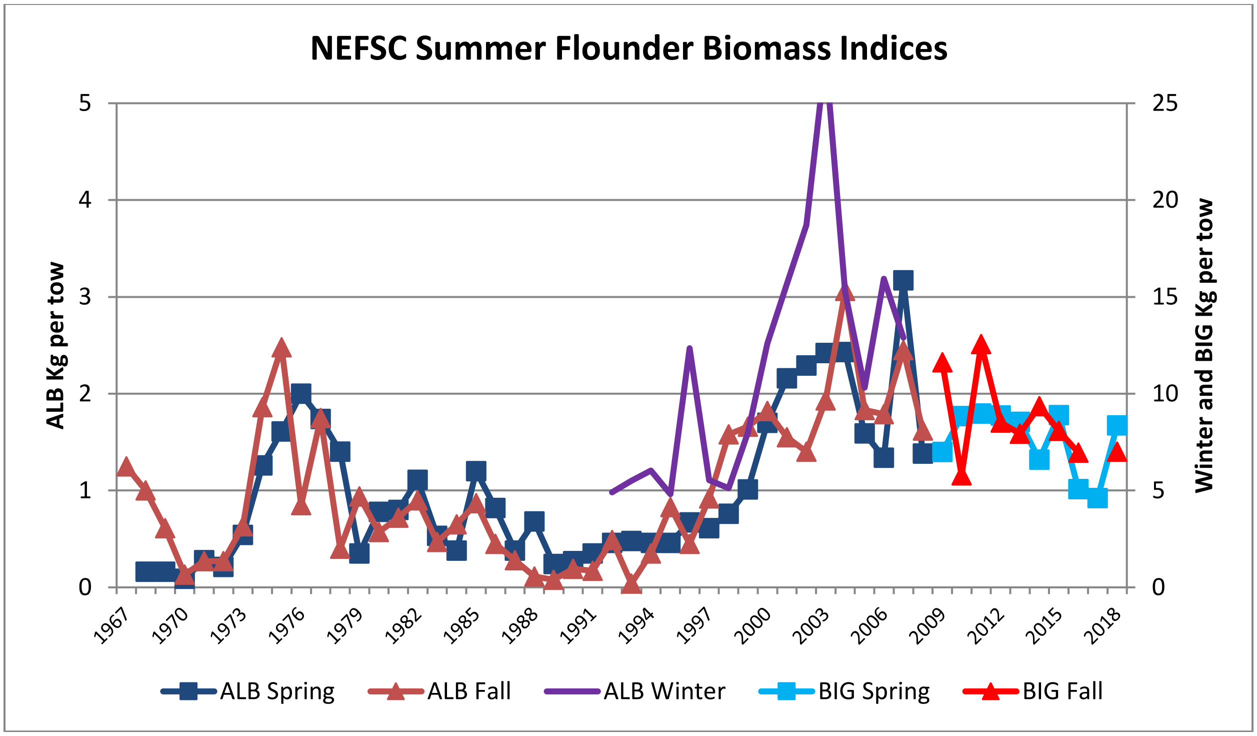


Figure 2. Northeast Fisheries Science Center (NEFSC) trawl survey aggregate biomass indices for summer flounder. ALB indices are FSV Albatross IV indices. BIG indices are FSV HB Bigelow indices. ALB spring and fall indices are plotted on the left-hand Y-axis. ALB winter and BIG spring and fall indices are plotted on the right-hand Y-axis. Note that the ALB and BIG indices are now independent series.

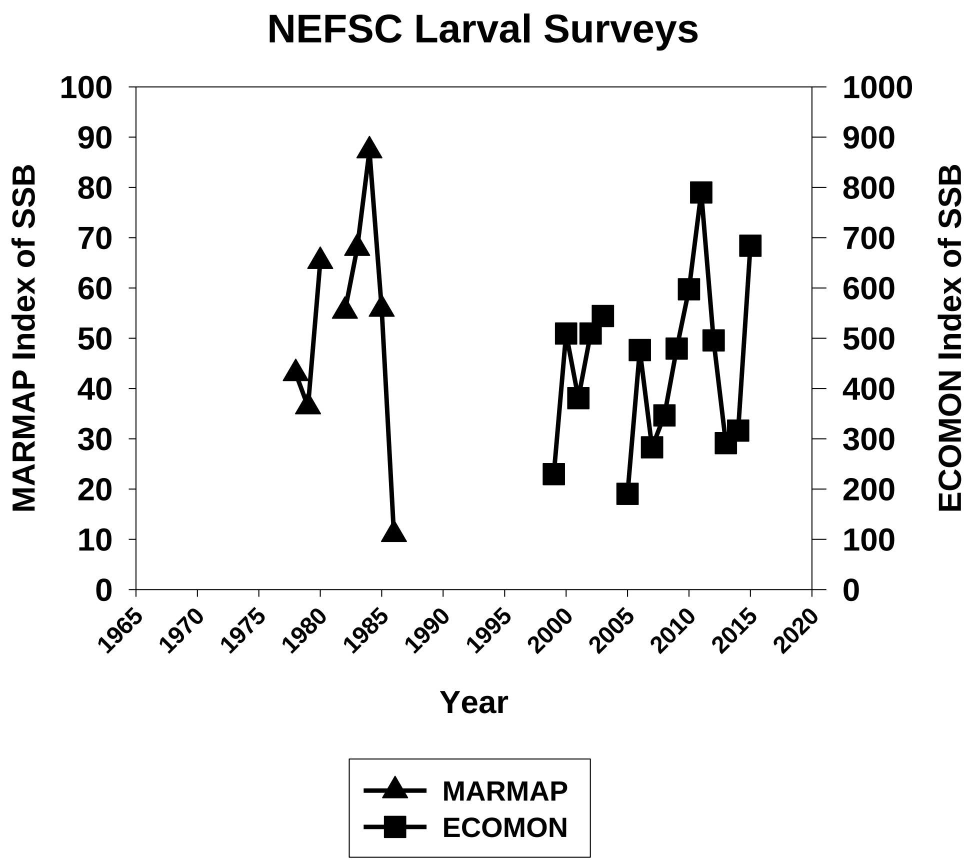


Figure 3. Northeast Fisheries Science Center (NEFSC) Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP) and Ecological Monitoring Program (ECOMON) larval survey indices of summer flounder spawning stock biomass (SSB).

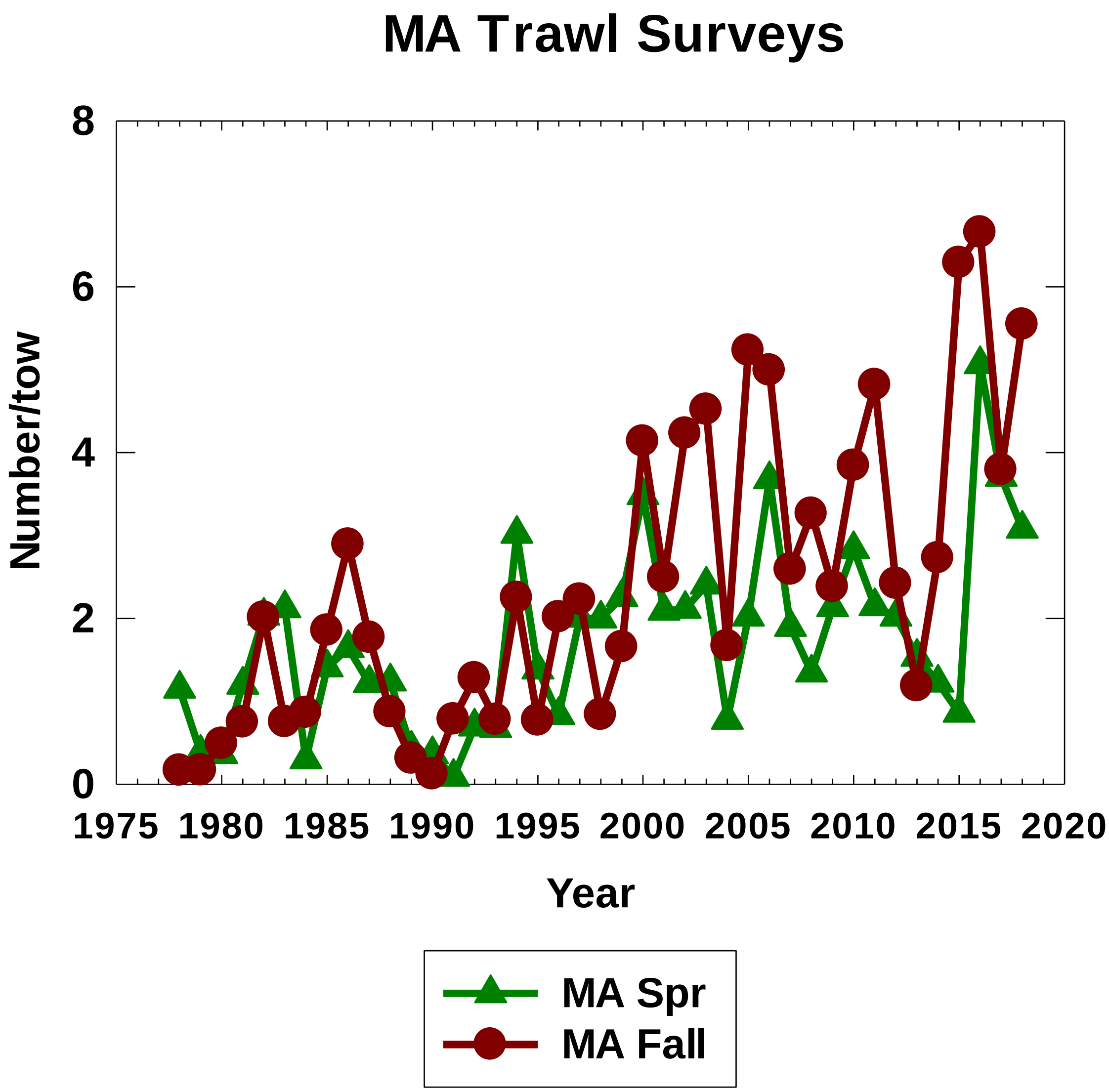


Figure 4. Massachusetts Division of Marine Fisheries (MA) spring and fall trawl survey aggregate numeric indices for summer flounder.

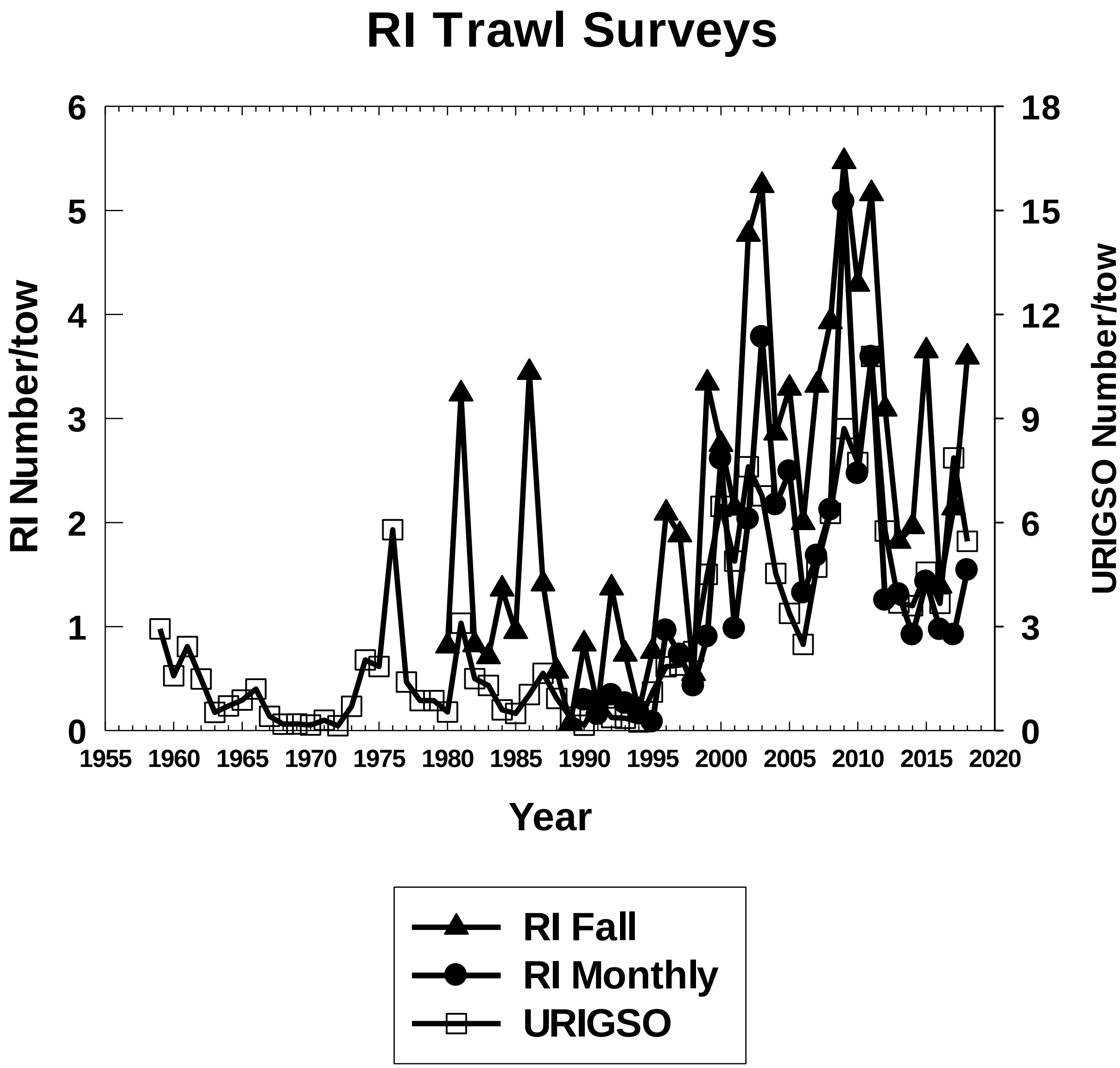


Figure 5. Rhode Island Division of Fish and Wildlife (RI) fall and monthly and University of Rhode Island Graduate School of Oceanography (URIGSO) annual trawl survey aggregate numeric indices for summer flounder.

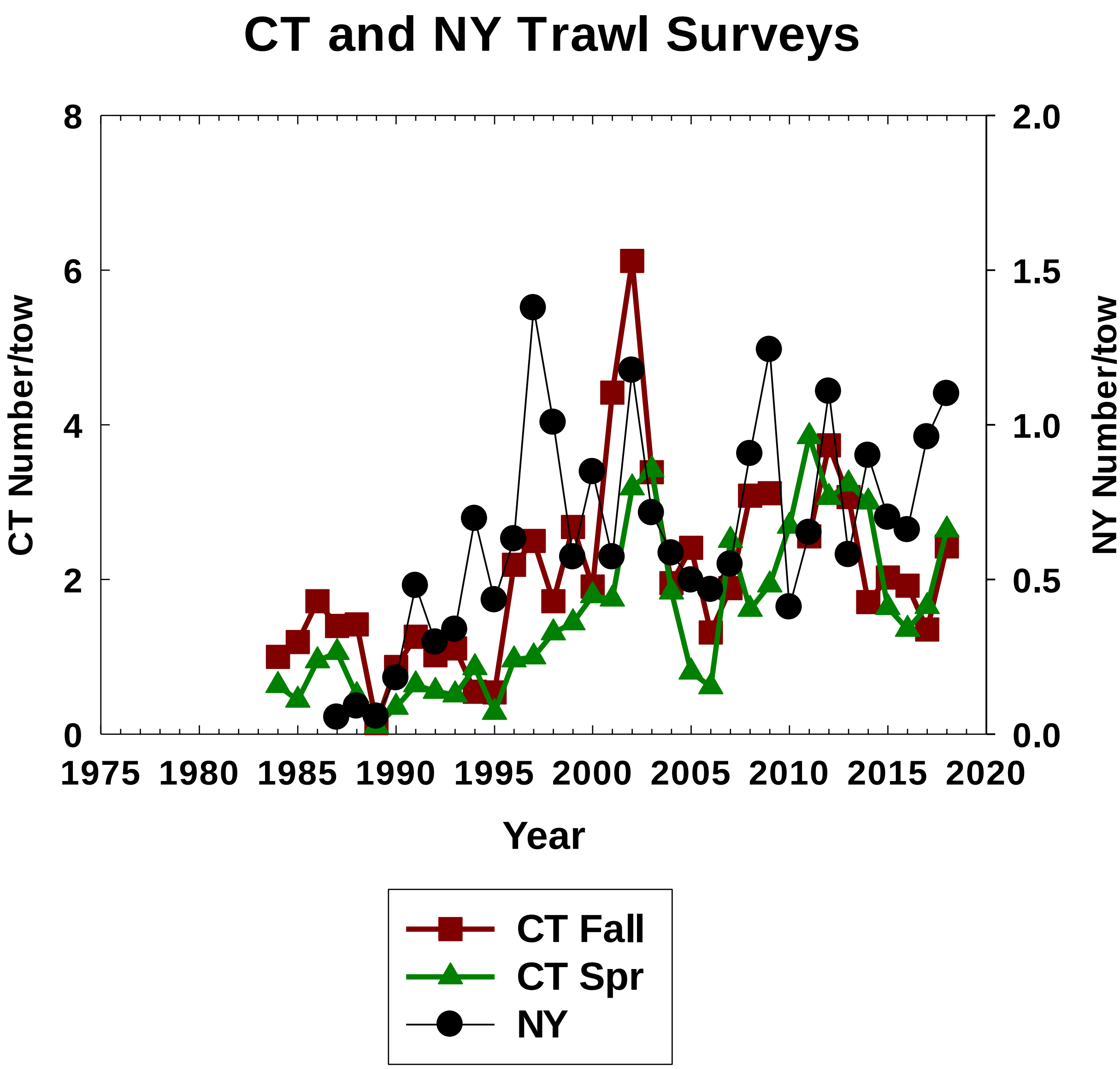


Figure 6. Connecticut Department of Energy and Environmental Protection (CT) spring and fall and New York Department of Environmental Conservation (NY) annual trawl survey aggregate numeric indices for summer flounder.

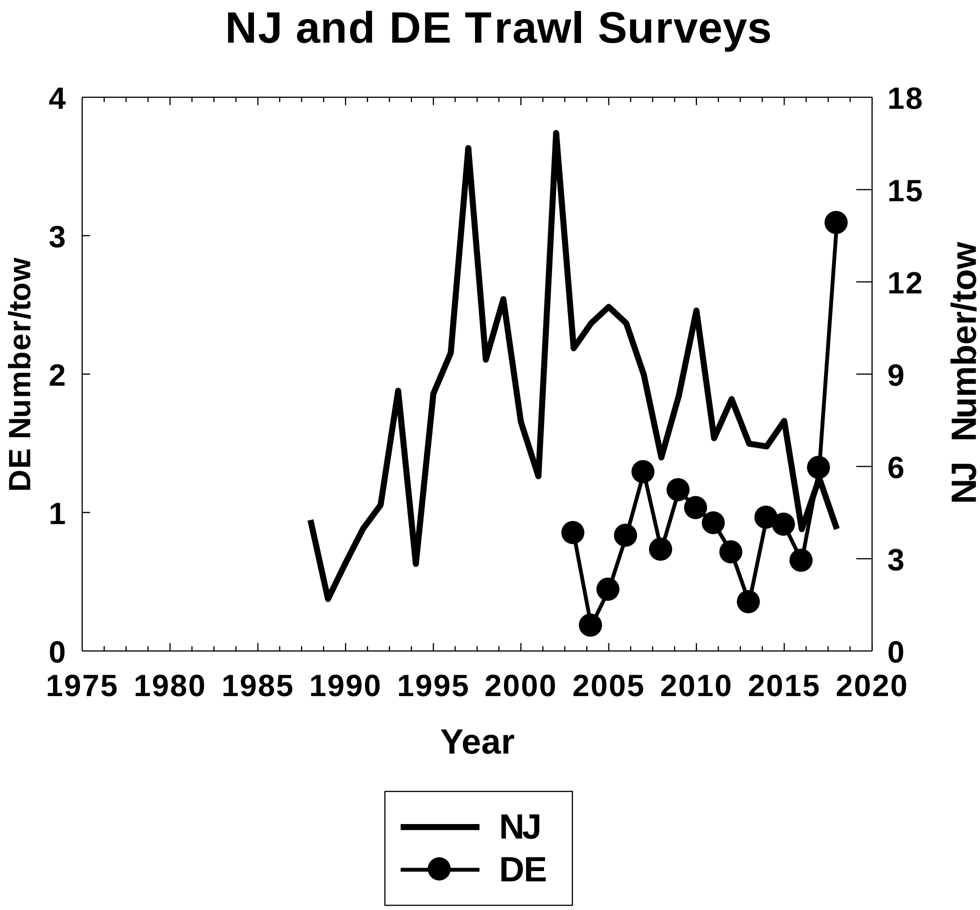


Figure 7. New Jersey Division of Fish and Wildlife (NJ) annual and Delaware Division of Fish and Wildlife (DE) annual trawl survey aggregate numeric indices for summer flounder.

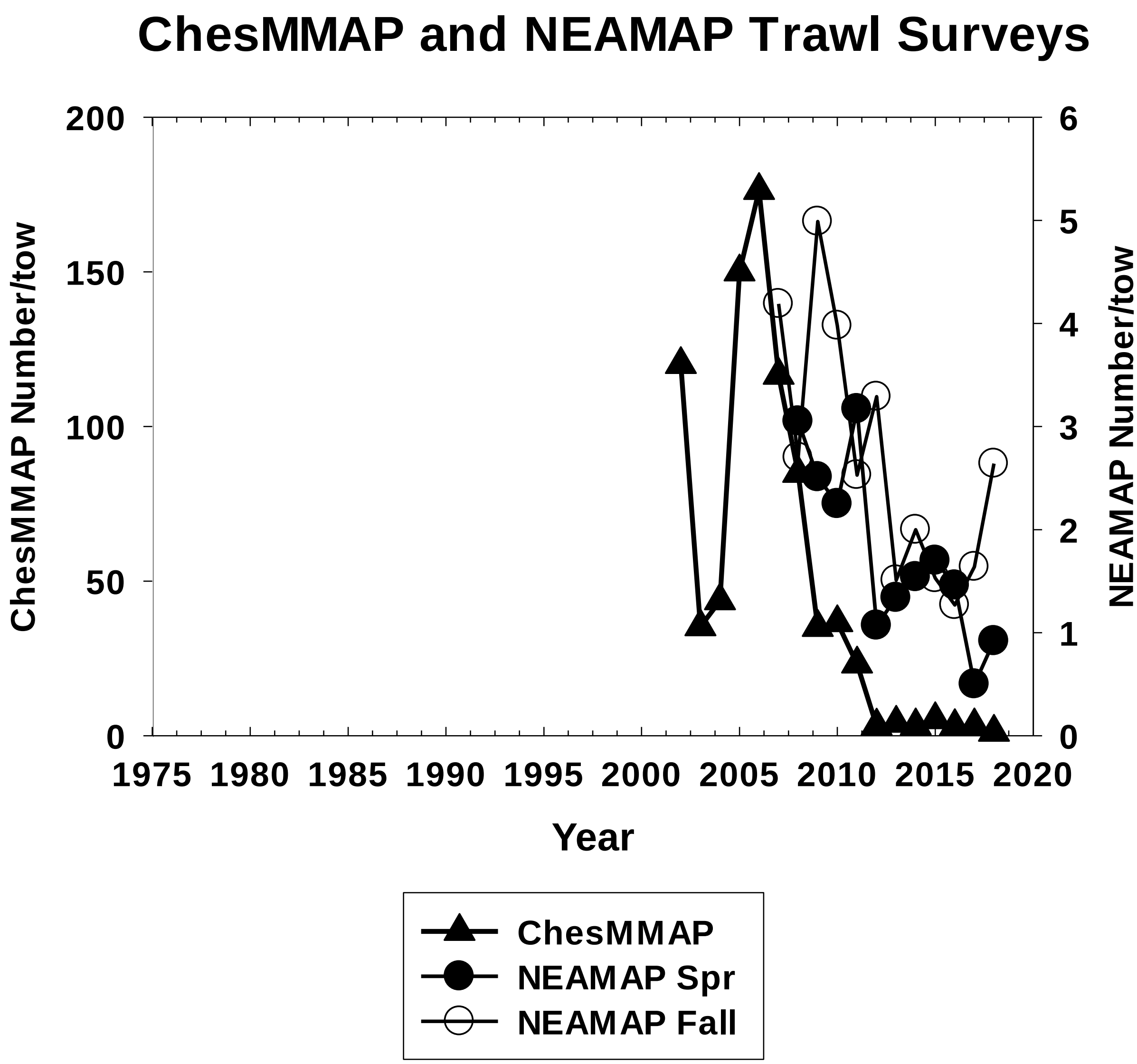


Figure 8. Virginia Institute of Marine Science Chesapeake Bay Multispecies Monitoring Assessment Program (ChesMMAP) annual and Northeast Area Monitoring and Assessment Program (NEAMAP) spring and fall trawl survey aggregate numeric indices for summer flounder.

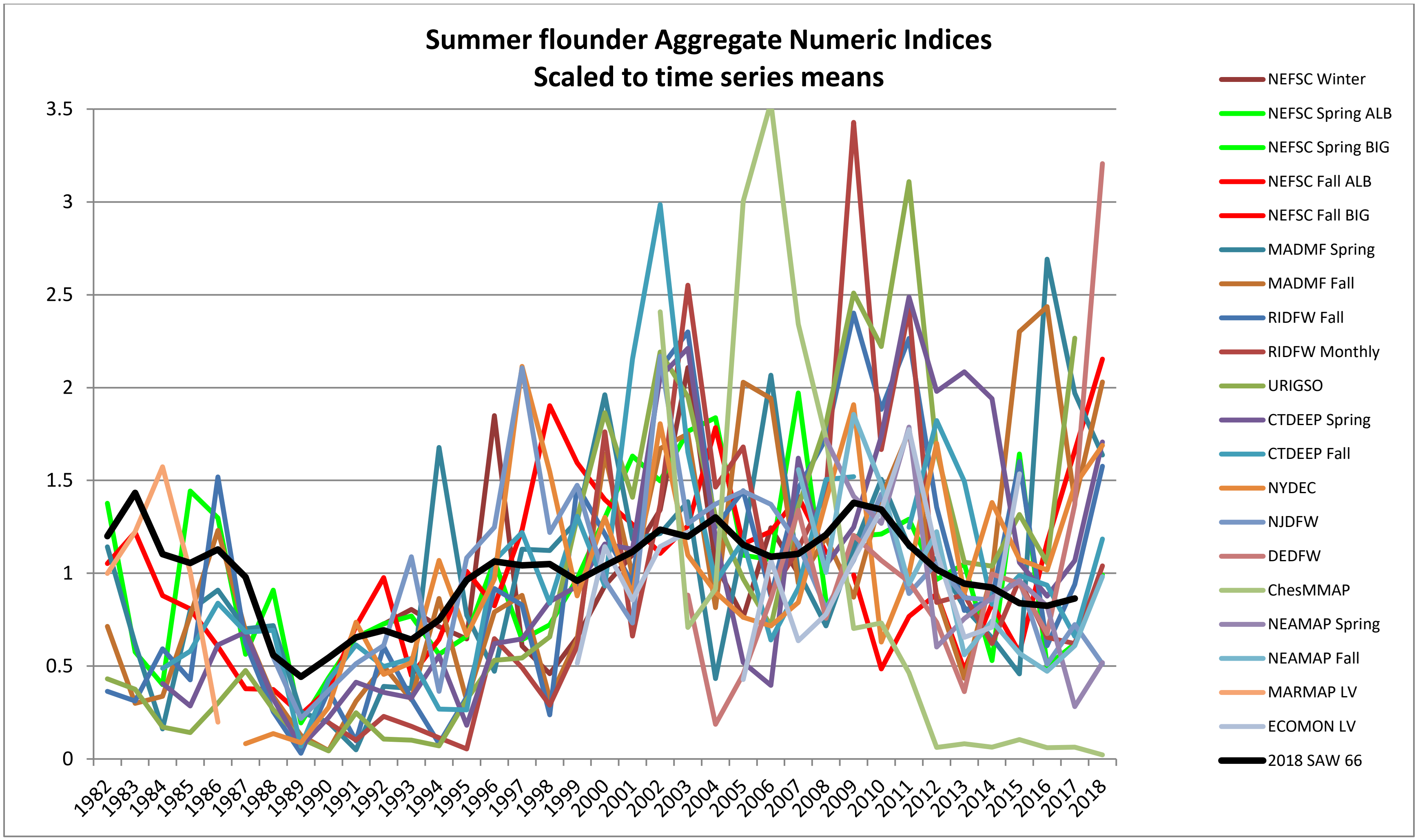


Figure 9. Summer flounder indices of aggregate numeric abundance. Indices are scaled to the means of their respective time series. 2018 SAW 66 is the total stock size estimate from the 2018 benchmark stock assessment.

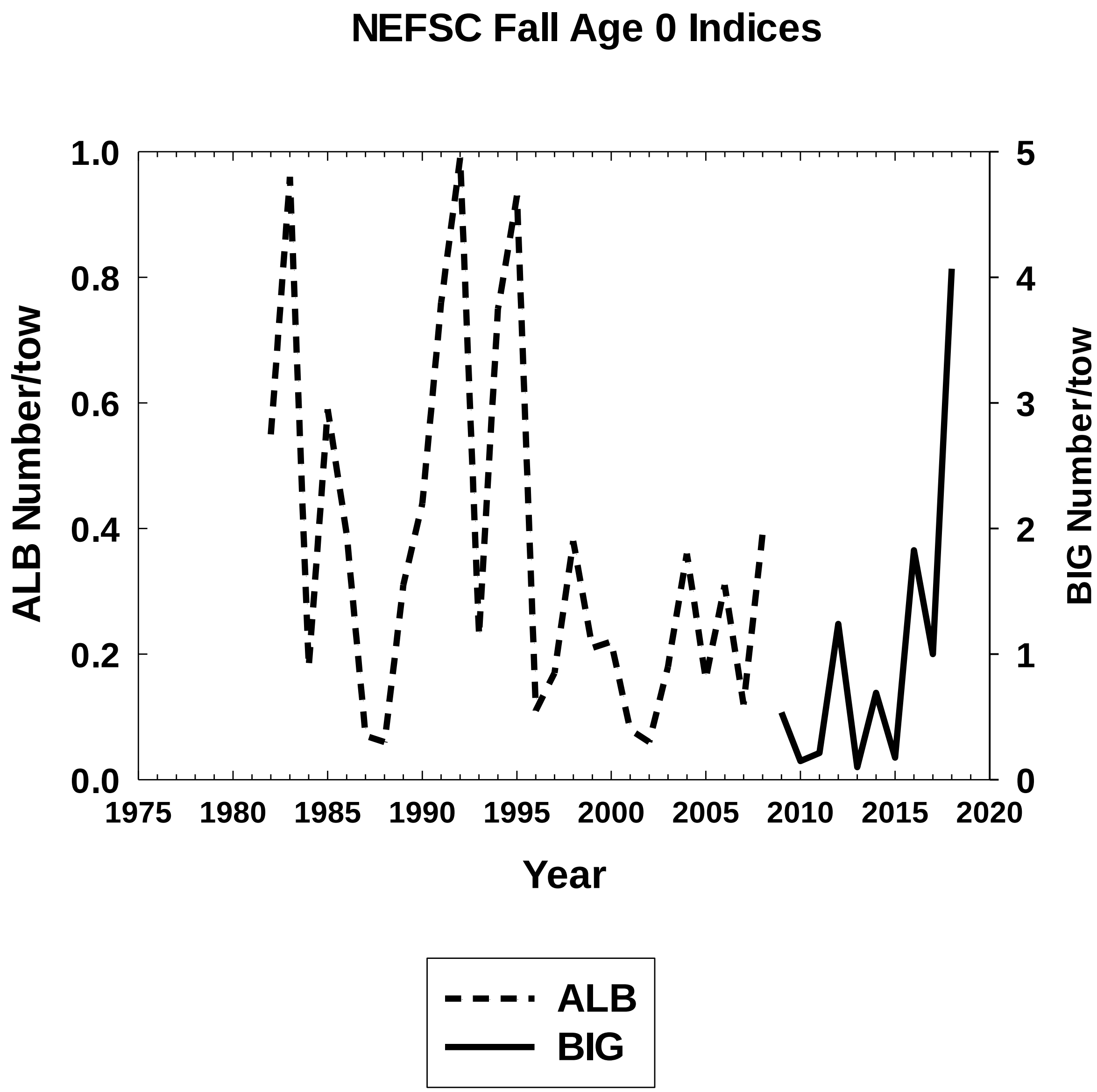


Figure 10. Northeast Fisheries Science Center (NEFSC) fall trawl survey age 0 abundance indices for summer flounder. ALB indices are FSV Albatross IV indices. BIG indices are FSV HB Bigelow indices. Note that the ALB and BIG indices are plotted on differently scaled y-axes and are now independent series.

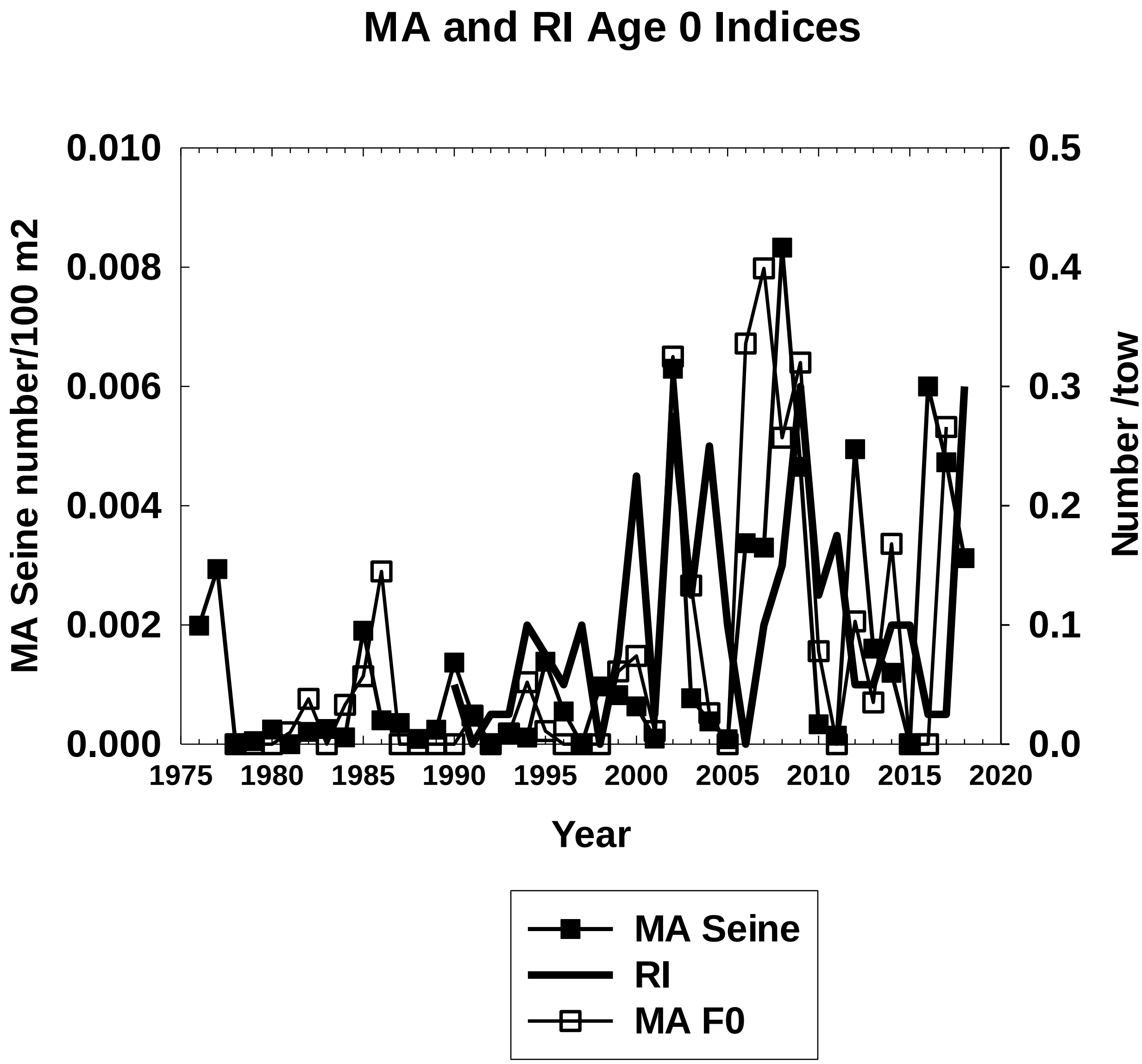


Figure 11. Massachusetts Division of Marine Fisheries (MA) annual seine and fall trawl survey and Rhode Island Division of Fish and Wildlife (RI) fall trawl survey age 0 abundance indices for summer flounder.

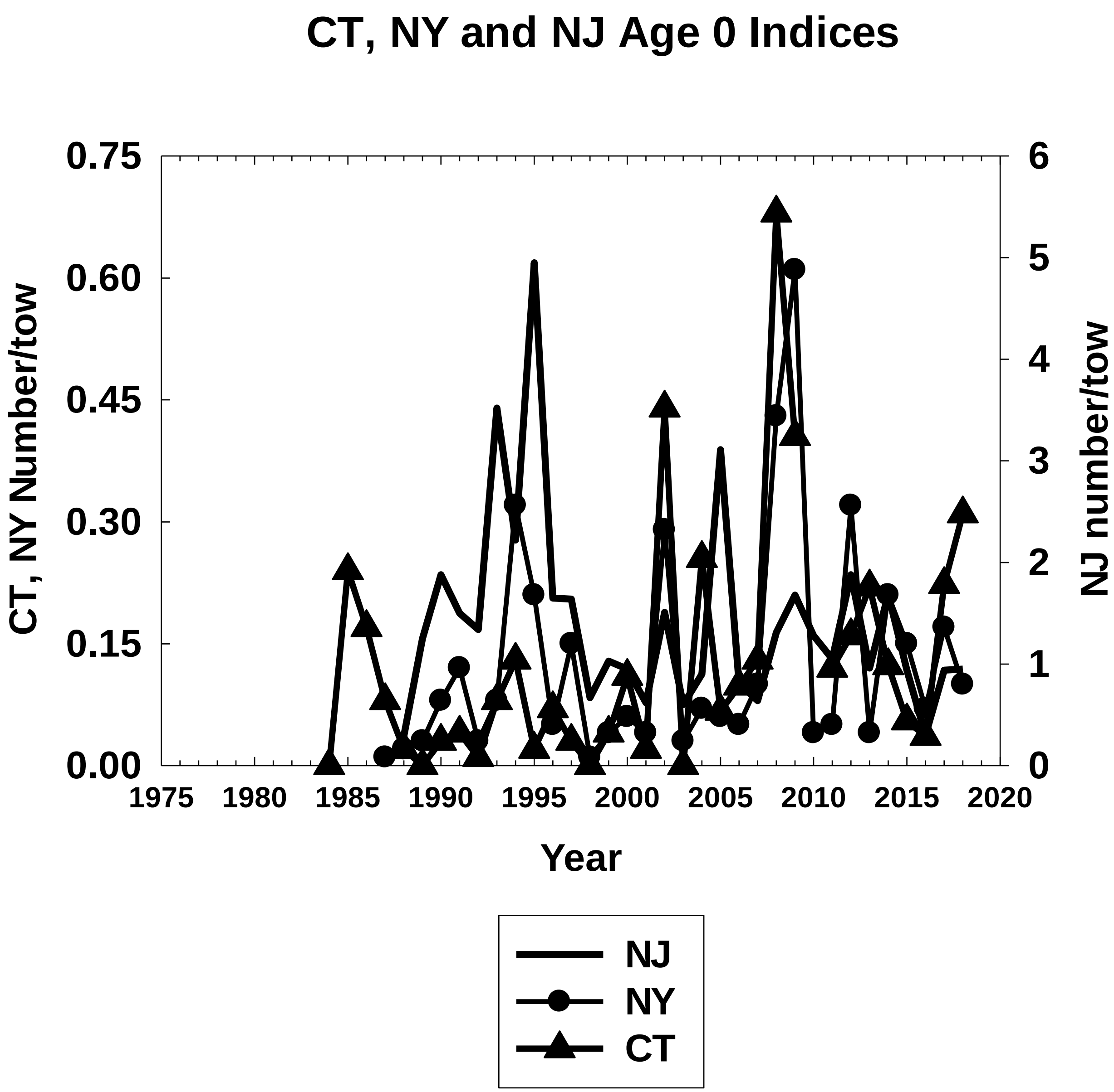


Figure 12. Connecticut Department of Energy and Environmental Protection (CT) fall, New York Department of Environmental Conservation (NY) annual, and New Jersey Division of Fish and Wildlife (NJ) annual age 0 abundance indices for summer flounder.

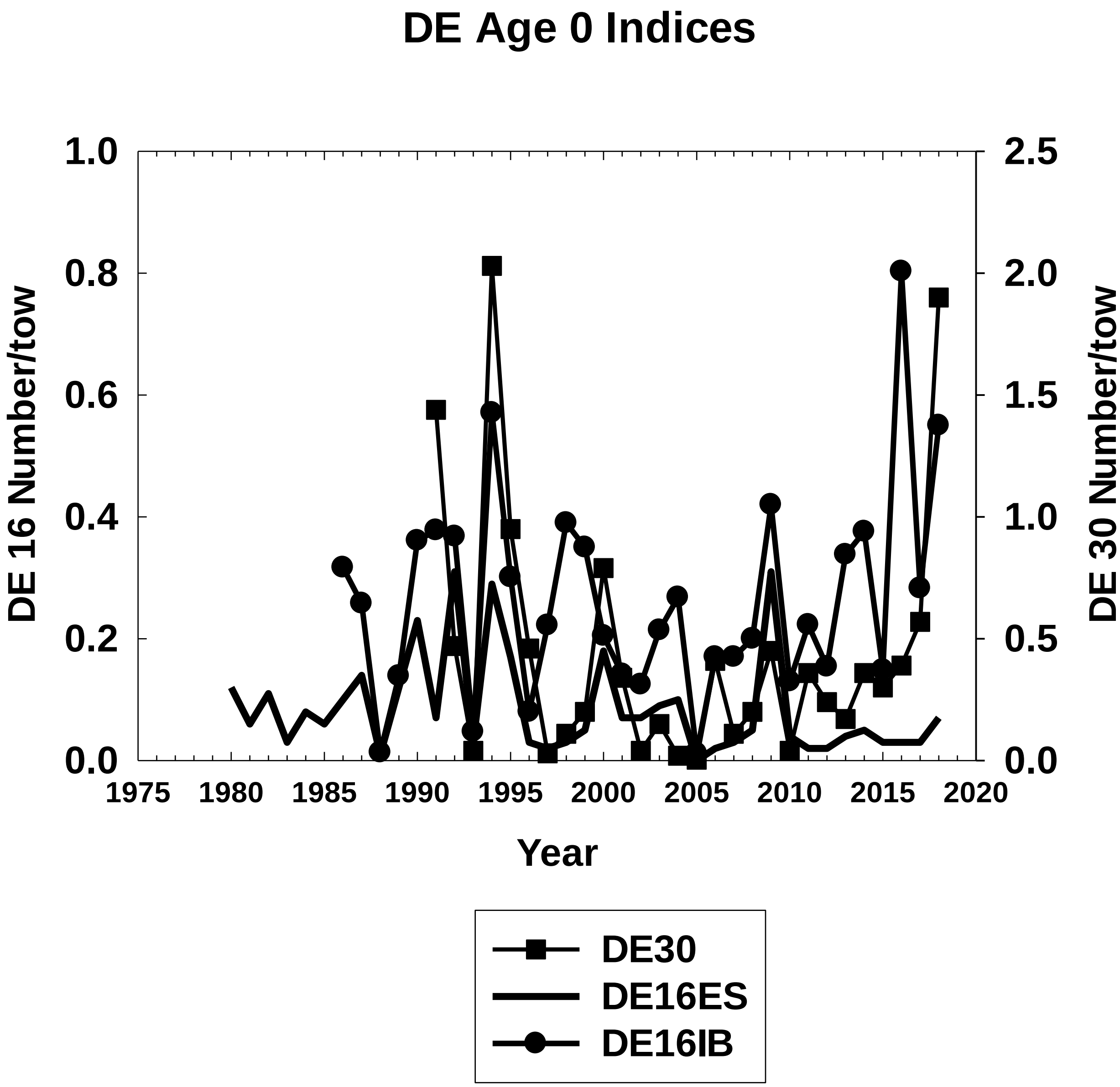


Figure 13. Delaware Division of Fish and Wildlife (DE) DEDFW annual 30-foot trawl (DE30), 16-foot estuarine (DE16ES), and 16-foot inland bays (DE16IB) trawl survey age 0 abundance indices for summer flounder.

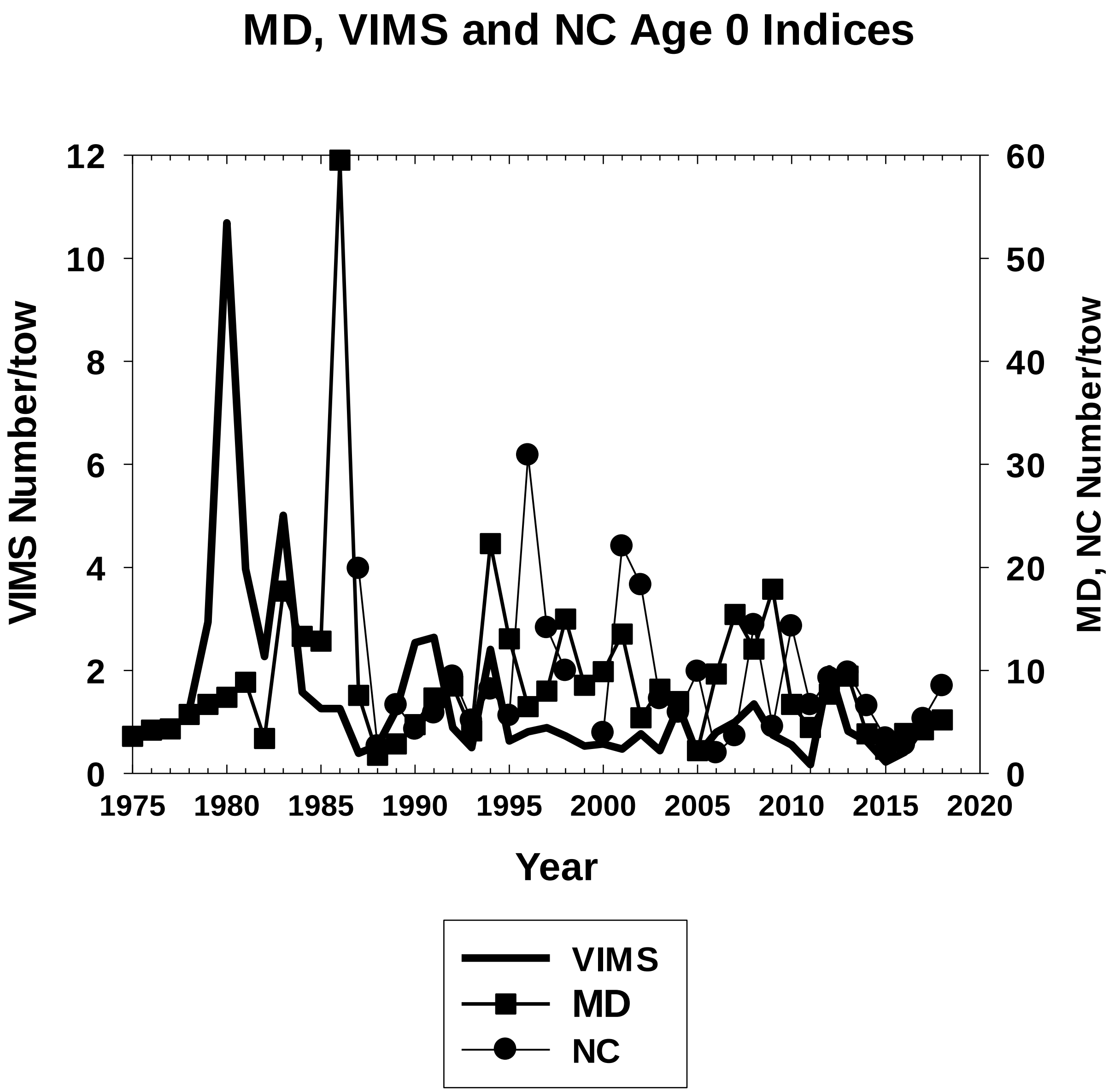


Figure 14. Maryland Department of Natural Resources (MD) annual trawl, Virginia Institute of Marine Science (VIMS) juvenile seine, and North Carolina Division of Marine Fisheries (NC) Pamlico Sound seine survey age 0 abundance indices for summer flounder.

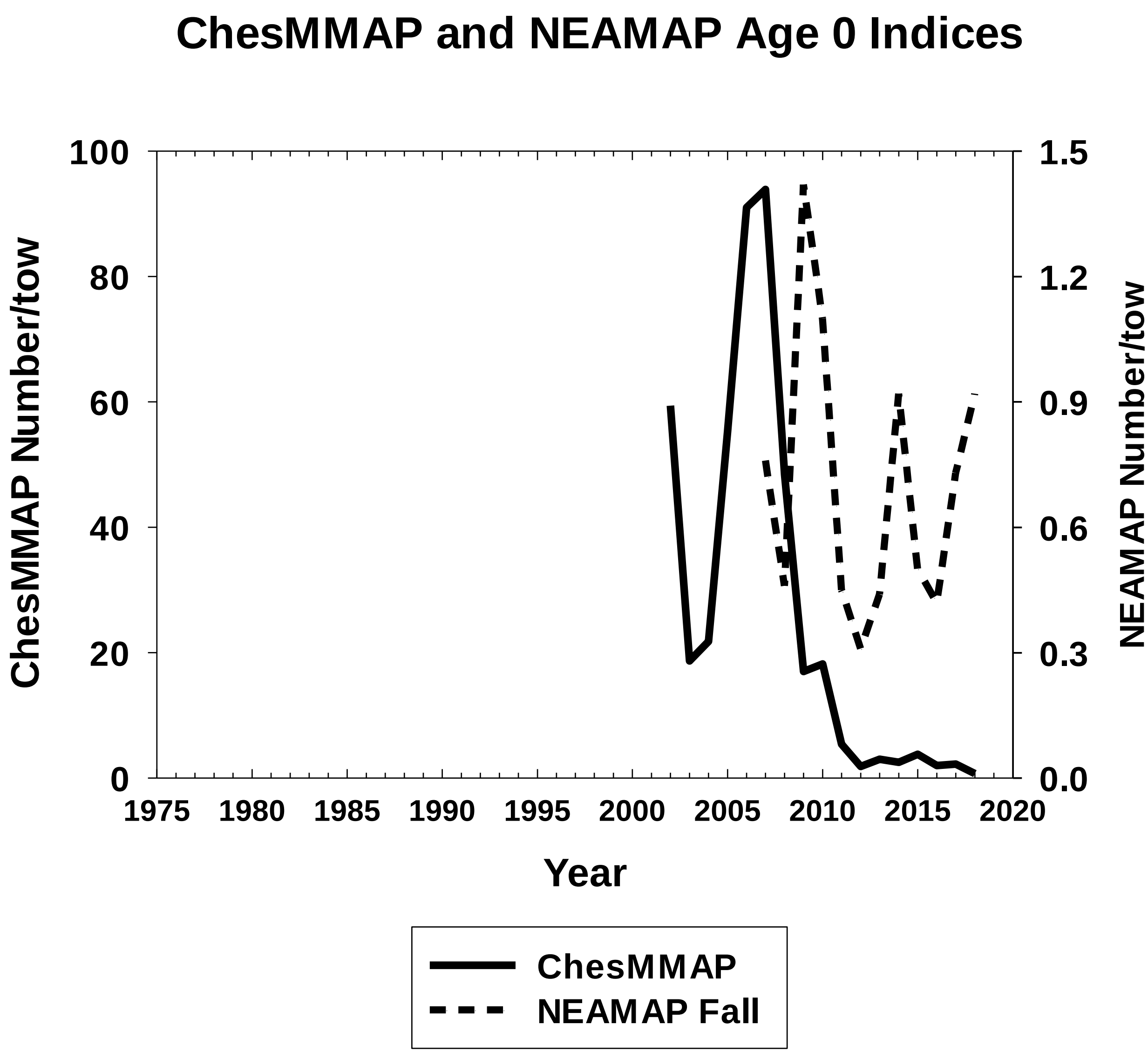


Figure 15. Virginia Institute of Marine Science Chesapeake Bay Multispecies Monitoring Assessment Program (ChesMMAP) annual and Northeast Area Monitoring and Assessment Program (NEAMAP) fall trawl survey age 0 abundance indices for summer flounder.

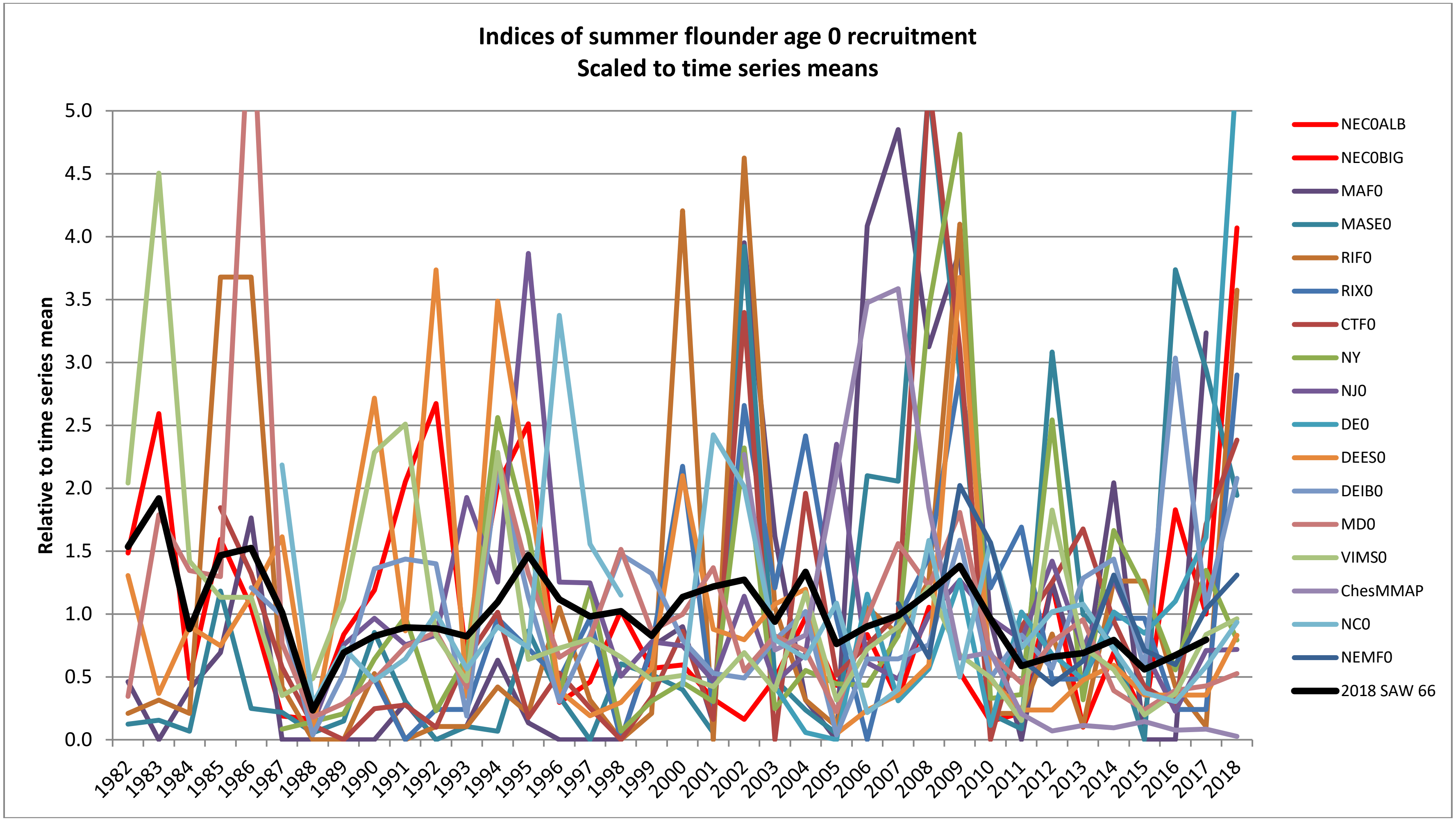


Figure 16. Summer flounder age 0 recruitment indices. Indices are scaled to the means of their respective time series. 2018 SAW 66 is the age 0 stock size estimate from the 2018 benchmark stock assessment.

Memo

To: Atlantic States Marine Fisheries Commission - Commissioners and Summer Flounder Board
Mid-Atlantic Fisheries Marine Council Members
Dustin Colson Leaning, Fishery Management Plan Coordinator ASMFC
Kiley Dancy Fishery Management Specialist MAFMC

From: Thomas B Smith

Date: September 15, 2019

Re: Executive Summary Summer Flounder Stock - Briefing Material Joint Meeting
October 7, 2019 Durham Convention Center

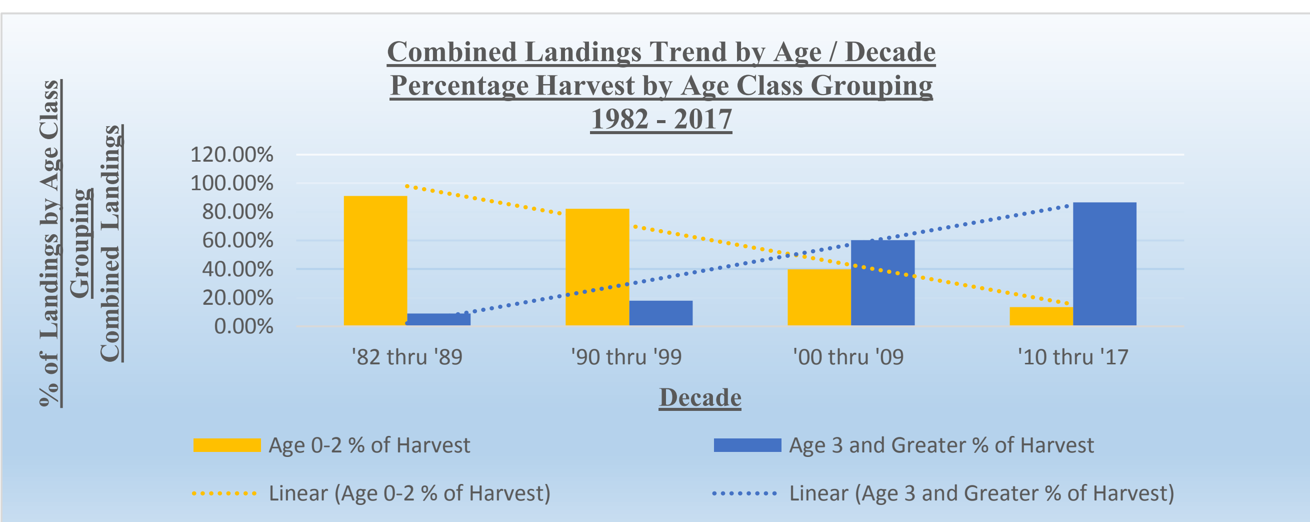
Executive Summary:

Following summation is predicated on data and analysis previously provided to various ASMFC and MAFMC personnel which can be found in this document as Exhibits 1 and 2 dated August 23, 2019 and September 5, 2019 respectively. The analysis, finding and conclusions mentioned in those previous memorandums are based on data extracted from the 66th and 57th Stock Assessment Reports.

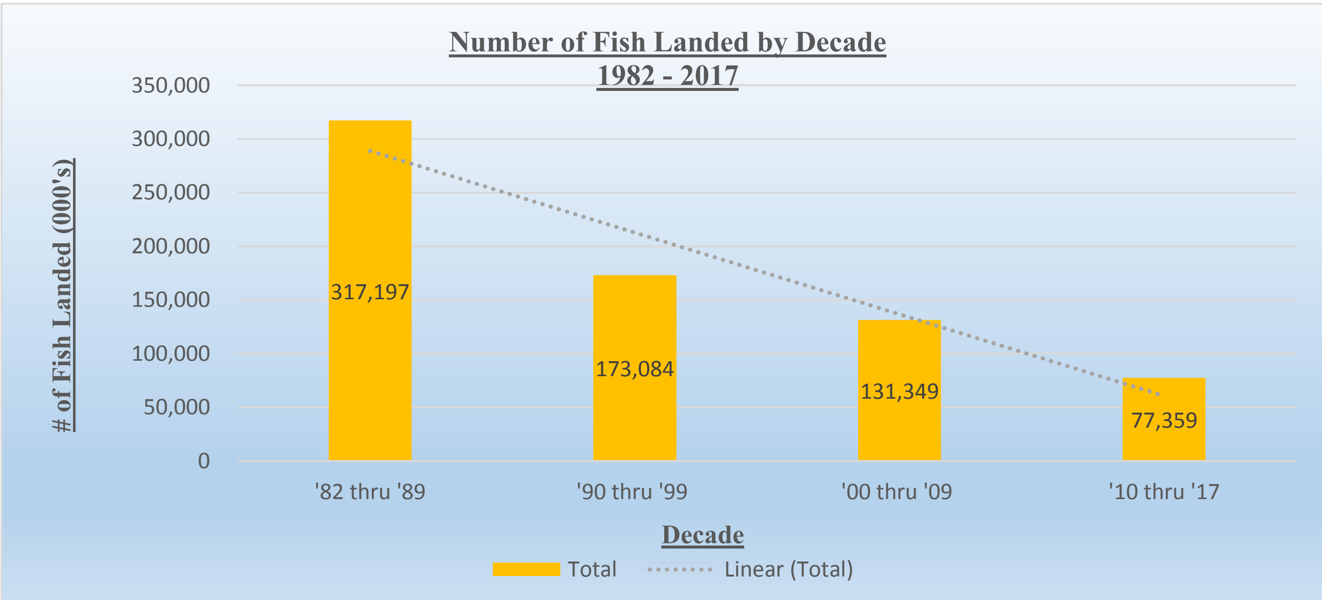
The intention of this summary is to elevate to the attention of the Commission and Council Members substantial changes and materially altering trends in the Summer Flounder Fishery leading to substantive declines in the fishery over the last 15 years. Declines caused by unintended consequences from past policy decisions which trend analysis all but guarantees will continue in the absence of a different philosophical approach to managing this fishery. The primary areas of concern are summarized below with further detail and support provided in Exhibits 1 and 2 of the document.

Primary Areas of Focus:

Combined catch composition (commercial and recreational) over the last four decades as it relates to age classes and number of fish harvested has experienced radical changes. Following charts illustrates that transformation.



- 91% of combined landings between the period 1982 to 1989 represented age classes 0 - 2. Safe to assume with a 13" or 14" minimum, most fish harvested within that period represented age classes 1 and 2.
- The trend of harvesting larger fish changed in the mid-nineties, accelerated over the following two decades of 2000 and continues today.
- For the period 2010 to 2017, ~87% of landings now consists of age classes 3 and above. Important to note that increase is not concentrated in any one age group, all age classes 3 and above have experienced substantial increases in harvest percentage-wise relative to the 80's and 90's.



- First and last decades represent 8-yr periods, 2nd and 3rd decades are 10-yr periods.
- Important to acknowledge the significant decrease in fish landed over this period of time and the corresponding effects on SSB and R
  - Average landings between 1982 – 1988 compared to landings between 1989 and 2017 with a 25% assumption for discard mortality factored in have decreased by more than **ONE BILLION** fish.
  - SSB grew between 1989 and 2003 by 900% as did R albeit at a lesser percentage. SSB reached its historical high in 2003 at ~68,000 metric tons "mt's".
  - From 2004 through 2017 SSB declined from 68,000 mt's to 43,000 mt's, a 37% decrease while R has declined from 71,270,000 to 42,415,000, a 40% decline. R in 2015 was 29,833,000, its lowest level since 1988 when SSB was a mere 9,000 metric tons.
  - **ONE BILLION** less fish landed over the last 28 years has translated to declines in the biomass, SSB and recruitment levels over the last 15 years.
  - Managing catch quotas is obviously an importat component of managing the fishery but catch in itself has been cut by over 75% over the last four decades and still the fishery is in a free fall decline over the last 16 years.

Gender Composition of SSB has been materially altered as catch levels have continued to focus on older age and predominantly sexually mature fish. Below chart illustrates the magnitude of that alteration.

Sex Ratio Table
Female Proportion by Age Group and Period

					Age			
Period	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7+**
'82 thru '17	33%							
'82 thru '99		55%	55%	90%	90%	80%	80%	90%
'00 thru '10		45%	45%	50%	50%	55%	55%	90%
'11 thru '17		30%	30%	45%	45%	55%	55%	70%

- Female composition of every age class comprising SSB has been weakened ranging from 22% to 50%. Absolutely material alteration in the gender composition of the spawning biomass.
- Recreational size limits mandates have caused the almost exclusive harvest of female summer flounder while commercial operators, albeit still allowed a 14" minimum, have elected to harvest older age fish to mitigate the economic impacts of 60% to 70% cuts in catch quotas since 1996.
- The regulations have materially altered the gender composition of SSB and as a result have caused significant damage to the relative recruitment strength of the stock.

Below table illustrates the above point causing a prolonged decline in recruitment, threatening the future viability and sustainability of the fishery.

Ratio Estimated Egg Production to R 1982 to 2017

Year	Projected Egg Production (000's)	Recruitment (000's)	R to Projected Egg Production Ratio	89 - '95 Average Ratio .00066%	Increased R at .00066% Ratio
1982	16,105,719,700	81,955	**0.00051%**	n/a	n/a
1983	20,266,944,900	102,427	**0.00051%**	n/a	n/a
1984	19,175,294,400	46,954	**0.00024%**	n/a	n/a
1985	15,058,322,300	78,263	**0.00052%**	n/a	n/a
1986	13,794,637,900	81,397	**0.00059%**	n/a	n/a
1987	13,342,443,400	53,988	**0.00040%**	n/a	n/a
1988	11,763,341,800	12,474	**0.00011%**	n/a	n/a
1989	6,282,419,900	36,963	**0.00059%**	n/a	n/a
1990	5,664,105,900	44,019	**0.00078%**	n/a	n/a
1991	7,223,653,000	47,704	**0.00066%**	n/a	n/a
1992	8,498,884,200	47,264	**0.00056%**	n/a	n/a
1993	7,780,877,800	43,928	**0.00056%**	n/a	n/a
1994	8,460,688,500	58,403	**0.00069%**	n/a	n/a
1995	9,923,683,000	78,348	**0.00079%**	n/a	n/a
1996	15,249,150,600	59,520	**0.00039%**	100,783	41,263
1997	20,908,251,400	52,374	**0.00025%**	138,185	85,811
1998	27,194,099,400	54,518	**0.00020%**	179,729	125,211
1999	27,367,751,200	44,100	**0.00016%**	180,876	136,776
2000	19,287,814,900	60,551	**0.00031%**	127,475	66,924
2001	19,544,092,300	64,979	**0.00033%**	129,169	64,190
2002	22,909,439,200	67,860	**0.00030%**	151,411	83,551
2003	26,921,143,000	50,131	**0.00019%**	177,925	127,794
2004	29,463,345,200	71,270	**0.00024%**	194,726	123,456
2005	31,034,259,000	40,634	**0.00013%**	205,109	164,475
2006	30,293,146,400	48,153	**0.00016%**	200,211	152,058
2007	32,232,028,500	52,646	**0.00016%**	213,025	160,379
2008	34,270,464,000	62,460	**0.00018%**	226,497	164,037
2009	37,500,208,300	73,747	**0.00020%**	247,843	174,096
2010	40,275,133,900	51,331	**0.00013%**	266,183	214,852
2011	35,047,836,100	31,296	**0.00009%**	231,635	200,339
2012	34,203,610,400	35,187	**0.00010%**	226,055	190,868
2013	32,301,264,900	36,719	**0.00011%**	213,483	176,764
2014	28,484,380,000	42,271	**0.00015%**	188,256	145,985
2015	26,389,524,600	29,833	**0.00011%**	174,411	144,578
2016	24,964,487,500	35,853	**0.00014%**	164,993	129,140
2017	24,131,440,800	42,415	**0.00018%**	159,487	117,072

The above table reflects the trend in the ratio of published recruitment statistics relative to estimated egg production from 1982 to 2017. Trend is alarming to put it mildly in terms of the drop off in egg production over the last decade and reduced ratio of new recruits relative to egg production between the years 1996 and 2017 (red shaded area). Projected egg production is in **TRILLIONS** and arrived at by taking biomass population by age group times percentage sexually mature fish times assumed percentage of females times an assumed number of eggs produced per female which is extremely conservative. Recruitment numbers are in **MILLIONS**. Again all based on data from the 66th SAW, details which can be found in Exhibit 2.

Estimated egg production began increasing in the 90's after catch levels were brought under control. This marked the beginning of the period 1989 to 2003 when SSB increased 900%. In 1996, there was a noticeable and significant decline in recruitment statistics relative to estimated egg production which has continued since and become substantially more extreme. 1996 coincides with the beginning of the trend harvesting larger fish and could very well be impacted by the higher percentage of the overall commercial harvest occurring during the fall and winter offshore seasons, the primary spawn period for summer flounder. Either way, this is a cataclysmic change in recruitment statistics based on a 35-yr trend and not a one-time anomaly. To add color, recruitment in 1983 was 102 million relative to estimated egg production of ~20 trillion and an SSB of 29,000 metric tons. In 2017, SSB was ~43,000 metric tons, estimated egg production was ~24 trillion while new recruits were a mere 42 million, an ~60% decrease in recruitment based on an ~48% increase in SSB. Until this trend is understood and corrected, the fishery will continue the path of decline it's been on since 2004. **If the above statistics are wrong, then recruitment levels are significantly higher than reported and the stock is in a much healthier condition than reported in the assessment. If the statistics are correct, there's a dire problem in the fishery not being addressed. My personal opinion is the later.**

If we're to believe the above data, this fishery will never recover with the current regulations. Below average recruitment levels are the result of material alterations in the gender composition of SSB due to the increased harvest of older age class fish. **But the data also reveals egg production in the absolute is up, yet recruitment levels as a percentage of that increased egg production have decreased by as much as 80% which points to a completely different problem. Egg production isn't translating into new recruits. At minimum you have to consider the consequences the offshore commercial fishery is having on the primary spawn of these fish as they migrate to their wintering grounds in the most highly concentrated schools on record.** The impacts of below average recruitment will be felt for years and since recruitment has been down significantly for the last 8 to 9 years not including 2018 and 2019, the fate of the fishery over the foreseeable future has already been determined. Even with draconian cuts in catch amounting to more than a billion less fish harvested in the last 28 years, recruitment which is the cornerstone of any fishery is in a free fall, an unexplained free fall based on comments made in the "Special Comments" section of the 66th SAW but one I believe to be very explainable based on what's been outlined above. Lower recruitment levels combined with the increased harvest of older age classes (compounded by this year's 40% increase in commercial catch quota) will result in further erosion in the gender and age composition of SSB causing continued damage to recruitment strength of SSB which will only exacerbate the current recruitment problem. This extremely vital fishery is in a downward spiral which won't correct itself without changes to the current regulations and a philosophically different approach managing the fishery.

Between 2005 - 2017, new recruits numbered approximately 582 million. For the same period, landings were 132 million meaning there were 450 million fish additive to the biomass. *The biomass population actually decreased over that period by ~62 million fish from 183 million to 121 million which means based on models approximately 500 million fish were removed from the biomass over that timeframe.* Mortality rates for new recruits are already factored into the above recruitment statistics. Dead discard rates since I'm addressing landings would make up some of the difference but even if I applied a 25% factor to the 132 million in landings it would only explain approximately 45 million of the difference. Question is "What happened to the other 465 million fish?" Answer I received is the difference relates to mortality caused by factors other than fishing including disease, predation, environmental etc. If that's true and 80% (465 million / 582 million) of the biomass population will succumb to non-fishing related mortality, it magnifies the need more than ever to protect the spawn otherwise it stands no chance of recovery.

Combine the above with the following excerpt from **TOR6** (Terms of Reference) from the 66th SAW *contributing factors. Regardless of cause, declines in survey indices suggest that current mortality from all sources is greater than current recruitment inputs to the stock. If recruitment improves, current catches may allow the stock to increase, but if recruitment remains low or decreases further, then reductions in catch will be necessary.*

66th SAW Assessment Report 22 A. Summer Flounder

along with Special Comments from page 17 of the 66th SAW

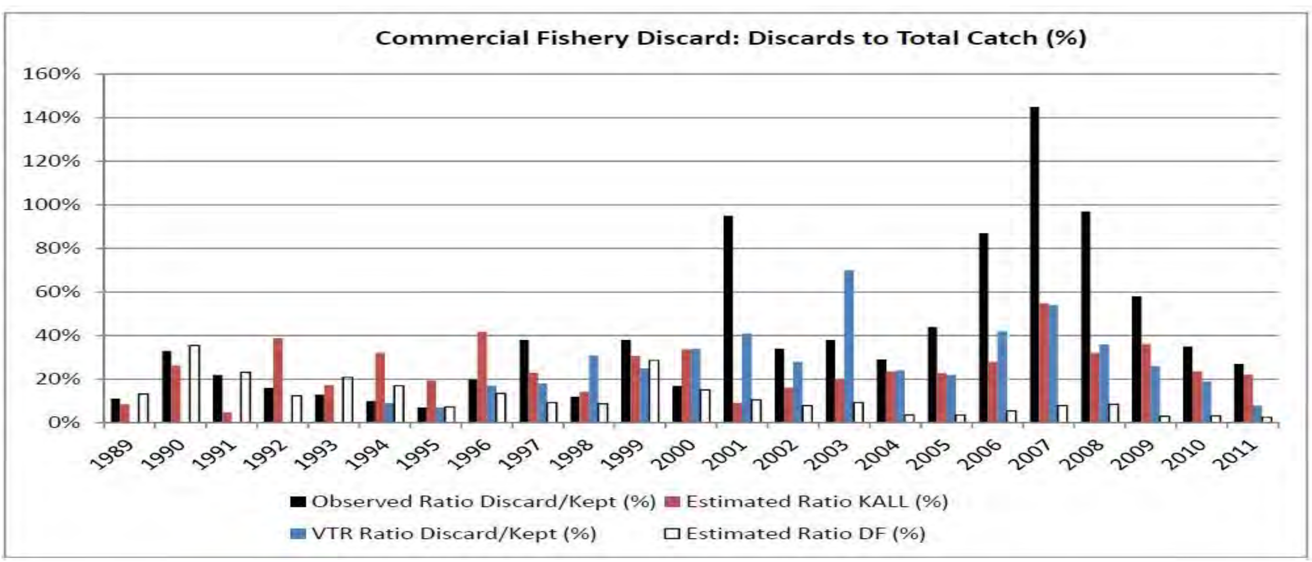
Special Comments

The assessment shows that current mortality from all sources is greater than recent recruitment inputs to the stock, which has resulted in a declining stock trend. Although recruitment indices have been below average in the most recent years, the driver of this pattern has not been identified, nor is it clear if this pattern will persist in the future.

66th SAW Assessment Summary Report 17 A. Summer Flounder

and it essentially summarizes the resulting impact of the chronology of events outlined above.

Please review Section 9 of Exhibit 1 titled "Commercial / Recreational Discard Rates" as well as the below graph from ***page 302, 57th SAW***. Comparable information was not included in the 66th SAW for years 2012 to 2017.



Revealing chart regarding commercial discard trends comparing percentages from observed trawls to percentages obtained from VTR's. The disparity between both is substantial and if observed trawl percentages were used in models it would have significant implications quantifying annual commercial catch levels. Post 2000, observe the spike and degree of difference in percentage discards between observed trawls and percentages submitted on VTR's. In all but one year (2003), observed discard percentages significantly exceed non-observed. In 2001, 2006, 2007 and 2008, percentages exceeded 80% of catch with a high of ~143% in 2007. 2009 was almost 60% itself. Compare these relationships to 1994, 1995 and 1996 when the percentages were substantially lower and relatively comparable.

When the "1997 Fishery Specifications", page 28 of the 66th SAW report, increased the commercial size limit from 13" to 14" and commercial landings plummeted from 15.4 million lbs. in 1995 to 8.8 million pounds in 1997, it's my opinion these were the critical factors and impetus leading to the trend in the commercial harvest of older age fish which has continued through today. A trend which resulted per the above chart in a catastrophic increase in dead discard mortality, by-catch mortality, the harvest of larger sexually mature summer flounder and a primary reason why recruitment levels have ultimately fallen.

Commercial discard rates in the 66th SAW report average ~17% for the period 2000 to 2017. The above graph for the same period reflects one year within that time frame (2000) where discard rates on observed trawls as a percentage of catch is below 20%. One year in eighteen! Every other year is considerably higher with the five years referenced above having a combined average of almost 100%. Why would the commercial rates used in the models be materially lower than rates from observed trawls which would significantly increase commercial catch statistics and discard amounts. At the same time, recreational discard rates have been increased based on the new MRIP model with information that the Technical Committees themselves characterized as having high degrees of uncertainty. Two completely opposing standards used in arriving at discard rates. Empirical evidence from commercial trawl activity is ignored while highly speculative data from MRIP is used in quantifying recreational catch.

Additionally, please review Section 8 of Exhibit 1 titled "Commercial / Recreational Access to Biomass" as size limit disparities between commercial and recreational groups have provided commercial interests with harvest access to an estimated 35% greater portion or approximately 27 million more fish of the harvestable biomass. Recreational discards are subsidizing the increased composition of commercial catch consisting of older age fish while creating unprecedented levels of dead discard mortality as evidenced by the above charts.

The above narrative outlines the road map and reasons causing a once thriving fishery two decades ago to reverse fortunes and begin a 15-yr decline which continues today and will continue until regulations are changed. Regulations have created an enormous imbalance in the fishery, in catch composition leading to an age and gender imbalance in SSB. **THOSE CHANGES HAVE DESTROYED THE RECRUITMENT STRENGTH OF THE FISHERY**. If changes aren't made in the management of this fishery, the decline will continue until the only options left are one's no one really wants to consider. Recreational size limits have to come down. Commercial catch sizes have to come down and discard percentages need to be dealt with. The primary spawn, today more than ever, needs to be protected and serious consideration needs to be given to closing the fishery during that time frame to commercial netting. I'm not advising reduced quotas; I'm suggesting re-allocating of existing quotas as to not coincide with the spawn. I know that recommendation will be met with tremendous resistance by some but we can ignore the facts and lose another valuable fishery or acknowledge the facts, make the tough decisions and save this fishery for the future benefit of both commercial and recreational constituencies. Those are the choices the Commission and Council need to make.

Commercial operators have as much right to harvest and make a living from this public resource as the hundreds of thousands if not millions of recreational anglers have the right to access the same resource. Neither party's rights can be at the health of the fishery or the expense of other constituent's rights and the countless businesses dependent on it. The answer for recreational is a slot limit needs to be introduced and size limits need to gradually be brought back to the sizes in place in the 90's and early 2000's when SSB grew by 900% and recruitment remained strong relative to today's levels. Commercial needs to have their ex-vessel values protected which legislation should be able to accomplish. The Federal government, the most powerful institution in the world, should be able to insure that happening. Make every lb. of summer flounder the same price so that small, medium, large and jumbo fish all demand the same price per lb. and the issue of high grading is immediately eliminated while dead discard and by-catch mortality levels should be materially reduced. Larger fish won't need to be harvested providing much needed relief to the older age groups which have all declined in population other than 7+ which comprises the smallest percentage of the overall biomass population. If retail summer flounder prices are in the $20/lb. plus range, commercial operators deserve a bigger piece of that pie. If it has to be absorbed by consumers or others involved in the distribution chain, make it happen but commercial operators who risk capital and safety harvesting the ocean's bounty deserve to be kept whole and fairly compensated. They assume the risks; they deserve to make a respectable profit, justify their investment and be able to carve out a comfortable living as generations before them have. But balance in the fishery needs to be restored otherwise like cod, whiting, mackerel, winter flounder, weakfish etc., everyone loses. As I mentioned, the decision and power rests in the hands of the Commission and Council to rebuild this fishery but future catch cuts or shortened recreational seasons without addressing age and gender composition of catch won't address the issues causing the fishery's 16-yr decline. If regulations aren't changed addressing the above mentioned problems which have absolutely decimated recruitment levels, it all but guarantees we'll lose this extremely important fishery and as I said earlier everyone loses.

Exhibit 1

Memo

Exhibit 1

To: Dustin Colson Leaning, Fishery Management Plan Coordinator ASMFC
Kiley Dancy Fishery Management Specialist MAFMC

From: Thomas B. Smith

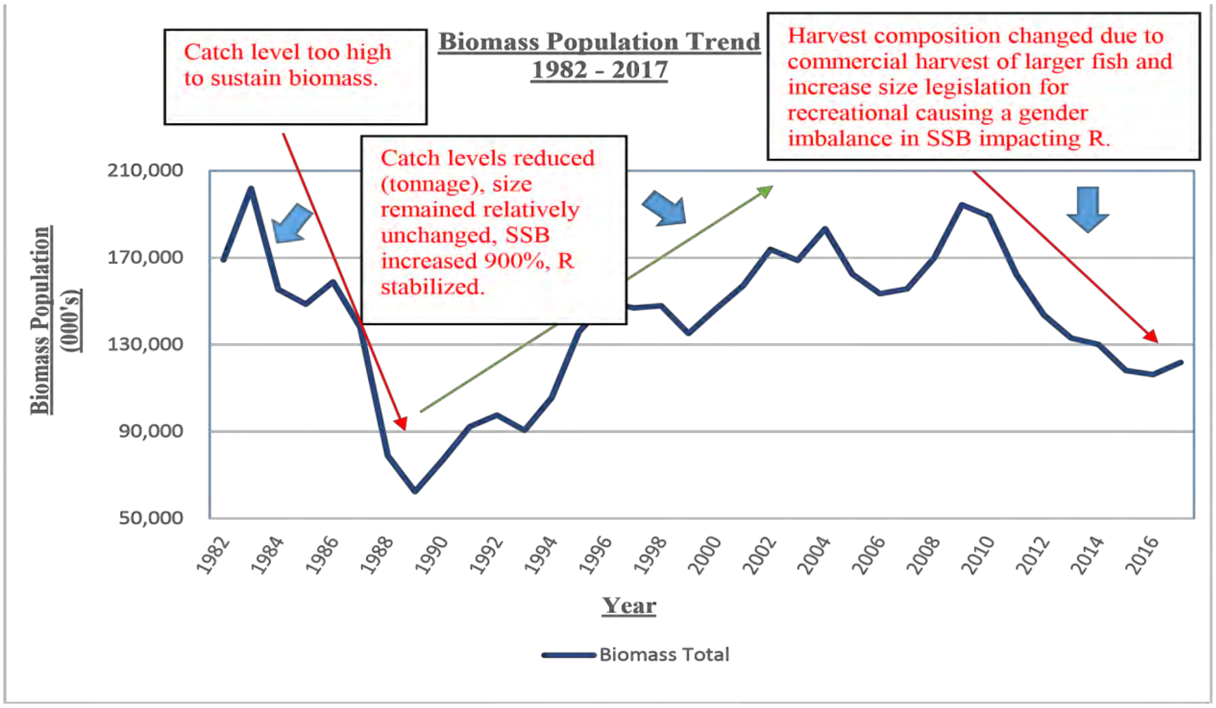
Date: August 23, 2019

Re: Status Summer Flounder Stock

TABLE OF CONTENT:

INTRODUCTION:

I've spent the better part of the last three years researching and analyzing data regarding the summer flounder fishery and reading extensive amounts of material provided in both the 57th and 66th SAW reports. A lot of information to work with, a lot of divergent theories and opinions being discussed. I'd like to share mine with the Commission and Council in the hopes it might add a different perspective on the issues holding the fishery back. Please review and reference the following with an objective perspective, the following analysis and observations were made to assist in the management of the fishery, return it to health and benefit the many who depend on it for their livelihood or recreational enjoyment.



SSB per the above illustration declined dramatically between the years 1982 to 1989, the result of overzealous catch levels disproportionate to the size of the biomass and SSB. Once catch levels were adjusted downward (per the below graph in Section 1), an absolute correct decision by fishery management, SSB embarked on a 15-yr increase from approximately 7,000 metric tons in 1989 to approximately 68,000 metric tons in 2003 or an almost 900% increase over that period. An increase associated with significantly higher recreational possession limits and significantly lower recreational size limits along with catch levels considerably greater than today for both recreational and commercial concerns. Obviously the regulations in place for a majority of that period were responsible for fueling the growth of the fishery.

What the facts will show which began in the mid-nineties and accelerated in subsequent decades, in my opinion changing the trajectory of the fishery, were two changes. First the harvest of larger older age class fish by commercial operators in spite of maintaining a 14" minimum along with a similar increase by recreational anglers due to the onset of increased size regulations addressed below completely altering the age and sex composition of catch over the last four decades. Second, the consequences of that alteration in catch composition led to an equally and conceivably more relevant imbalance in the gender composition of SSB ultimately causing a substantive decline in recruitment statistics. Reference to both matters are documented in the Catch and Recruitment sections of this document.

If we're in agreement the data, which is marine fisheries own data, is indeed illustrating the above, why would we deviate from regulations which promoted 900% growth in SSB, allowed higher harvest levels, maintained continuity in harvest sizes between recreational and commercial interests to regulations which over the last 14 years that have caused a 35% decline in SSB, an almost 30% reduction in the overall biomass population, lower recruitment levels, increased size limits and lower possession limits for recreational anglers, 50% cuts in catch levels, a completely disproportionate share of the biomass to harvest (~35% of population or ~35 million fish) available only to commercial with no new management methodologies on the foreseeable horizon which would provide hope or reason to believe these trends won't continue. Regulatory decisions since the early 2000's have caused a series of unintended consequences leading to the above. Until policy decisions are made which address catch composition, SSB will continue its decline as will recruitment levels and the fishery stands no chance of rebuilding. Reducing catch quotas, increasing or even maintaining size limits or shortening seasons recreationally will not change the trajectory the fishery is on, the last 15-years prove that. None of those change catch composition or the trend of harvesting larger sexually mature fish with higher proportions of females having higher degrees of fecundity which are the cornerstones of the decline we've been witnessing since 2004.

SECTION 1. – CATCH :

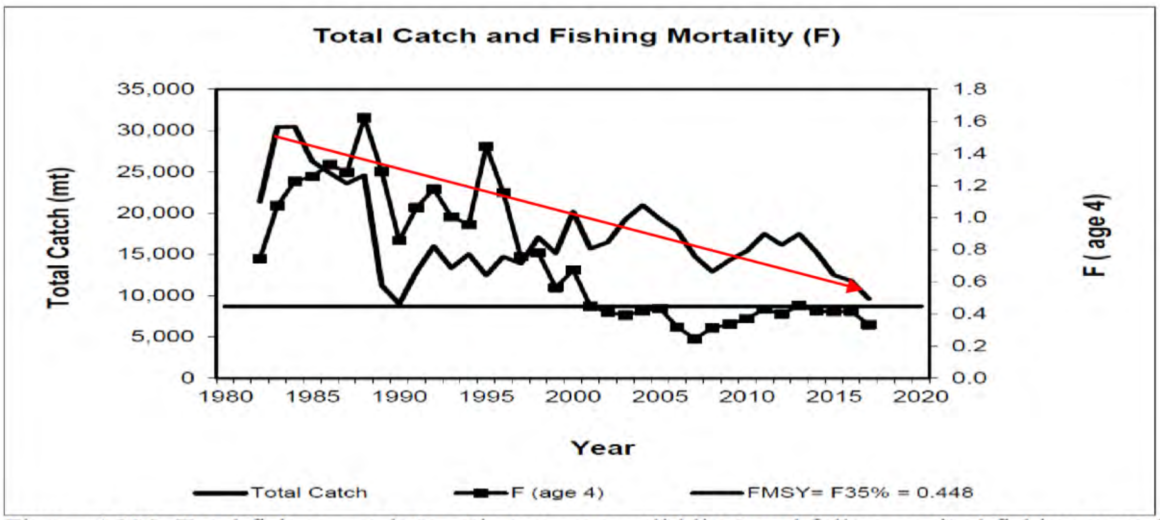
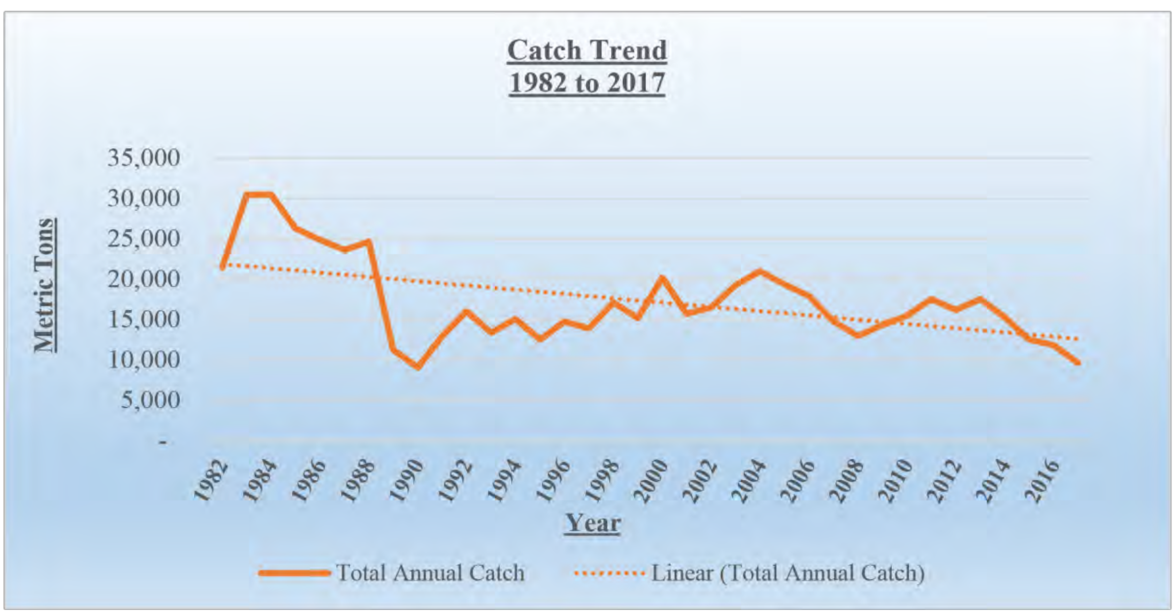


Figure A209. Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder. The horizontal solid line is the 2018 SAW-66 recommended fishing mortality reference point proxy FMSY = F35% = 0.448.

Source 66th SAW Assessment Report - Page 448



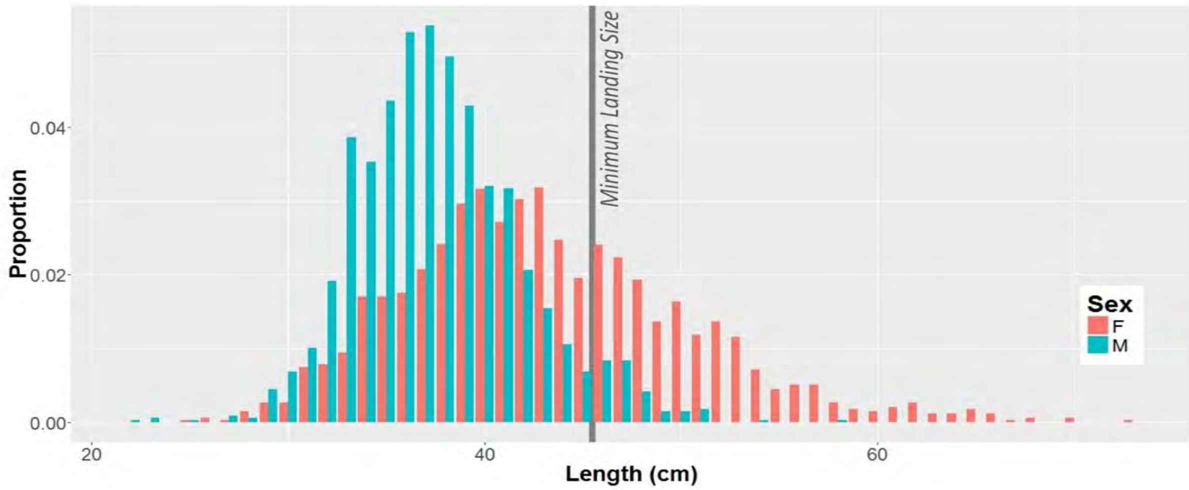
Catch per the above graph illustrates a declining trend over the last 35 years. Catch between the years 1982 to 1989 averaged ~24,000 metric tons annually while SSB averaged 21,000 metric tons a year. Too high a percentage of SSB was being harvested annually and SSB as a result declined from ~31,000 metric tons in 1982 to ~7,000 metric tons in 1989, its lowest level in the last 38 years. In 1989, fishery management made the right decision cutting catch levels by more than 50%, remained within that range over the ensuing years with modest increase through 2003 when SSB reached its highest level at ~68,000 metric tons, a 900% increase throughout that timeframe.

It's important to note when catch levels were cut by more than half from an average of 25,940 metric tons annually between 1982 to 1988 to 14,824 metric tons in 1989, tonnage was cut while size limits were left unchanged for both recreational and commercial concerns. At the time, size limits were either 13 or 14 inches, the same for both recreational and commercial. On the surface that might appear an innocuous point but I believe it's relevant when size limits began changing between groups which I touch on later in the document. It wasn't until 1997 recreational size limits increased above 14 inches to 14.50, 15 inches for 1998 to 1999, 15.50 inches for 2000 and 2001 and increased to 17.04 on a weighted average basis between NJ, NY, Ct and RI in 2002 when Framework 2 establishing state-specific conservation equivalency measures became effective. Recreational sizes continued increasing over the ensuing years to a high of 19.68 inches in 2009 to the current 18.82 inches today, again on a weighted average basis per the below table.

Analysis of State Recreational Size and Possession Limits
New Jersey, New York, Connecticut and Rhode Island
Years 2002 to 2019

	------- Size -------				------- Possession --------							
Year	NJ	NY	Ct	RI	NJ	NY	Ct	RI	Total	Weighted Average Size	CM's	Average Possession
2002	16.5	17	17	18	8	7	6	5	26	17.04	43.28	6.5
2003	16.5	17	17	17.5	8	7	6	5	26	16.94	43.03	6.5
2004	16.5	17.5	17	17.5	8	3	6	7	24	17.04	43.28	6.0
2005	16.5	17.5	17.5	17.5	8	5	6	7	26	17.19	43.66	6.5
2006	16.5	18	18	17.5	8	4	6	7	25	17.38	44.15	6.3
2007	17	19.5	18	19	8	4	8	7	27	18.19	46.20	6.8
2008	18	20.5	19.5	20	8	4	5	7	24	19.31	49.05	6.0
2009	18	21	19.5	21	6	2	3	6	17	19.68	49.99	4.3
2010	18	21	19.5	19.5	6	2	3	6	17	19.15	48.64	4.3
2011	18	20.5	18.5	18.5	8	3	3	7	21	18.60	47.24	5.3
2012	17.5	19.5	18	18.5	5	4	5	8	22	18.34	46.58	5.5
2013	17.5	19	17.5	18	5	4	5	8	22	17.95	45.59	5.5
2014	18	18	18	18	5	5	5	8	23	18.00	45.72	5.8
2015	18	18	18	18	5	5	5	8	23	18.00	45.72	5.8
2016	18	18	18	18	5	5	5	8	23	18.00	45.72	5.8
2017	18	19	19	19	3	3	3	4	13	18.77	47.68	3.3
2018	18	19	19	19	3	4	4	6	17	18.82	47.80	4.3
2019	18	19	19	19	3	4	4	6	17	18.82	47.80	4.3

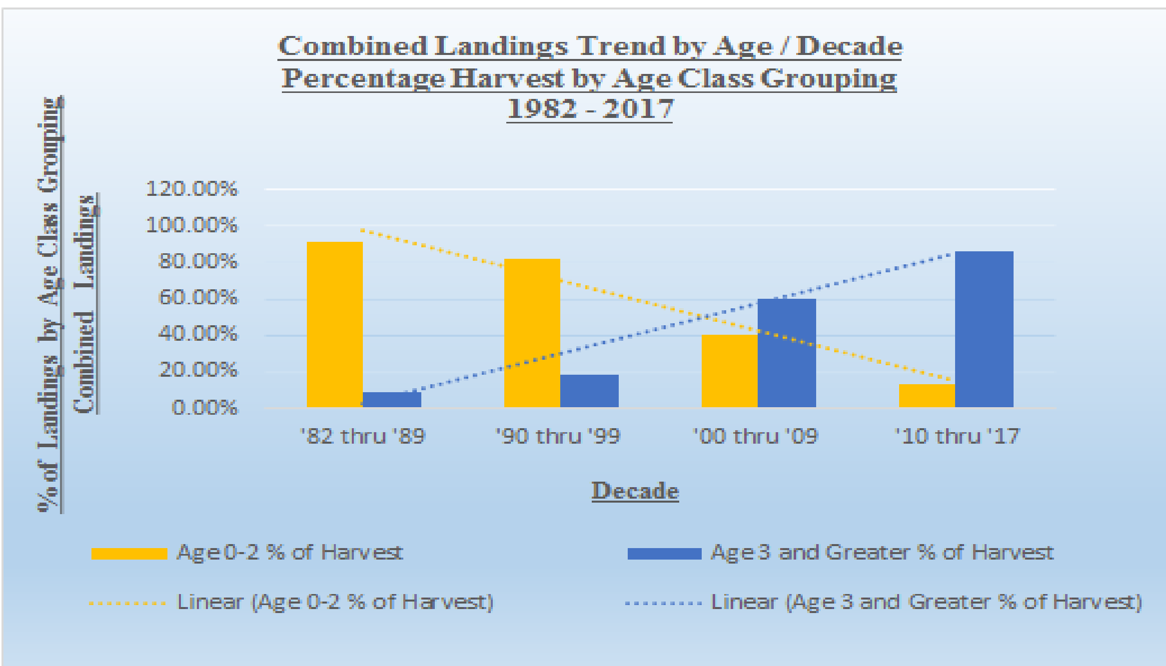
Note:
NY '04 had a season of May 15 - Sept 6. Size limit 17" through 7/30 and raised to 18" remainder of season. 17.5" used for analysis.
Ct. has ~46 designated shore sites with lower size limits, state-wide size limit used for analysis.
NJ has lower size limits in certain years for Delaware Bay and Long Beach Island, state-wide size limit used for analysis.
Above 4 states comprised 81% of average recreational landings for the years 2015 - 2017. Source Page 85 - 2019 Summer Flounder Specifications

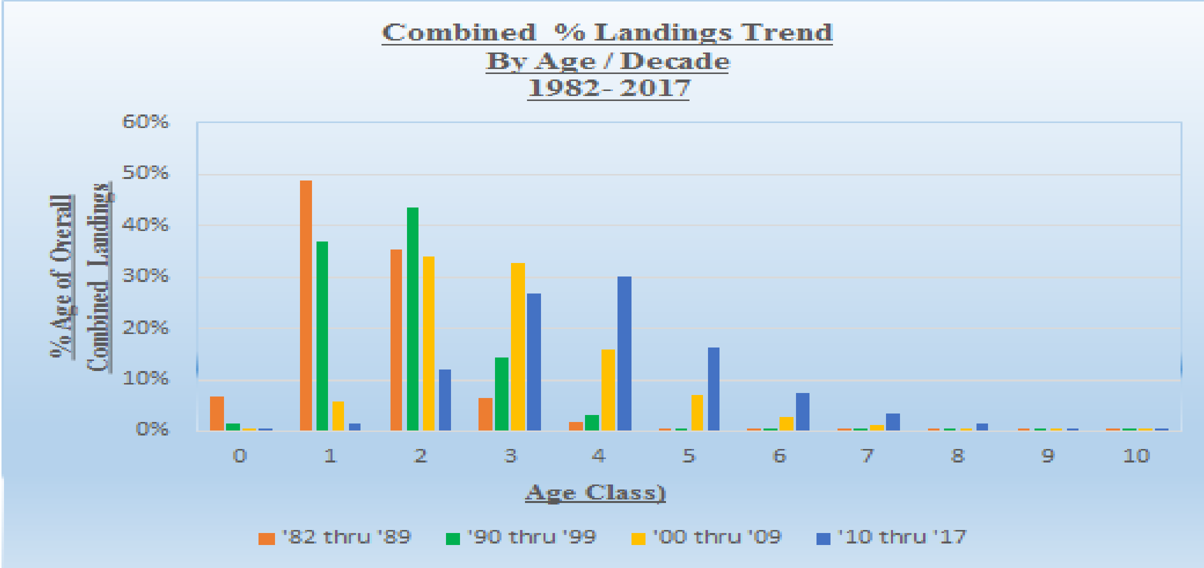


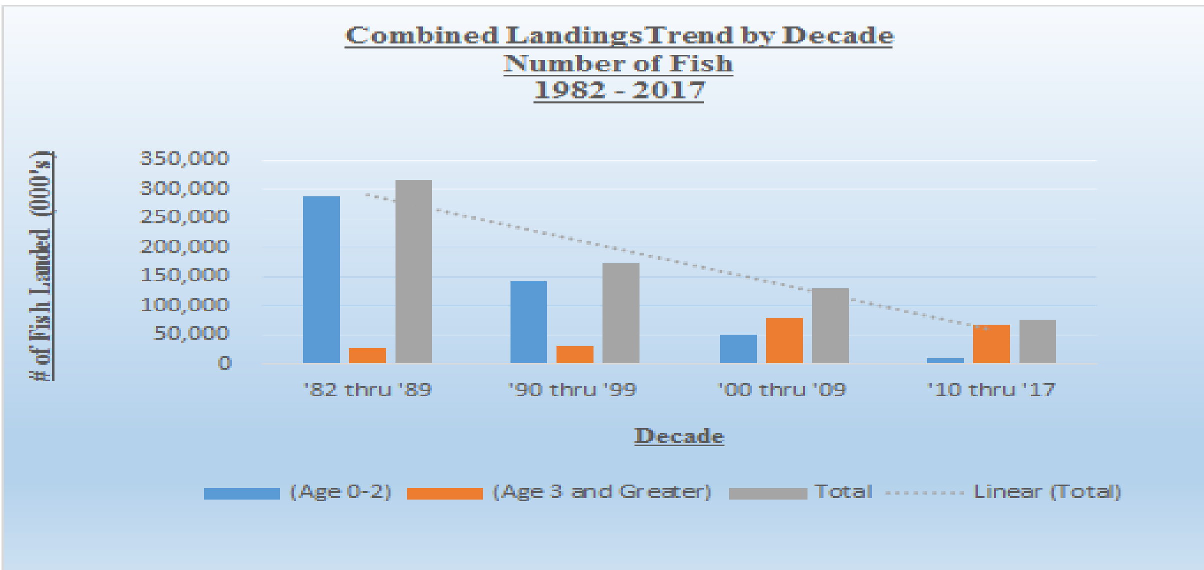
Source for above graph is **R*utgers Sex and Length Study*** and the minimum landing size bar is 18 inches or 45.72 centimeters. Observe the disproportionate change in gender mix based on increased sizes which begins at approximately 42 centimeters or 16.50 inches. In the above

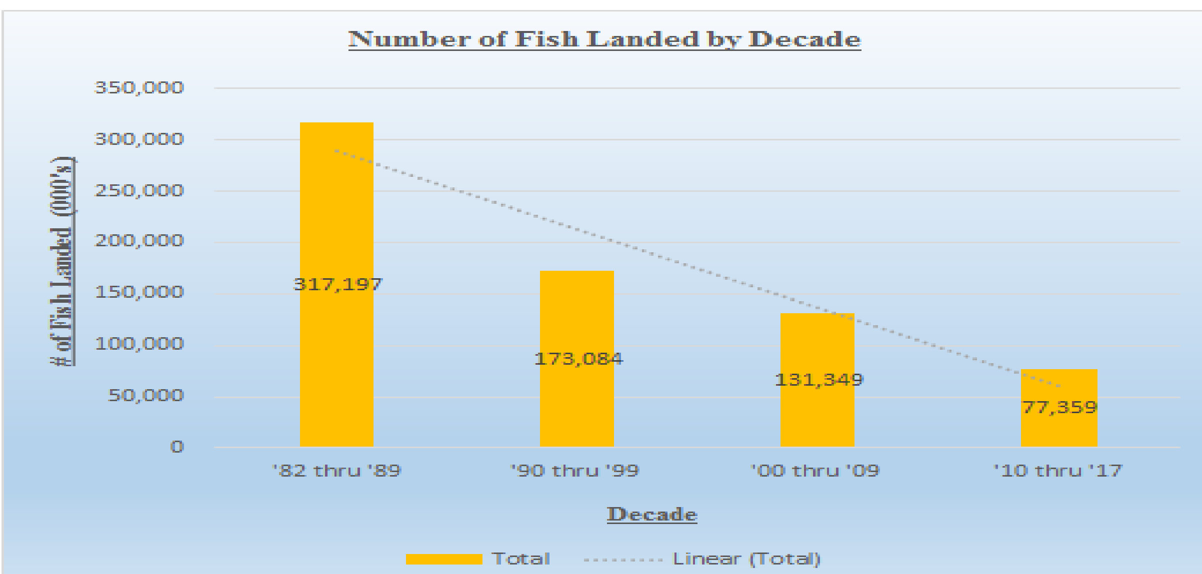
"State Size and Possession Limit" table, there's not one year from 2002 forward which falls below that threshold. Pay special attention to how the composition intensifies as size increases.

SECTION 2 - LANDINGS COMPOSITION CHANGE:

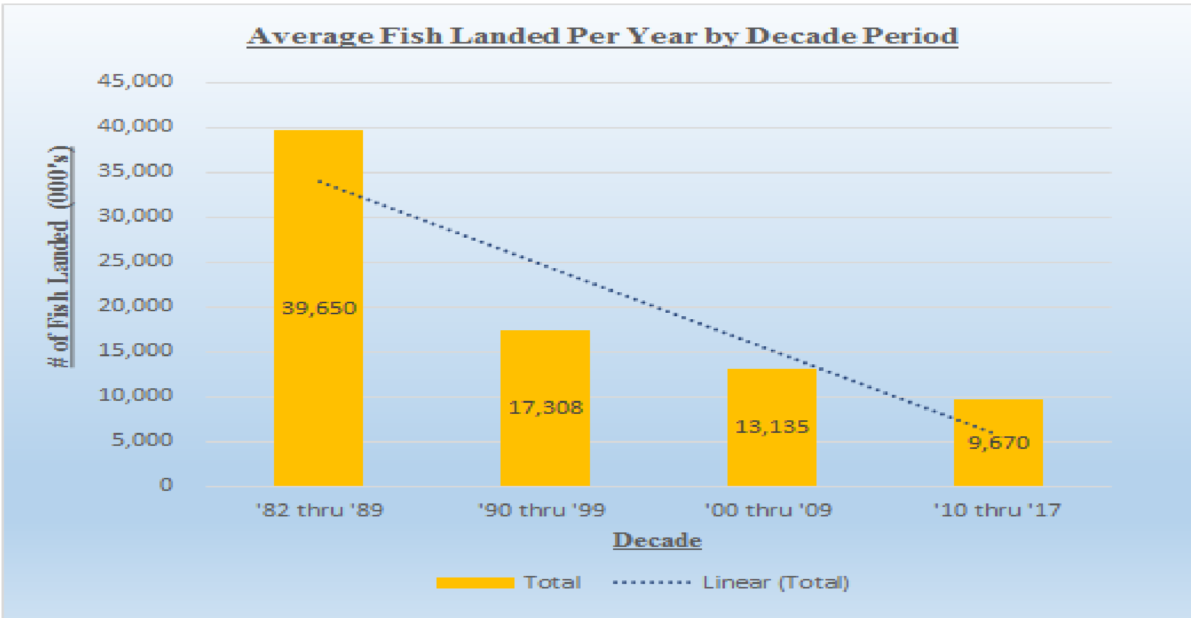



Combined % Landings Trend
By Age / Decade
1982- 2017
% Age of Overall Combined Landings
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
9
10
Age Class)
'82 thru '89
'90 thru '99
'00 thru '09
'10 thru '17


Combined Landings Trend by Decade
Number of Fish
1982 - 2017
# of Fish Landed (000's)
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
'82 thru '89
'90 thru '99
'00 thru '09
'10 thru '17
Decade
(Age 0-2)
(Age 3 and Greater)
Total
Linear (Total)

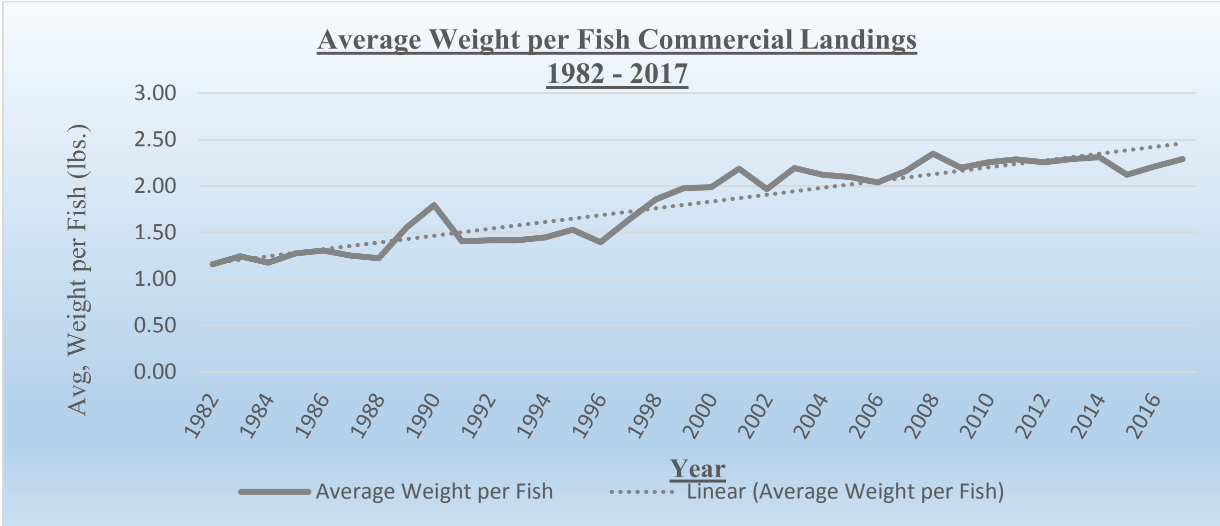

Number of Fish Landed by Decade
# of Fish Landed (000's)
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
317,197
173,084
131,349
77,359
'82 thru '89
'90 thru '99
'00 thru '09
'10 thru '17
Decade
Total
Linear (Total)

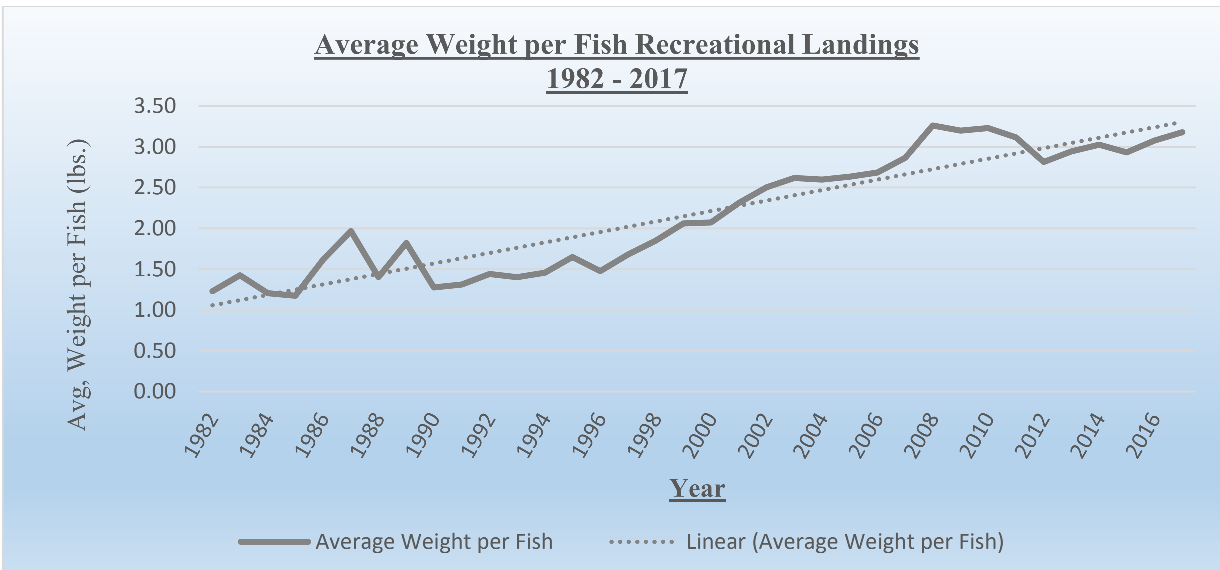
Keep in mind the data in the above landings graph for ’82 thru ’89 and ’10 thru ’17 represents 8 years in each of those decades compared to ten years in the 90’s and first decade of 2000 based on the availability of data in the 66th SAW. That makes the decrease in landings between the 80’s and today even more extreme and equates to approximately 300 million or 75% less fish being harvested in the current decade than the 80’s, an amazing reduction in catch which has not been able to stem the decline of the biomass, SSB and recruitment. Primary reason I believe managing the fishery simply through reduced catch levels and or shortened seasons is not going to change the trajectory of the fishery or address the problems causing its decline.

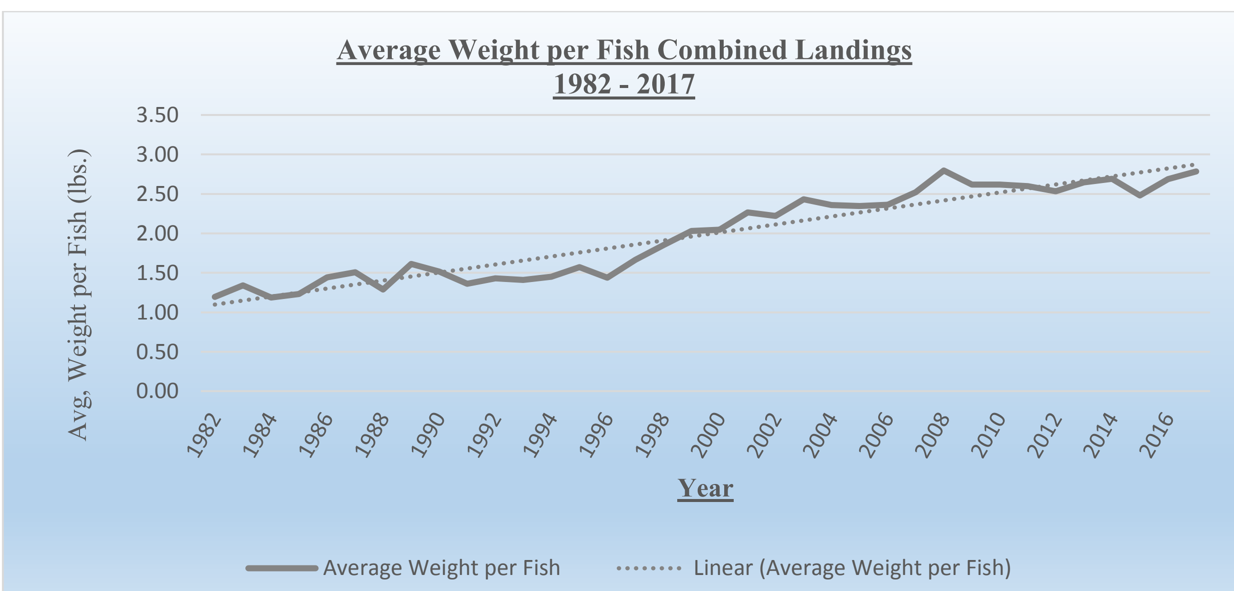


The above graph deals with the same information but to neutralize the disparity of months in each decade is presented in terms of average yearly fish landings. Trend and percentage reduction in landings over the last four decades would elicit the same conclusion as above.

SECTION 3 - AVERAGE WEIGHT OF LANDINGS TREND:

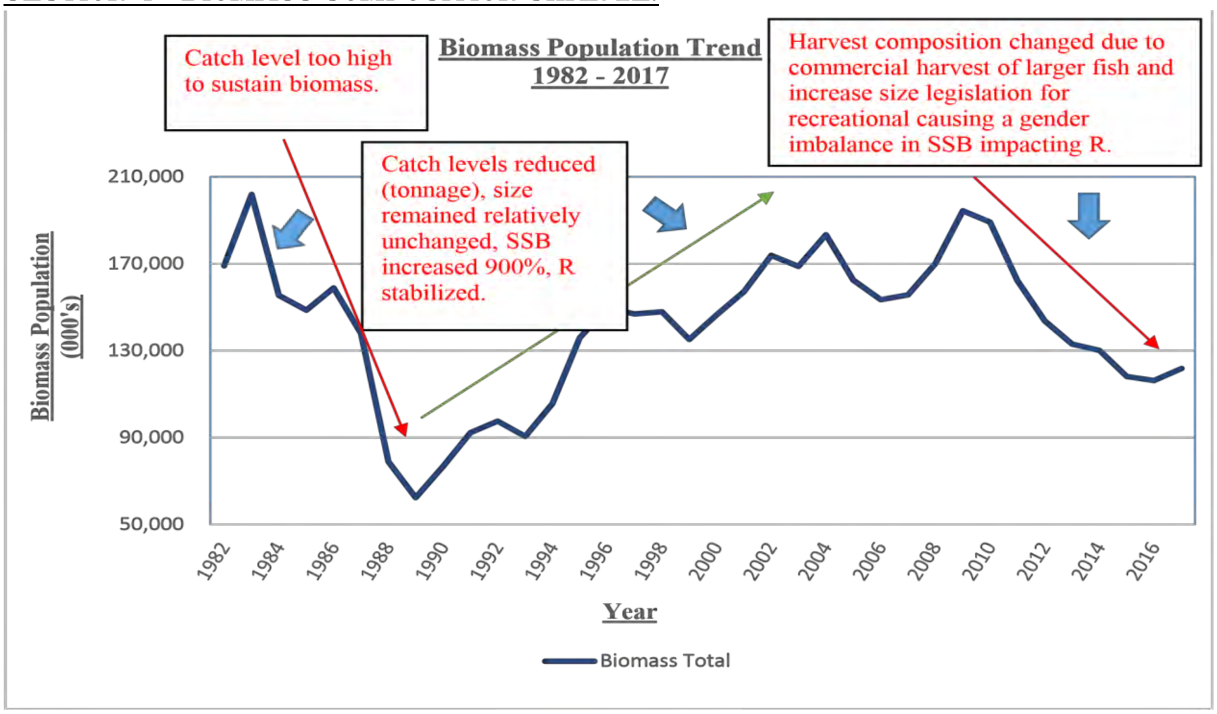






The above charts illustrate observations made in previous sections which is an on-going trend of harvesting larger sexually mature fish which can be extrapolated from the "Sex Ratio" excerpts on pages ***60 and 61 of the 66th SAW*** reflected in Section 6. A harvest consisting of a significantly higher proportion of older age class fish, disproportionately female with higher degrees of fecundity. The data is pretty unambiguous the average weight, and by default the average age, of fish being harvested today is greater and causing a composition change in the age and gender composition of SSB. Further data is provided in Section 4, "Biomass Composition Change" which illustrates that fact. The estimated impacts on recruitment statistics and SSB gender composition are further discussed in Section 5 and Section 6.

SECTION 4 - BIOMASS COMPOSITION CHANGE:



Decade	Average Annual Recruitment (000's)	Average Annual Landings (000's)	Ages 0-2 (000's)		Ages 3 and Greater (000's)		Total (000's)
'82 thru '89	61,803	39,650	133,581	96%	5,534	4%	139,115
'90 thru '99	53,018	17,308	110,339	94%	7,491	6%	117,830
'00 thru '09	59,243	13,135	132,256	79%	34,282	21%	166,538
'10 thru '17	38,113	9,670	95,647	69%	43,637	31%	139,284
Total			471,823		90,943		562,766

Points of Discussion / Observations:

- Overall biomass population from 80's to current remains virtually unchanged in spite of significant reduction in annual landings over the last four decades.
- Average annual R from 80's to current decade has declined by ~24 million fish annually or ~40%. Average annual landings for the same periods have decreased from ~40 million fish to less than 10 million, an ~75% decline.
- Modestly lower recruitment in the 90's and significantly lesser landings resulted in a ~22 million drop in the average biomass population. Modestly higher recruitment in the first decade of 2000 and slightly lower landings from the previous decade resulted in ~50 million more fish in the average biomass population. Results seem to be directionally opposite than what those statistics would suggest in each of those periods.
- Second decade of 2000 is equally confusing, average annual recruitment exceeds annual landings by ~28 million fish a year for 8 years (~225 million fish added to the biomass) yet the biomass decreased from the prior decade by ~27 million fish. I understand there's discard and natural mortality to consider but those issues would have to be significant to cause a decline in the population when in the prior decade it's resulted in a significant increase.
- Take note of the change in biomass composition percentages between classes. Age classes 0-2 represent 30% less of the overall biomass population today relative to the 80's even though those age classes represent a negligible percentage of today's landings, clearly a sign recruitment (age class 0 fish) has imploded relative to significantly lowers SSB levels in prior decades.

	Biomass Population				
Decade	Age 0 (000's)	Age 1-2 (000's)	Age 3-6 (000's)	Age 7+ (000's)	Total (000's)
82 thru '89	61,803	71,778	5,451	83	139,115
90 thru '99	53,018	57,322	7,476	15	117,830
00 thru '09	59,243	73,013	32,346	1,936	166,538
10 thru '17	38,113	57,534	38,860	4,776	139,284
Total	212,177	259,646	84,133	6,810	562,766

Points of Discussion / Observations:

- Same biomass information with further breakout of age classes.
- Clearly you can see the shift which occurred as a result of the shift in catch composition driving a biomass comprised of older age fish.

- Age 0 thru 2 classes are down ~30% in population today versus the 80's which will have prolonged impacts on the fishery as those age classes grow and continue to be harvested. Additionally, age classes 1 thru 7, per the excerpt in Section 6 under "Sex Ratio", have experienced a substantial decline in female composition meaning the recruitment capacity of SSB has been materially altered.
- These are the primary reasons SSB and recruitment are declining and further policy decisions which don't address changes in catch composition will undoubtedly secure the downward trend of this fishery.
- Harvesting younger, smaller, less sexually mature fish and allowing the larger sexually mature breeders to populate the stock resulted in a 900% increase to SSB between the years 1989 and 2003, we need to work our way back to the regulations in place at that time which promoted that level of growth.

- - - - - - - - - - - Biomass Population - - - - - - - - - - -

Decade	Age 0 (000's)	Age 1-2 (000's)	Age 3-6 (000's)	Age 7+ (000's)	Total (000's)
'82 thru '89	44.43%	51.60%	3.92%	0.06%	100.00%
'90 thru '99	45.00%	48.65%	6.34%	0.01%	100.00%
'00 thru '09	35.57%	43.84%	19.42%	1.16%	100.00%
'10 thru '17	27.36%	41.31%	27.90%	3.43%	100.00%

Same information as above but age classes are represented in percentages as opposed to absolute numbers of fish. Again the significant shift in biomass composition jumps off the page and when combined with the decline in female composition of older age classes it's difficult not to question the impact size increase regulations have had on the recruitment strength of SSB, the ultimate driver of a sustainable fishery. Further proof of those impacts are illustrated in Section 5 "Recruitment".

Table A89. 2018 SAW-66 assessment January 1 population number (000s) estimates at age; F2018_BASE_V2 model run.

	Age								
	0	1	2	3	4	5	6	7+	Total
1982	81,955	56,043	25,826	3,204	1,102	370	222	252	168,973
1983	102,427	61,401	28,486	7,718	1,098	408	149	178	201,865
1984	46,954	75,541	25,145	5,436	1,840	292	123	87	155,417
1985	78,263	34,603	29,969	4,176	1,091	420	77	52	148,650
1986	81,397	57,712	13,745	4,815	811	242	109	31	158,861
1987	53,988	59,653	21,238	1,979	862	167	58	33	137,978
1988	12,474	39,674	22,770	3,300	374	186	42	22	78,842
1989	36,963	9,098	13,316	2,417	427	58	35	11	62,325
1990	44,019	26,825	3,426	2,009	442	92	15	12	76,839
1991	47,704	31,915	10,988	791	591	146	34	9	92,177
1992	47,264	34,992	12,775	2,154	190	159	45	13	97,591
1993	43,928	33,221	10,976	1,811	434	45	44	16	90,474
1994	58,403	31,857	12,529	2,199	458	123	15	18	105,602
1995	78,348	42,085	12,141	2,528	577	137	41	10	135,867
1996	59,520	59,020	26,897	3,740	445	106	30	12	149,771
1997	52,374	44,901	38,815	9,819	880	109	31	13	146,942
1998	54,518	39,840	31,214	18,434	3,497	321	45	19	147,889
1999	44,100	41,416	27,383	14,465	6,378	1,247	132	27	135,148
2000	60,551	33,485	28,640	14,065	6,151	2,824	605	79	146,399
2001	64,979	45,942	22,959	13,869	5,376	2,444	1,263	311	157,143
2002	67,860	49,508	32,263	12,752	6,661	2,674	1,306	855	173,881
2003	50,131	51,834	35,494	18,696	6,424	3,439	1,466	1,221	168,704
2004	71,270	38,248	36,908	20,554	9,533	3,374	1,922	1,540	183,349
2005	40,634	54,397	27,325	21,199	10,250	4,882	1,841	1,947	162,474
2006	48,153	30,983	38,583	15,435	10,373	5,171	2,624	2,107	153,429
2007	52,646	36,801	22,377	23,528	8,511	5,865	3,069	2,870	155,667
2008	62,460	40,214	26,566	14,106	13,919	5,188	3,708	3,810	169,971
2009	73,747	47,752	29,853	18,451	8,993	7,920	3,029	4,616	194,362
2010	51,331	56,339	35,276	20,465	11,526	5,006	4,541	4,663	189,147
2011	31,296	39,164	41,305	23,746	12,433	6,189	2,786	5,429	162,348
2012	35,187	23,863	28,729	27,637	14,014	6,294	3,239	4,678	143,640
2013	36,719	26,860	17,651	19,665	16,878	7,311	3,370	4,560	133,014
2014	42,271	27,983	19,726	11,882	11,664	8,365	3,739	4,393	130,023
2015	29,833	32,228	20,540	13,304	7,146	5,982	4,436	4,623	118,093
2016	35,853	22,759	23,727	13,886	7,981	3,672	3,169	5,123	116,170
2017	42,415	27,346	16,770	16,119	8,398	4,096	1,941	4,742	121,825

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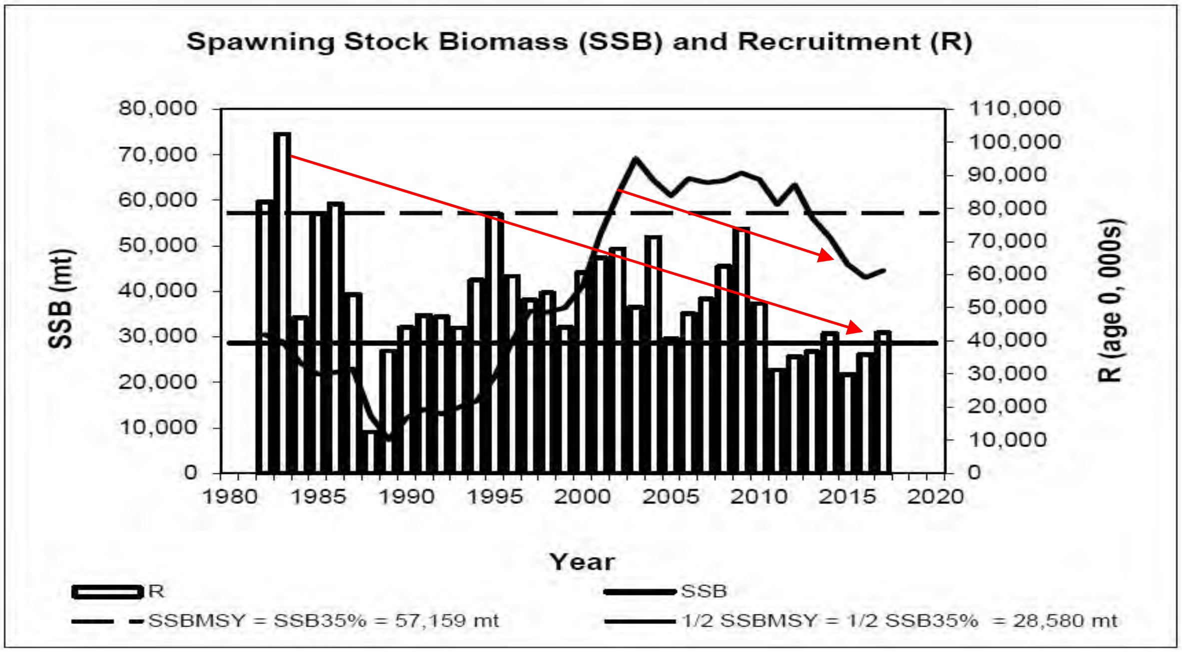
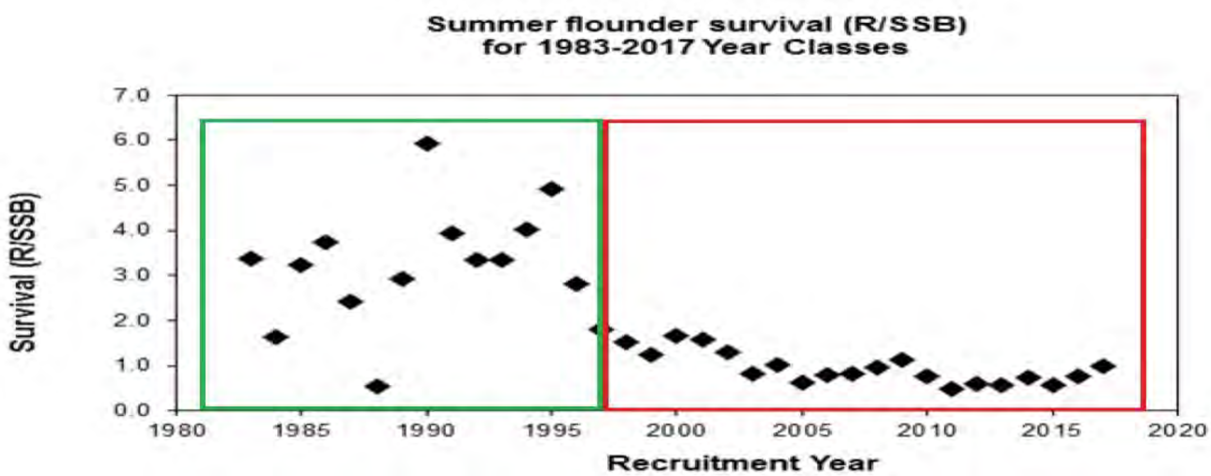
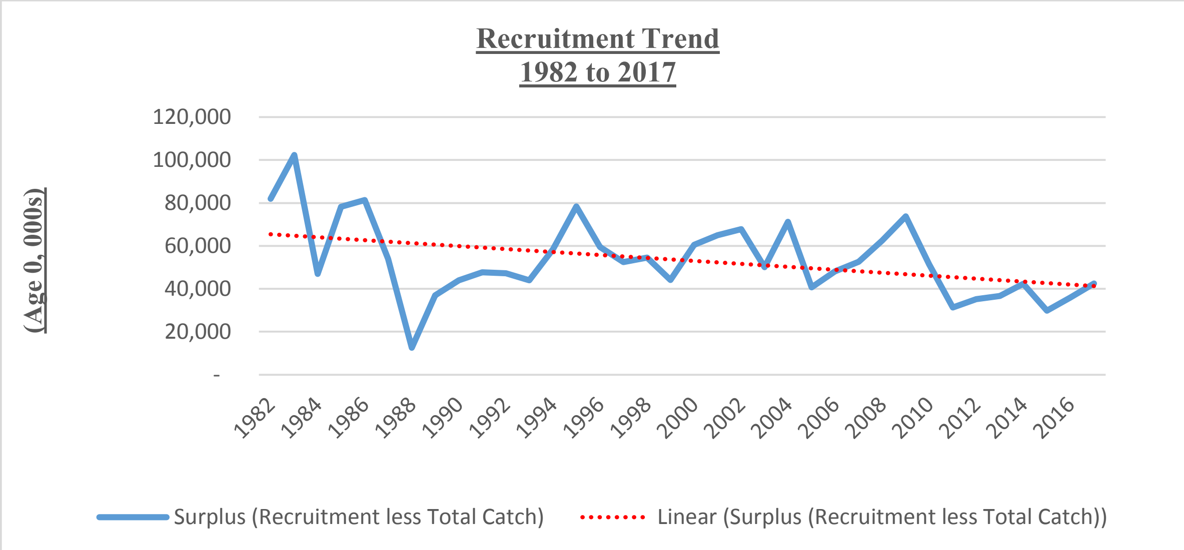
Age classes 7+ in the decades 80' and 90's averaged 45 thousand fish per above table. Statistics show on average 2,000 fish a year from these age groups being landed yet the biomass actually declined from 252,000 in 1982 to 27,000 in 1999. Not sure how that's possible. In the first two decades of 2000, the biomass population numbers increased from 79,000 to 4,742,000 in 2017 when larger fish are being harvested, recreational landings consist almost entirely of larger sexually mature fish due to regulations, recruitment levels continue to trend down, SSB continues to trend down, annual catch levels of age classes 7+ have increased 2800% for the current decade, commercial discard rates are quoted as being 80% with a higher proportion of older fish being discarded since 2002 as discussed in Section 9 yet these age classes have experienced explosive growth never before encountered. The data doesn't support the results.

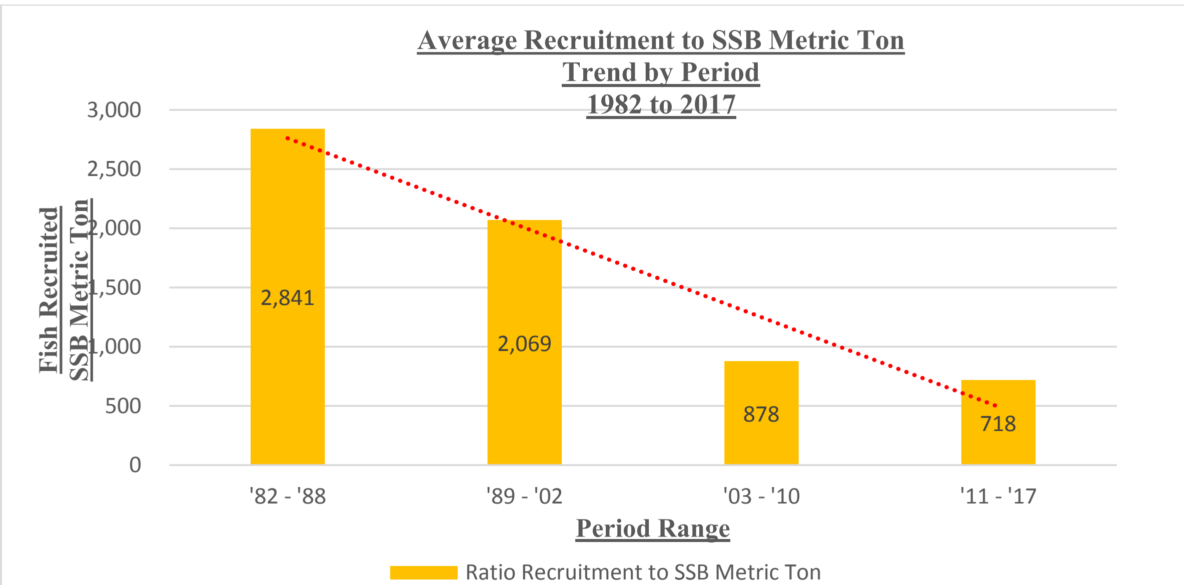


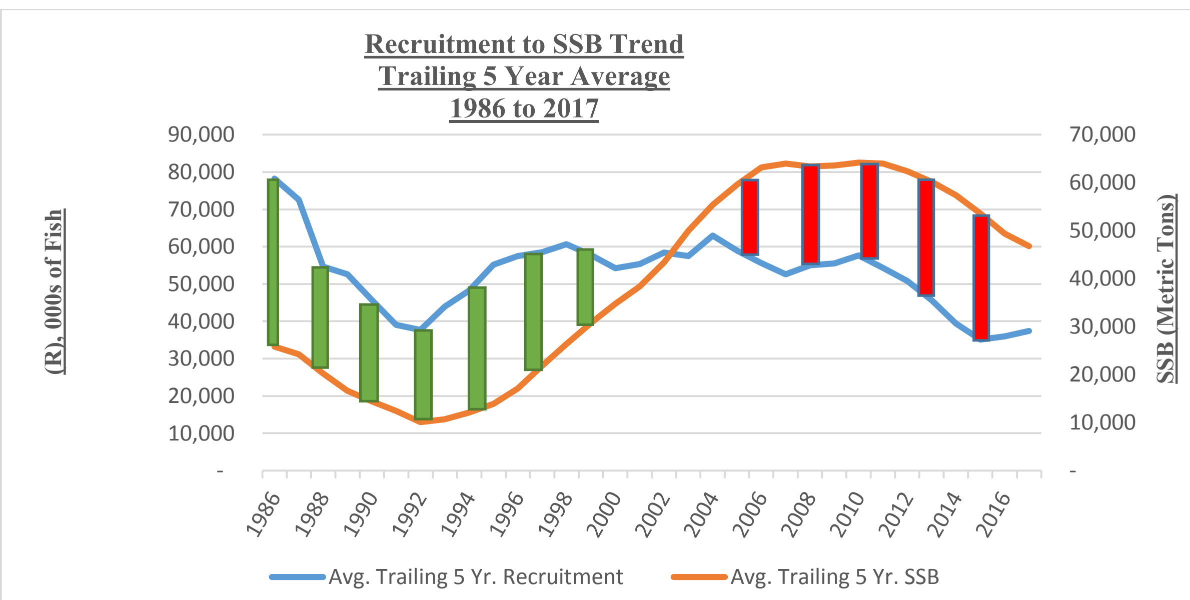
Source 66th SAW – Page 449



Source 66th SAW – Page 451


Recruitment Trend
1982 to 2017
(Age 0, 000s)
120,000
100,000
80,000
60,000
40,000
20,000
-
1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Surplus (Recruitment less Total Catch)
Linear (Surplus (Recruitment less Total Catch))


Average Recruitment to SSB Metric Ton
Trend by Period
1982 to 2017
Fish Recruited
SSB Metric Ton
3,000
2,500
2,000
1,500
1,000
500
0
2,841
2,069
878
718
'82 - '88
'89 - '02
'03 - '10
'11 - '17
Period Range
Ratio Recruitment to SSB Metric Ton


Recruitment to SSB Trend
Trailing 5 Year Average
1986 to 2017
(R), 000s of Fish
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
SSB (Metric Tons)
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Avg. Trailing 5 Yr. Recruitment
Avg. Trailing 5 Yr. SSB

There's no better illustration than the above charts of the impact recreational size increases and the shift in catch composition of commercial landings of older age fish have had on recruitment trends. Catch levels have been cut by 75% over the last four decades, how much further can they be cut without essentially shutting the fishery down to both commercial and recreational interests. Harvesting older age fish with a disproportionately higher percentage of females (outlined in Section 6) has materially weakened both the relative recruitment capacity of SSB and taken its toll on absolute recruitment numbers in general. The biomass population for age classes 0 - 2 has drastically declined from a recent high of 152 million in 2009 to 86 million in 2017, an ~44% decrease in nine years. Since age classes 0 to 2 make up a negligible percentage of today's harvest, the majority of this decline is due to significantly lower levels of recruitment. A decline the fishery will feel for years as these age classes mature and are harvested and their weakened numbers will have long term implications of further suppressing future recruitment levels. The fishery in essence is in a downward spiral. Lower recruitment equates to lower SSB. With the continued onslaught on older age fish being harvested, the female portion of SSB will continue to decline as well. Shrinking SSB combined with a continued substantial decline in the female composition will insure recruitment continues to plummet. It has no choice. The cycle will continue until no other options remain than draconian options no one really wishes to discuss. You might say the fishery is currently in a death spiral brought on by regulations insuring its eventual collapse.

Let me add context to the above commentary. Recruitment in 1983 was 104 million fish relative to an SSB of ~29,000 metric tons. In 2017, after 35-years of management to improve the fishery, recruitment was 42 million fish relative to an SSB of ~43.000 metric tons. A 49% increase in SSB between those years resulted in a 77% decline in annual recruitment over a period of time when landings declined by ~75%. On the surface that sounds virtually impossible.

At the same time, the biomass population in 1983 was 202 million fish, in 2017 it's decreased to 122 million fish or a 40% decline after 35 years. There's no other way to read the data, the fishery is not only trending in the wrong direction, it's in a downward spiral it won't recover from until measures are adopted to address the failing recruitment strength of the fishery which can only be accomplished by stopping the harvest of larger sexually mature fish and rebuilding SSB not only in total but more important the female portion of SSB.

SECTION 6 – SSB GENDER COMPOSITION CHANGE

Sex Ratio in NEFSC stratified mean indices

NEFSC stratified mean abundance indices (numbers per tow) were calculated for the winter (1992-2007), spring and fall (1976-2016) series. The spring and fall BIG 2009-2016 indices were calibrated to ALB equivalents using calibration factors at length. The male and female indices generally follow similar trends over time (Figures A77-A78).

As in the raw sample data, the sex ratio in the NEFSC stratified indices has changed over the last decade, with generally decreasing proportions of females at ages 2 and older. In the winter indices, the proportion of females showed no trend for age 1 and the mean proportion was 46%. For ages 2, 3, and 4, the proportion has decreased from about 0.6-0.8 in the early 1990s to about 0.4-0.5 by 2007. For ages 5 and 6, the proportion has decreased from about 0.8-1.0 in the early 1990s to about 0.6-0.7 by 2007. For ages 7 and older that compose the 'plus group,' the proportion has ranged from 0.8 to 1.0 over the series (Figure A77).

In the spring indices, the proportion of females has an increasing trend for age 1 from about 0.3 to 0.5, and the mean proportion was 40%. For ages 2, 3, and 4, the proportion has decreased from about 0.6-0.7 in the late 1970s to about 0.3-0.5 since 2000. For ages 5 and older, the indices during the 1980s-1990s are generally very small values (often < 0.001 fish per tow, and so round to 0 and appear 'missing' in the figures) and the proportion of females over the

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series is variable without a strong trend. Most recently the proportion of females at ages 5 and older has decreased to less than 0.6 (Figure A79).

In the fall survey, the proportion of females shows no trend for age 0 and the mean proportion was 0.3. For ages 1-3 the proportion has decreased from about 0.5-0.6 in the 1980s to 0.4-0.5 by 2012-2016. The proportions at ages 4 to 7 have strongly decreased from about 0.8 through the late 1990s to about 0.3-0.8 by 2012-2016; proportions at age 8 are highly variable (Figure A80).

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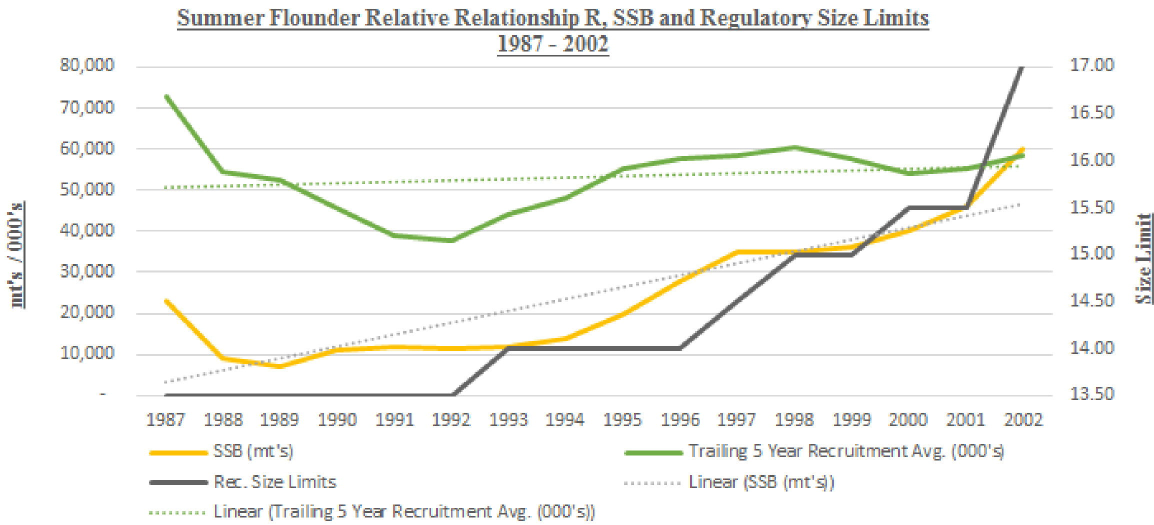
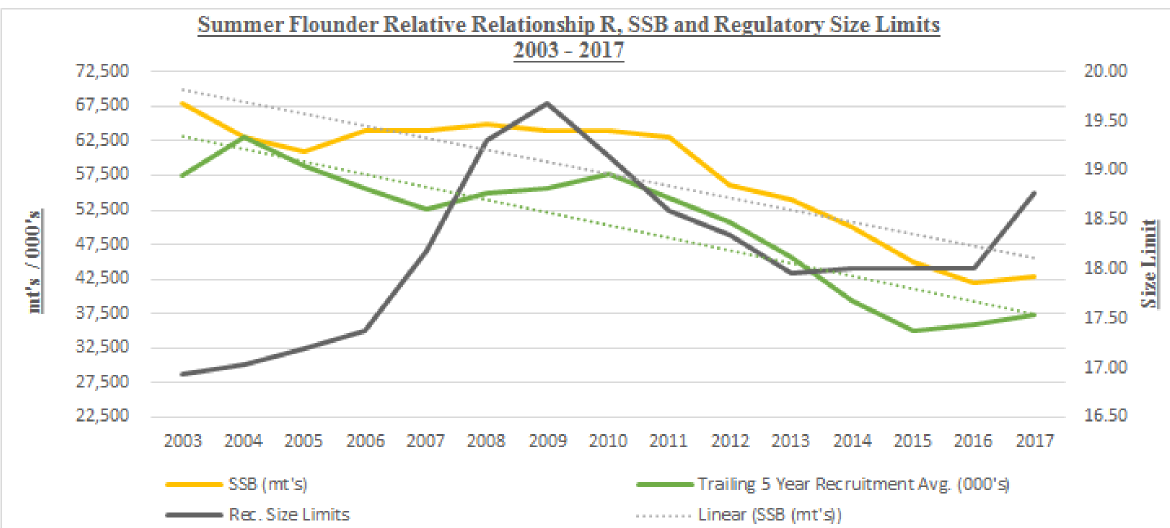
Points of Discussion / Observations:

- There's not much more I can add to the above narrative which isn't already mentioned in the above excerpts, both from the 66th SAW report.
- Gender composition, in particular the female portion, has been materially altered for the worse over the last two decades and as previously discussed in earlier sections is causing grave harm to annual recruitment levels.
- As mentioned earlier, this is a spiraling effect which I can't emphasize strongly enough won't reverse itself.
- I also wish to emphasize that shortened seasons or further reduced catch quotas, quotas which have already been slashed by ~75% over the last two decades without attaining their desired results, will also not remediate the damage done to SSB and R.

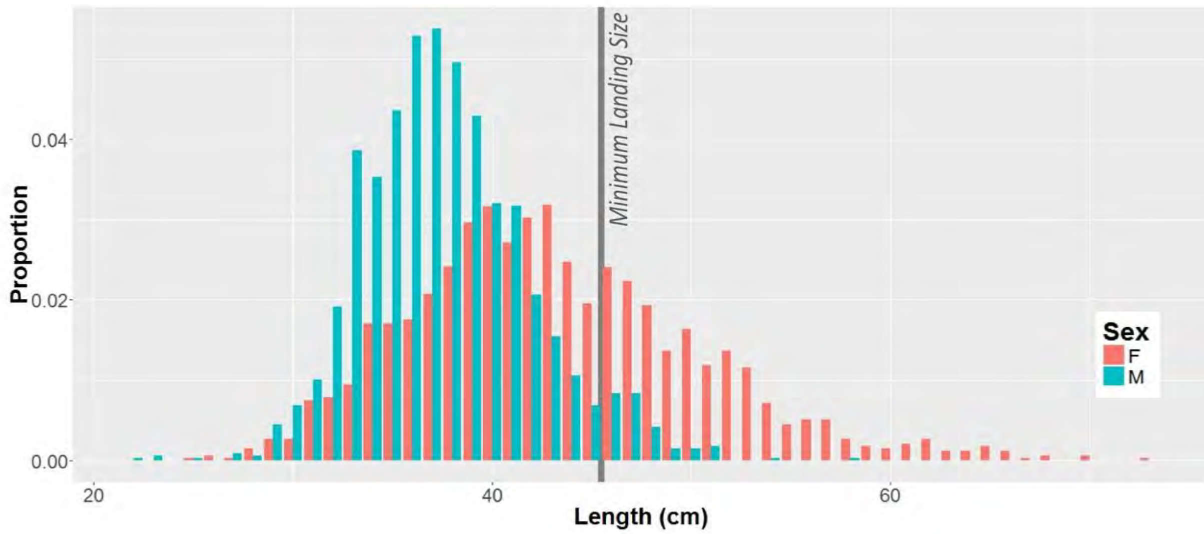
SECTION 7. - SIZE LIMIT INCREASES TO SSB / RECRUITMENT TRENDS:



Take note of the relationship and trends between 1989 and 2002 between recreational size limits and an improving SSB and R trend. SSB grew from approximately 7,000 metric tons in 1989 to approximately 68,000 metric tons in 2003 before significantly higher size limits were mandated. For a majority of that period, recreational limits ranged between 13.5 – 15,5 inches or 35 to 40 centimeters which as already touched upon resulted in the almost exclusive harvest recreationally and commercially of age class 1 to 2 yr. old fish.



When size limits continued to increase beyond that range, the above graph clearly illustrates the inverse effect those policy decisions had on SSB and R. Keep in mind these are "minimum" size limits, actual landings will obviously be larger and not unimaginable by a few inches or more.



Wish to reference the above chart again which first appeared in Section 1 “Catch”. At 13.5 to 14 inches or 34.5 to 35.5 centimeters, you can see from the above chart the significantly greater percentage of male fish. When you eclipse 15.75 inches or approximately 40 centimeters, the balance is approximately 50 / 50. At the 18 to 19-inch range which is where we’re at today, recreational harvest will consist almost exclusively of large female breeders. Translated 40% of the annual catch quota today being allocated to recreational anglers will be filled almost exclusively by sexually mature older aged spawning females being removed from SSB.

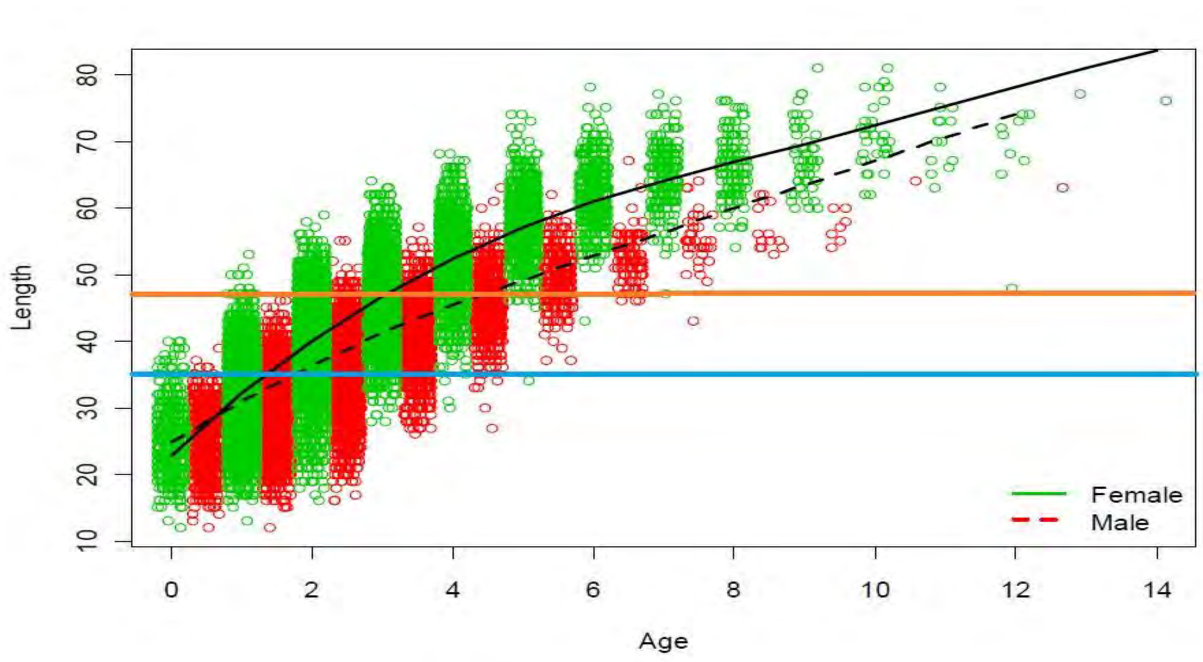


Figure A175. Model fit to sex stratification, i.e. female and male data. Female estimates: Linf = 83.6, k = 0.17, t0 = -1.9. Male estimates: Linf = 86.3, k = 0.10, t0 =-3.3

Weighted Average Recreational Size Limit 2019 – 18.73”

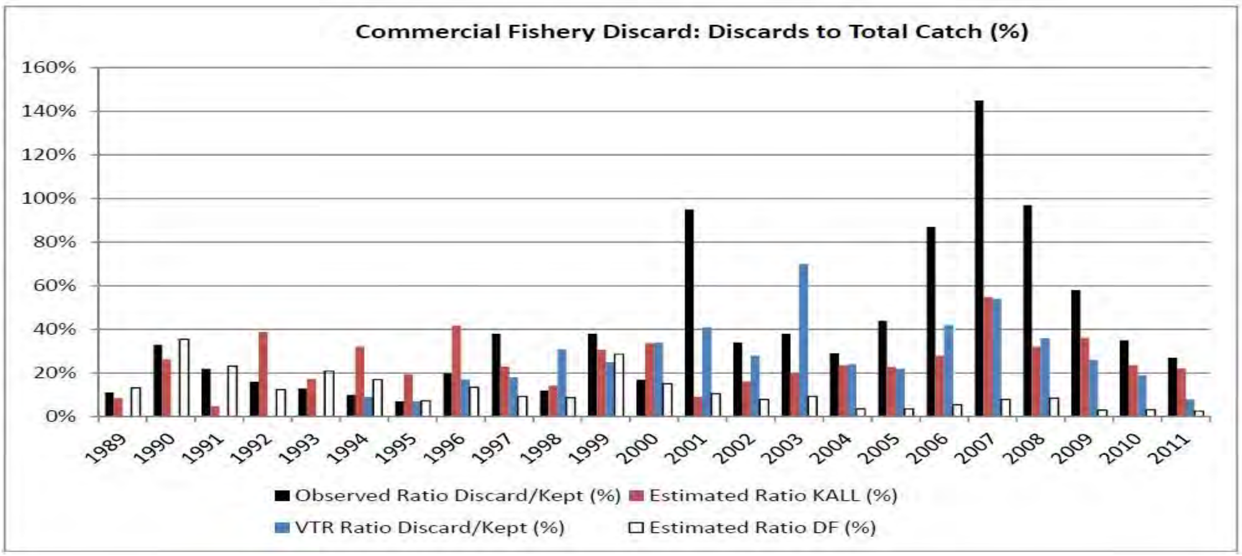
Commercial Size Limit – 14”

	0	1	2	3	4	5	6	7+			
% Available Commercial Harvest	15%	35%	57%	82%	95%	100%	100%	100%			
% Available Recreational Harvest	0%	4%	13%	34%	60%	87%	98%	100%			
Commercial # of fish accessible (000's)	6,362	9,571	9,559	13,218	7,978	4,096	1,941	4,742	51,105		**64.35%**
Recreational # of fish accessible (000's)	-	1,094	2,180	5,480	5,039	3,564	1,892	4,742	23,991		**30.21%**

The relationship of age, length and gender is further illustrated in the following chart ***Source 57th SAW, page 413.*** The chart illustrates the relationship among females and males relative to age and average lengths similar to ***Rutgers Sex and Length*** study. It clearly demonstrates the disproportionate ratio of a higher percentage of female summer flounder in older age groups. That relative relationship begins as early as age 1 and becomes more pronounced in older groups. A key statistic as to why the increase in catch composition this fishery has experienced over the years is a principle factor leading to the decline in this fishery.

The above chart shows the disproportionate share recreational anglers have harvest rights to relative to commercial concerns, the result of size increases over the years while commercial size limits remained unchanged at 14 inches. Commercial concerns can harvest ~65% of the biomass compared to ~30% for recreational. That equates to almost 30 million more fish commercial interests have harvest rights to which recreational don't. Recreational discards are subsidizing commercials catch quota yearly and a contributing factor of why commercial catch weights have increase substantially over the years as 14 inch to either 18 or 19-inch dependent on the state are being released and available for commercial operators to harvest. It's an issue which didn't exist when size limits were identical between both groups and along with the other undesirable consequences of increased recreational size limits needs to be addressed.

SECTION 9 – COMMERCIAL / RECREATIONAL DISCARD RATES:



Extremely revealing chart regarding commercial discards comparing percentages on observed trawls to percentages obtained from FVTR's. ***Source is 57th SAW page 302***. ***Could not find comparable information in 66th SAW Assessment Report. If available, would be interested in reviewing years 2012 – 2017.*** The disparity between observed versus unobserved discard rates (those reported on VTR's) is substantial and if representative would have significant implications quantifying annual commercial catch levels and associated discard mortality rates. Post 2000, observe the spike and degree of difference in percentage discards between observed trawls and percentages submitted on VTR's. In all but one year (2003), observed trawl discard percentages significantly exceed non-observed. In 2001, 2006, 2007 and 2008, percentages exceeded 80% of catch with a high of ~143% in 2007. 2009 was almost 60% itself. Compare these relationships to the same relationships pre-2000 when for whatever reason the spread between observed trawls and VTR's was considerably less.

Based on the "Commercial Fishery Discard Chart", it's evident from observed trawls there's a significantly greater percentage of discards as a percentage of catch occurring than what's reported on VTR's. Timing of the disparity coincides with the period of time recreational size limit increases accelerated and the growth of the biomass from 900% growth of SSB experienced between 1989 to 2003 was coming to an end. Factor in these are percentages reported on observed trawls, one has to question if percentages on unobserved trawls are substantially higher.

Now factor in the following facts included in the 66th SAW.

Commercial Discard Estimates at age

Observer length frequency samples were converted to sample numbers at age and sample weight at age frequencies by application of NEFSC survey length-weight relationships and observer, commercial fishery, and survey age-length keys. Sample weight proportions at age were next applied to the raised fishery discard estimates to derive fishery total discard weight at age. Fishery discard weights at age were then divided by fishery observed mean weights at age to derive fishery discard numbers at age. Classification to age for 1989-1993 was done by semiannual periods using observer age-length keys, except for 1989, when first period lengths were aged using combined commercial landings (quarters 1 and 2) and NEFSC spring survey age-length keys. Since 1994, only NEFSC survey age-length keys were used, since observer age-length keys were not yet available and commercial landings age-length keys contained an insufficient number of small summer flounder (<40 cm = 16 inches) that account for much of the discards. For comparability with the manner in which length frequency sampling in the recreational fishery has been evaluated, sampling intensity is expressed in terms of metric tons (mt) of live discards per 100 fish lengths measured. The sampling has been stratified by gear type (fish trawl, scallop dredge, and gillnet/other) since 1994. Overall sampling intensity has improved since 1999, from 152 mt per 100 lengths to less than 20 mt per 100 lengths since 2004 (Table A9).

The reasons for discarding in the fish trawl, scallop dredge, and gillnet/pot/handline fisheries have been changing over time. During 1989 to 1995, the minimum size regulation was recorded as the reason for discarding summer flounder in over 90% of the observed trawl and scallop dredge tows. In 1999, the minimum size regulation was provided as the reason for discarding in 61% of the observed trawl tows, with quota or trip limits given as the discard

reason in 26% of those tows, and high-grading in 11%. In the scallop fishery in 1999, quota or trip limits was given as the discard reason in over 90% of the observed tows. During 2000-2005, minimum size regulations were identified as the discard reason in 40-45% of the observed trawl tows, quota or trip limits in 25-30% of those tows, and high grading in 3-8%. In the scallop fishery during 2000-2005, quota or trip limits was given as the discard reason for over 99% of the observed tows. During 2006-2017, minimum size regulations were identified as the discard reason in 15-20% of the observed trawl tows, quota or trip limits in 60-70%, and high grading in 5-10%. In the scallop fishery during 2006-2017, quota or trip limits was given as the discard reason for about 40% of the observed tows, with about 50% reported as "unknown." For the entire time series, quota or trip limits was given as the reason for discarding in over 90% of the gillnet/pot/handline hauls. As a result of the increasing impact of trip limits, fishery closures, and high grading as reasons for discarding, the age structure of the summer flounder discards has also changed over time, with a higher proportion of older fish being discarded since about 2002 (Table A10).

As recommended by SAW 16 (NEFSC 1993), a commercial fishery discard mortality rate of 80% was applied to develop the final estimate of discard mortality from live discard estimates. The SAW 47 and SAW 57 assessments (NEFSC 2008a, 2013) considered information from 2007 and 2009 Cornell University Cooperative Extension studies (Hasbrouck et al 2011, 2012). These studies conducted scientific trips on summer inshore and winter offshore multispecies commercial trawling vessels to determine discard mortality rates relative to tow duration, fish size, and the amount of time fish were on the deck of the vessel. The mean inshore mortality was 78.7%, while the mean offshore mortality was 80.4%; both estimates are very close to the estimated overall discard mortality of 80% used in the assessment. Another study (Yergey et al. 2012) conducted by Rutgers University using acoustic telemetry to evaluate both on-deck and latent discard mortality found total discard mortality in the trawl fishery to be 81.7%, again very close to the estimated overall discard mortality of 80% used in the assessment. The 80% discard mortality rate assumption is reflected in the estimates of commercial fishery discards at age and mean weights at age in Tables A10-A11.

Combine the elevated levels of discards as a percentage of overall catch compared to what's being reported on VTR's per the above graph with the fact there's an 80% discard mortality rate associated with commercial harvest consisting disproportionately of older age fish since 2002 and explain how commercial dead discard rates from 2010 to 2017 as illustrated on page 178 of the 66th SAW calculates out to an average annual percentage of 15%. For comparison sake, recreational calculates out at ~24%.

SECTION 10 – CONCLUSIONS / OBSERVATIONS:

Once again my interests in preparing this analysis is to focus fisheries management, the scientific community, technical staffs and whoever else is necessary on issues I believe are causing considerable harm to this fishery. If we're being asked to believe the data incorporated in the 66th SAW as representative of what's happening in the fishery, then it's inconceivable anyone can question the fishery is failing and a completely new approach managing it needs to be adopted.

- SSB has declined 37% from 2004 to 2017, ~68,000 metric tons to ~42,000
- Biomass population has shrunk from ~183 million population in 2004 to 121 million in 2017, an ~ 34% decline
- The last seven years' annual recruitment are at their lowest levels since 1988 when SSB was a paltry 9,000 metric tons. 2017 SSB is ~42,000 metric tons. These below average levels will impact the fishery over a prolonged period of time as they're harvested, putting future pressure on SSB in the absolute, continued pressure on gender composition and further suppressed recruitment levels. The fishery is in a self-fulfilling downward spiral at this stage
- Gender composition of SSB has been altered in favor of more males by anywhere from 20 to 40 percentage based on age classes

As mentioned, the fishery is in a freefall and won't recover without remedial measures implemented which address catch composition, rebuilding SSB and measures insuring protection of the spawn.

From what I understand, due to MSA or current reauthorizations of MSA, there's only two remedial options available to manage the fishery

- Reduce catch
- Shorten seasons

Both options will have little to no impact improving the fishery as both address only catch. If a 75% decline in catch levels over the last 35 years hasn't nursed the fishery back to health, why believe further more negligible cuts will. The only policy decisions which will reverse current trends have to address catch composition (size), rebuilding SSB in the absolute and the female portion in particular, protect the primary fall / winter spawn and get recruitment levels back to historical levels and growth. Anything less and the stock will continue its downward trajectory.

- Recreational size limits need to be brought back to levels commensurate with commercial size limits. If catch needs to be addressed, address it in terms of tonnage, not size limits.

- Until R shows signs of recovery, the fall winter offshore commercial fishery needs to be addressed. Not suggesting shutting it down, but the allocation of quotas need to be realigned to focus a higher percentage of the harvest occurring during non-spawn months and significantly less harvest during spawning months. To my knowledge, no one has written a paper or understands the impacts commercial netting has on the spawning dynamics of the stock, a biomass more highly concentrated and vulnerable today than ever before.
- 1989 – 2003 promoted an ~900% increase in SSB, why were regulations which promoted that level of growth changed and more important why wouldn't we work our way thoughtfully back to those same regulations.
- Discard rates on commercial harvest needs to be further explored. The data not only suggests it; it illustrates there's a significantly higher percentage occurring over reported levels on VTR's as reflected in the 57th SAW report. If more observed trawls need to occur, resources should be directed in that effort since the impact on catch, in particular the impact on catch of older age class fish, could be substantially greater than what's being incorporated into models.

I wish for this document to be included in the briefing materials for the upcoming September 9th MAMFC SSC meeting at Sonesta Harbor Court in Baltimore. A similar version was sent a few months back based on recommendations from Brandon Muffley and John Boreman to Mark Terceiro for his team's review and commentary. No feedback was ever received so I'm sending it to you in the hopes you'll insure the Commission Board Members overseeing Summer Flounder and Council Members with the authority to address these issues actually have an opportunity to review the document.

If my facts are wrong, if anyone disagrees with my findings or conclusions please provide opposing positions supported by data. In the absence, this fishery is failing and remedial measures need to be implemented immediately to address what is arguably one of the most vital fisheries to the Mid-Atlantic States. It won't improve without changes in management ideologies, it's a mathematical impossibility and fishery management's own data supports that statement.

If data in the SAW report is wrong, bad policy decisions are being made based on inaccurate data. If the data is representative to what's happening within the fishery, the fishery is in trouble, dire trouble. Significantly and historically lower recruitment statistics over the last seven years has all but guaranteed the weakened state of this fishery over the foreseeable future. Steepness in this fishery, which some conspiracy theorist insist is the case, is out the window or we wouldn't find ourselves in the situation we're in today. Keep in mind the above fact "The last seven years' annual recruitment are at their lowest levels since 1988 when SSB was a paltry 9,000 metric tons. 2017 SSB is ~42,000 metric tons." How can anyone rightly defend steepness with those facts.

Dustin and Kiley, I'd be happy to discuss the analysis with you, help out in any way you think would benefit the fishery, present my analysis at meetings if necessary or not be involved at all if that's the path you choose. What I do request is for both the Commission Board Members and Council Members to see this document so they have knowledge of it and can draw their own conclusions.

Exhibit 2

MEMO

Exhibit 2

To: Dustin Colson Leaning, Fishery Management Plan Coordinator ASMFC
Kiley Dancy Fishery Management Specialist MAFMC
Dr, Christopher Moore, Executive Director MAFMC
Dr. John Boreman, Chairman SSC, North Carolina State University
Brandon Muffley Fishery Management Specialist MAFMC

From: Thomas B. Smith

Date: September 5, 2019

Re: Status Summer Flounder Stock, Addendum to August 23, 2019 Memorandum

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The following analysis is based on data provided in the 66th SAW report. Issues addressed includes the disproportionate relationship between the biomass population and an ~75% reduction in catch levels (000's) over the last four decades, a more staggering change in the relationship between assumed egg production levels to R occurring in the mid-nineties and the illustration of the impacts the harvest of larger sexually mature fish due to regulatory changes has had on gender composition of SSB, egg production and significantly declining recruitment levels.

Table A89. 2018 SAW-66 assessment January 1 population number (000s) estimates at age; F2018_BASE_V2 model run.

	Age								
	0	1	2	3	4	5	6	7+	Total
1982	81,955	56,043	25,826	3,204	1,102	370	222	252	168,973
1983	102,427	61,401	28,486	7,718	1,098	408	149	178	201,865
1984	46,954	75,541	25,145	5,436	1,840	292	123	87	155,417
1985	78,263	34,603	29,969	4,176	1,091	420	77	52	148,650
1986	81,397	57,712	13,745	4,815	811	242	109	31	158,861
1987	53,988	59,653	21,238	1,979	862	167	58	33	137,978
1988	12,474	39,674	22,770	3,300	374	186	42	22	78,842
1989	36,963	9,098	13,316	2,417	427	58	35	11	62,325
1990	44,019	26,825	3,426	2,009	442	92	15	12	76,839
1991	47,704	31,915	10,988	791	591	146	34	9	92,177
1992	47,264	34,992	12,775	2,154	190	159	45	13	97,591
1993	43,928	33,221	10,976	1,811	434	45	44	16	90,474
1994	58,403	31,857	12,529	2,199	458	123	15	18	105,602
1995	78,348	42,085	12,141	2,528	577	137	41	10	135,867
1996	59,520	59,020	26,897	3,740	445	106	30	12	149,771
1997	52,374	44,901	38,815	9,819	880	109	31	13	146,942
1998	54,518	39,840	31,214	18,434	3,497	321	45	19	147,889
1999	44,100	41,416	27,383	14,465	6,378	1,247	132	27	135,148
2000	60,551	33,485	28,640	14,065	6,151	2,824	605	79	146,399
2001	64,979	45,942	22,959	13,869	5,376	2,444	1,263	311	157,143
2002	67,860	49,508	32,263	12,752	6,661	2,674	1,306	855	173,881
2003	50,131	51,834	35,494	18,696	6,424	3,439	1,466	1,221	168,704
2004	71,270	38,248	36,908	20,554	9,533	3,374	1,922	1,540	183,349
2005	40,634	54,397	27,325	21,199	10,250	4,882	1,841	1,947	162,474
2006	48,153	30,983	38,583	15,435	10,373	5,171	2,624	2,107	153,429
2007	52,646	36,801	22,377	23,528	8,511	5,865	3,069	2,870	155,667
2008	62,460	40,214	26,566	14,106	13,919	5,188	3,708	3,810	169,971
2009	73,747	47,752	29,853	18,451	8,993	7,920	3,029	4,616	194,362
2010	51,331	56,339	35,276	20,465	11,526	5,006	4,541	4,663	189,147
2011	31,296	39,164	41,305	23,746	12,433	6,189	2,786	5,429	162,348
2012	35,187	23,863	28,729	27,637	14,014	6,294	3,239	4,678	143,640
2013	36,719	26,860	17,651	19,665	16,878	7,311	3,370	4,560	133,014
2014	42,271	27,983	19,726	11,882	11,664	8,365	3,739	4,393	130,023
2015	29,833	32,228	20,540	13,304	7,146	5,982	4,436	4,623	118,093
2016	35,853	22,759	23,727	13,886	7,981	3,672	3,169	5,123	116,170
2017	42,415	27,346	16,770	16,119	8,398	4,096	1,941	4,742	121,825

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Decade	Average Annual Biomass Population (000's)	Average Annual Recruitment (000's)	Average Annual Landings (000's)	BIOMASS POPULATION Ages 0-2 (000's)		Ages 3 and Greater (000's)		Total (000's)
'82 thru '89	139,115	61,803	39,650	133,581	96%	5,534	4%	139,115
'90 thru '99	117,830	53,018	17,308	110,339	94%	7,491	6%	117,830
'00 thru '09	166,538	59,243	13,135	132,256	79%	34,282	21%	166,538
'10 thru '17	132,160	38,113	9,670	95,647	69%	43,637	31%	139,284
Total				471,823		90,943		562,766
Increase / (Decrease) over base decade '82 thru '89		(87,848)	(223,412)					
Increase / (Decrease) over base decade '82 thru '89		(25,595)	(265,147)					
Increase / (Decrease) over base decade '82 thru '89		(189,516)	(239,838)					
	Total	**(302,960)**	**(728,398)**					

The decade 1982 to 1989 as previously discussed was highlighted by a significant decrease in SSB from a high of ~31,000 metric tons in 1982 to a low of ~7,000 metric tons in 1989. Cause was elevated catch levels averaging ~115% of SSB over that time-frame. SSB in 1989 dropped to its lowest level on record over the last 39-years.

Catch was reduced by more than 50% the following year and substantially over the ensuing decade while remaining in a relatively tight range until significant cuts were once again imposed in 2015. Catch in the 80's and majority of the 90's, it's important to point out, was cut by tonnage as opposed to increases in size limits. Using the decade of 1982 to 1989 as our baseline, the above graph illustrates reductions in R and catch levels over the last three decades 1990 to 2017. The last decade, 2010 to 2017, includes only eight years so the reduction in R and catch are even more substantial if a full decade was presented and trends continued in the direction they've been which is inevitable.

The biomass population as illustrated in the above chart in 1989 was ~62 million fish. Reductions in R have already been factored into these numbers as "Age 0" class fish. In 2017, the biomass population increased to ~122 million, a ~60 million fish increase from 1989. Over the last 27 years, there's been

~728 million less fish harvested than the rate of harvest between 1982 and 1989 or on average ~26 million less fish per year. The questions someone should be asking is how does three quarters of a trillion less fish harvested over the last 27-year period translate to a reduction in R over that time frame of ~300 million new recruits and why hasn't the biomass population materially increased. If we're to believe catch, recruitment, mortality (both natural and instantaneous) are already fairly factored into the biomass population table above, an approximate 300 million fish per decade reduction in landings (before consideration of lower discard rates which should amount to ~60 million less discards) along with the substantial impact on improvement to R, the biomass as of 2017 should be anywhere from 300% to 600% higher than what's being reported. Significant sacrifices have been made by both commercial and recreational groups over the last three to four decades in terms of catch quotas and size and possession restrictions, only to have the biomass remain status quo, recruitment levels plummet and SSS being impaired by changes in gender composition. That's above relationships are about as inverse as they could be and not only requires an explanation, it requires the Commission and Councils immediate attention to be corrected. Fish are inexplicably disappearing from published biomass numbers and recruitment levels are being destroyed.

The following tables offer a possible explanation.

Egg Production, Maturity and Sex Ratio Assumptions:

	AGE							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7+**
% mature '82 thru '13	30%	88%	99%	100%	100%	100%	100%	100%
% mature '14 thru '17	29%	86%	99%	100%	100%	100%	100%	100%
Est'd annual egg production / female	100,000	200,000	400,000	750,000	1,000,000	1,250,000	1,500,000	2,000,000

The above table was built based on the following information from the 66th SAW regarding maturity rates by age group. Various publications reveal summer flounder egg production ranges from ~400,000 for younger sexually mature females to over 4,000,000 for older females. The numbers I've used in the above tables are randomly assigned in an ascending order to age groups which are conservative based on published statistics including data published by NOAA and ASMFC. Above table also assumes all females are spawning which may or may not be the case.

MATURITY

In keeping with the approach from the previous benchmark assessments (NEFSC 2008a, 2013), a sexes combined, three-year moving window ogive was compiled from the NEFSC 1982-2016 fall survey data for use in assessment models. The three-year moving window approach provides well-estimated proportions mature at age that transition smoothly over the course of the time series, while still reflecting any shorter term trends. The sexes combined, three-year moving window estimates are presented in Table A86 and Figure A83. The 1982-2016 mean maturities at age (unweighted, simple arithmetic average of annual values at age) are 29% at age 0, 86% at age 1, 99% at age 2, and 100% at ages 3 and older.; these averages are 1% lower at age 0, 2% lower at age 1, and the same at ages 2 and older, compared to the 2013 SAW 57 values used in the 2013 and subsequent assessments. The most recent 5 year (2012-2016) mean values are 26% at age 0, 75% at age 1, 97% at age 2, and 100% at ages 3 and older.; these averages are the same at age 0, 2% lower at age 1, and the same at ages 2 and older, compared to the 2013 SAW 57 (2008-2012) values used in the 2013 and subsequent assessments.

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Sex Ratio Table
Female Proportion by Age Group and Period

Period	Age 0	1	2	3	4	5	6	7+
'82 thru '17	33%							
'82 thru '99		55%	55%	90%	90%	80%	80%	90%
'00 thru '10		45%	45%	50%	50%	55%	55%	90%
'11 thru '17		30%	30%	45%	45%	55%	55%	70%

The above table was built based on the following information from the 66th SAW regarding sex ratios by age group.

SEX RATIO

Sex Ratio in NEFSC Survey Raw Sample Data

In the fall survey, the proportion of females shows no trend for age 0 and the mean proportion was 33%. For ages 1 and 2, the proportion has decreased from about 0.5-0.6 in the 1980s to 0.4-0.5 by the 2010s; the means for 2012-2016 were about 0.3. The proportions at ages 3 and 4 have strongly decreased from about 0.9 through the late 1990s to about 0.5 by the 2010s; the means for 2012-2016 were 0.4 and 0.5. For ages 5-8 and older the proportions have most recently decreased to about 0.7; the means for 2012-2016 were 0.7, 0.8, 0.7, and 0.9 (Figure A76).

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Sex Ratio in NEFSC stratified mean indices

In the fall survey, the proportion of females shows no trend for age 0 and the mean proportion was 0.3. For ages 1-3 the proportion has decreased from about 0.5-0.6 in the 1980s to 0.4-0.5 by 2012-2016. The proportions at ages 4 to 7 have strongly decreased from about 0.8 through the late 1990s to about 0.3-0.8 by 2012-2016; proportions at age 8 are highly variable (Figure A80).

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Note the shaded area in the "Sex Ratio Table" which illustrates significantly reduced female composition of all age groups creating a change to the composition of SSB the result of and causing the following:

- Significant increases to recreational size limits as a means of reducing catch quotas.
- Reduced commercial quotas leading to the harvest of larger fish with higher market values intended to mitigate the impacts those reduced quotas had on ex-vessel values.
- A sizeable gender imbalance in the composition of SSB favoring males has occurred over the last two decades. You can review it in the above table (shaded area age classes 1 thru 7+) and relative drop off in R over the last three decades reflected above. Remember the current decade we're in represents eight years. If extrapolated to a full decade, recruitment would be down by ~240 million new recruits, catch levels down by ~300 million fish relative to the period 1982 to

1989. 300 million less fish harvested and recruitment levels down by a quarter of a **BILLION** new recruits for the period of one decade.

- Discounting "Age 0" class fish which has a low 29% maturity rate, the above table illustrates a substantial decrease in the female composition of every age class comprising ~95% of SSB. Statistic is arrived at by dividing the population of ages 1 thru 7+ (~75 million fish for 2017) into the total population less age class 0 or ~80 million fish. Female composition of every age class has been weakened anywhere from 22% to 50%.
- A significant change took place in this fishery around 1996 before the onset of recreational size limit increases resulting in the following:
    - Material reduction in ratio of egg production to R.
    - Spike in the average weight (age class) of fish being landed which has continued and almost doubled over the last two decades.
    - An almost complete reversal in catch composition from age classes 2 and younger to 3 and older.
    - The above two bullets are the primary reason for the erosion in gender composition of SSB resulting in the materially weakened reproductive strength of SSB impacting bullet one
    - It's worth reviewing what changes took place in the mid-nineties regarding the offshore fall / winter fishery because either the assumptions in the models being used to quantify recruitment completely changed or a cataclysmic change took place involving the relationship or ratio of new recruits to estimated egg production pulling from various tables in the 66th SAW as reflected on page 7.

Projected Egg Production by Age / Year

	AGE								
	0	1	2	3	4	5	6	7+	Projected Egg Production
Year	(000's)	(000's)	(000's)	(000's)	(000's)	(000's)	(000's)	(000's)	(000's)
1982	811,354,500	5,424,962,400	5,624,902,800	2,162,700,000	991,800,000	370,000,000	266,400,000	453,600,000	16,105,719,700
1983	1,014,027,300	5,943,616,800	6,204,250,800	5,209,650,000	988,200,000	408,000,000	178,800,000	320,400,000	20,266,944,900
1984	464,844,600	7,312,368,800	5,476,581,000	3,669,300,000	1,656,000,000	292,000,000	147,600,000	156,600,000	19,175,294,400
1985	774,803,700	3,349,570,400	6,527,248,200	2,818,800,000	981,900,000	420,000,000	92,400,000	93,600,000	15,058,322,300
1986	805,830,300	5,586,521,600	2,993,661,000	3,250,125,000	729,900,000	242,000,000	130,800,000	55,800,000	13,794,637,900
1987	534,481,200	5,774,700,800	4,625,636,400	1,335,825,000	775,800,000	167,000,000	69,600,000	59,400,000	13,342,443,400
1988	123,492,600	3,840,443,200	4,959,306,000	2,227,500,000	336,600,000	186,000,000	50,400,000	39,600,000	11,763,341,800
1989	365,933,700	880,686,400	2,900,224,800	1,631,475,000	384,300,000	58,000,000	42,000,000	19,800,000	6,282,419,900
1990	435,788,100	2,596,660,000	746,182,800	1,356,075,000	397,800,000	92,000,000	18,000,000	21,600,000	5,664,105,900
1991	472,269,600	3,089,372,000	2,393,186,400	533,925,000	531,900,000	146,000,000	40,800,000	16,200,000	7,223,653,000
1992	467,913,600	3,387,225,600	2,782,395,000	1,453,950,000	171,000,000	159,000,000	54,000,000	23,400,000	8,498,884,200
1993	434,887,200	3,215,792,800	2,390,572,800	1,222,425,000	390,600,000	45,000,000	52,800,000	28,800,000	7,780,877,800
1994	578,189,700	3,083,757,600	2,728,816,200	1,484,325,000	412,200,000	123,000,000	18,000,000	32,400,000	8,460,688,500
1995	775,645,200	4,073,828,000	2,644,309,800	1,706,400,000	519,300,000	137,000,000	49,200,000	18,000,000	9,923,683,000
1996	589,248,000	5,713,136,000	5,858,166,600	2,524,500,000	400,500,000	106,000,000	36,000,000	21,600,000	15,249,150,600
1997	518,502,600	4,346,416,800	8,453,907,000	6,627,825,000	792,000,000	109,000,000	37,200,000	23,400,000	20,908,251,400
1998	539,728,200	3,856,512,000	6,798,409,200	12,442,950,000	3,147,300,000	321,000,000	54,000,000	34,200,000	27,194,099,400
1999	436,590,000	4,009,068,800	5,964,017,400	9,763,875,000	5,740,200,000	1,247,000,000	158,400,000	48,600,000	27,367,751,200
2000	599,454,900	2,652,012,000	5,103,648,000	5,274,375,000	3,075,500,000	1,941,500,000	499,125,000	142,200,000	19,287,814,900
2001	643,292,100	3,638,606,400	4,091,293,800	5,200,875,000	2,688,000,000	1,680,250,000	1,041,975,000	559,800,000	19,544,092,300
2002	671,814,000	3,921,033,600	5,749,266,600	4,782,000,000	3,330,500,000	1,838,375,000	1,077,450,000	1,539,000,000	22,909,439,200
2003	496,296,900	4,105,252,800	6,325,030,800	7,011,000,000	3,212,000,000	2,364,312,500	1,209,450,000	2,197,800,000	26,921,143,000
2004	705,573,000	3,029,241,600	6,577,005,600	7,707,750,000	4,766,500,000	2,319,625,000	1,585,650,000	2,772,000,000	29,463,345,200
2005	402,276,600	4,308,242,400	4,869,315,000	7,949,625,000	5,125,000,000	3,356,375,000	1,518,825,000	3,504,600,000	31,034,259,000
2006	476,714,700	2,453,853,600	6,875,490,600	5,788,125,000	5,186,500,000	3,555,062,500	2,164,800,000	3,792,600,000	30,293,146,400
2007	521,195,400	2,914,639,200	3,987,581,400	8,823,000,000	4,255,500,000	4,032,187,500	2,531,925,000	5,166,000,000	32,232,028,500
2008	618,354,000	3,184,948,800	4,734,061,200	5,289,750,000	6,959,500,000	3,566,750,000	3,059,100,000	6,858,000,000	34,270,464,000
2009	730,095,300	3,781,958,400	5,319,804,600	6,919,125,000	4,496,500,000	5,445,000,000	2,498,925,000	8,308,800,000	37,500,208,300
2010	508,176,900	4,462,048,800	6,286,183,200	7,674,375,000	5,763,000,000	3,441,625,000	3,746,325,000	8,393,400,000	40,275,133,900
2011	309,830,400	2,067,859,200	4,907,034,000	8,014,275,000	5,594,850,000	4,254,937,500	2,298,450,000	7,600,600,000	35,047,836,100
2012	348,351,300	1,259,966,400	3,413,005,200	9,327,487,500	6,306,300,000	4,327,125,000	2,672,175,000	6,549,200,000	34,203,610,400
2013	363,518,100	1,418,208,000	2,096,938,800	6,636,937,500	7,595,100,000	5,026,312,500	2,780,250,000	6,384,000,000	32,301,264,900
2014	418,482,900	1,477,660,800	2,343,448,800	4,010,175,000	5,248,800,000	5,750,937,500	3,084,675,000	6,150,200,000	28,484,380,000
2015	295,346,700	1,701,638,400	2,440,152,000	4,490,100,000	3,215,700,000	4,114,687,500	3,659,700,000	6,472,200,000	26,389,524,600
2016	354,944,700	1,201,675,200	2,818,767,600	4,686,525,000	3,591,450,000	2,524,500,000	2,614,425,000	7,172,200,000	24,964,487,500
2017	419,908,500	1,443,868,800	1,992,276,000	5,440,162,500	3,779,100,000	2,816,000,000	1,601,325,000	6,638,800,000	24,131,440,800

Ratio Estimated Egg Production to R 1982 to 2017

Year	Projected Egg Production (000's)	Recruitment (000's)	R to Projected Egg Production Ratio	89 - '95 Average Ratio .00066%	Increased R at .00066% Ratio
1982	16,105,719,700	81,955	**0.00051%**	n/a	n/a
1983	20,266,944,900	102,427	**0.00051%**	n/a	n/a
1984	19,175,294,400	46,954	**0.00024%**	n/a	n/a
1985	15,058,322,300	78,263	**0.00052%**	n/a	n/a
1986	13,794,637,900	81,397	**0.00059%**	n/a	n/a
1987	13,342,443,400	53,988	**0.00040%**	n/a	n/a
1988	11,763,341,800	12,474	**0.00011%**	n/a	n/a
1989	6,282,419,900	36,963	**0.00059%**	n/a	n/a
1990	5,664,105,900	44,019	**0.00078%**	n/a	n/a
1991	7,223,653,000	47,704	**0.00066%**	n/a	n/a
1992	8,498,884,200	47,264	**0.00056%**	n/a	n/a
1993	7,780,877,800	43,928	**0.00056%**	n/a	n/a
1994	8,460,688,500	58,403	**0.00069%**	n/a	n/a
1995	9,923,683,000	78,348	**0.00079%**	n/a	n/a
1996	15,249,150,600	59,520	**0.00039%**	100,783	41,263
1997	20,908,251,400	52,374	**0.00025%**	138,185	85,811
1998	27,194,099,400	54,518	**0.00020%**	179,729	125,211
1999	27,367,751,200	44,100	**0.00016%**	180,876	136,776
2000	19,287,814,900	60,551	**0.00031%**	127,475	66,924
2001	19,544,092,300	64,979	**0.00033%**	129,169	64,190
2002	22,909,439,200	67,860	**0.00030%**	151,411	83,551
2003	26,921,143,000	50,131	**0.00019%**	177,925	127,794
2004	29,463,345,200	71,270	**0.00024%**	194,726	123,456
2005	31,034,259,000	40,634	**0.00013%**	205,109	164,475
2006	30,293,146,400	48,153	**0.00016%**	200,211	152,058
2007	32,232,028,500	52,646	**0.00016%**	213,025	160,379
2008	34,270,464,000	62,460	**0.00018%**	226,497	164,037
2009	37,500,208,300	73,747	**0.00020%**	247,843	174,096
2010	40,275,133,900	51,331	**0.00013%**	266,183	214,852
2011	35,047,836,100	31,296	**0.00009%**	231,635	200,339
2012	34,203,610,400	35,187	**0.00010%**	226,055	190,868
2013	32,301,264,900	36,719	**0.00011%**	213,483	176,764
2014	28,484,380,000	42,271	**0.00015%**	188,256	145,985
2015	26,389,524,600	29,833	**0.00011%**	174,411	144,578
2016	24,964,487,500	35,853	**0.00014%**	164,993	129,140
2017	24,131,440,800	42,415	**0.00018%**	159,487	117,072

The above table reflects the trend in the ratio of published recruitment statistics relative to estimated egg production from 1982 to 2017. Trend is alarming to put it mildly in terms of the drop off in egg production over the last decade and reduced ratio of new recruits relative to egg production between the years 1996 and 2017 (red shaded area). Projected egg production is in **TRILLIONS** and arrived at by taking biomass population by age group times percentage sexually mature fish times assumed percentage of females times an assumed number of eggs produced per female which as mentioned I believe to be ultra conservative. Recruitment numbers are in **MILLIONS**.

Main points of discussion:

- Recruitment numbers used in the biomass population equates to less than 1/1000th of a percent of estimated egg production. It was my understanding summer flounder have a high survival rate so this level of R compared to egg production is surprising and if correct should be cause for concern to fisheries management. It illustrates more than ever the necessity to protect the spawn.
- If survival percentages have in fact decreased this significantly and abruptly since 1995, we need to understand why since the decline of R is the primary reason the fishery is failing. Recreational fishing activity doesn't occur during the spawn or in the demographics of the spawn so any disruption being encountered is due to either commercial harvest or environmental issues contributing to the decline which I believe to be negligible based on the immediacy of the drop in the ratio between 1995 and 1996.
- Average R to egg production (.00066%) for the years 1989 to 1995 is being used as a baseline comparison to future years after catch levels were significantly reduced after 1988. That period ratio averaged .00066% new recruits to estimated eggs produced. From 1996 to 2017, there's not a singular year which approximates that ratio, the highest being 1996 at 00039%, lowest being 2011 at .00009% and 2013 and 2015 at .00011% with the last 10-years averaging .00014%, a 79% reduction to baseline.
- The last column reflects incremental R annually if the ratio remained the same as years 1989 to 1995 or .00066%. The increase in recruitment and biomass levels over the prior 10-years 2008 to 2017 would have been ~1.7 **BILLION** fish or approximately 13 times the 2017 reported biomass population of 122 million fish. Consider the benefits this would have had on the fishery, commercial and recreational catch quotas, SSB, future recruitment levels, season lengths and the health of the fishery overall. It's a staggering statistic.
- At the same time, take note of the trend in estimated egg production over the years. 1989 to 2004, the period SSB and the biomass experienced their most significant growth, egg production increased almost every year. Over the past decade overall has decreased in excess of 40% due to gender composition changes within SSB commensurate with increased harvest levels of older age fish causing the continued and substantial erosion of R.
- Reference the data and observations provided in my earlier memorandum dated August 23, 2019 and consider the impacts each of the following are having:
    - What impact is the harvest of larger fish both commercially and recreationally having on dead discard rates of younger age populations.
    - Harvest of a significant portion of the commercial quota during the fall / winter spawn from a biomass more highly concentrated today than ever before in recorded history.
    - Commercial dead discard rates are in models at 80% of total discards. Statistics on page 178 of the 66th SAW have commercial discard rates as a percentage of total commercial catch over the last eight years at 15.3% while those same rates on observed commercial trips per the 57th SAW reflect significantly higher numbers. Five years between 2001 and 2009 averaged ~100% of total catch, 2007 being the highest at ~143%. Considerably greater discard percentages than reported on VTR's and discard assumptions built into fishery models. Put the two together and it paints a lethal picture.
    - Fish being towed during the fall / winter fisheries in waters ranging from 120 to 600 feet have zero chance of survival considering the weight and duration of the tow, depths fished and a lengthy sortation process. It's not only conceivable it's probably there's a 100% dead discard rates associated with the commercial fishery this time of year.

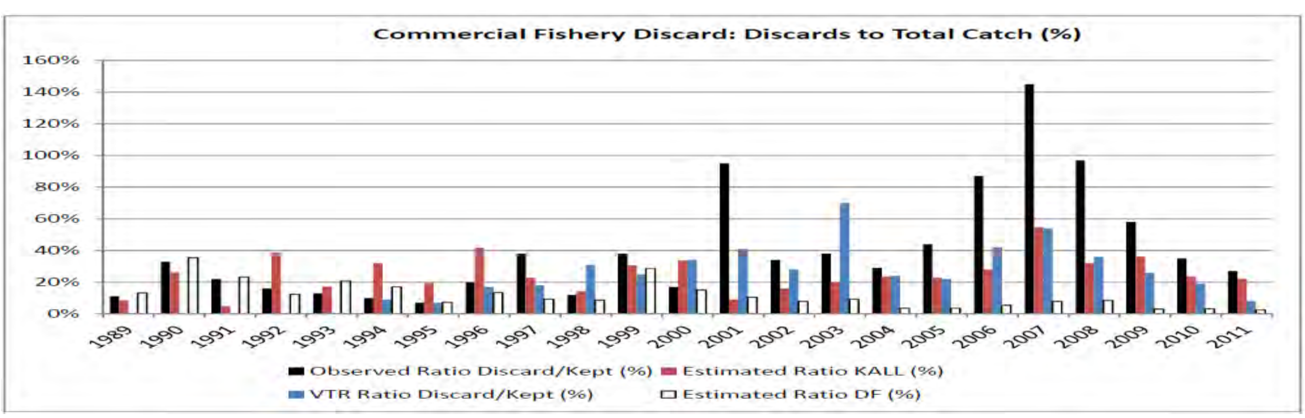
The above data collectively and below graphs reveal we're harvesting a significantly higher percentage of older age fish, a significantly higher percentage consisting of sexually mature females. Since a significant percentage of the commercial harvest takes place during the fall / winter months, primary spawn period of summer flounder, it's prudent to address that issue until more is known about the impacts on the efficacy of the spawn and discard rates of younger age classes while older age classes are being harvested. Bear in mind, as mentioned in this latest SAW report, the biomass is at its most concentrated level ever so factor that into the impacts commercial harvest might be having on the spawn during their offshore migration and throughout the winter. Found the following excerpt from the original FMP dated October 1987 on page 36 and if it holds true today it could be a significant factor leading to the demise in recruitment statistics and the reason why three-quarters of a trillion less fish harvested over the last 27 years has had little to no impact on increasing the overall size of the biomass.

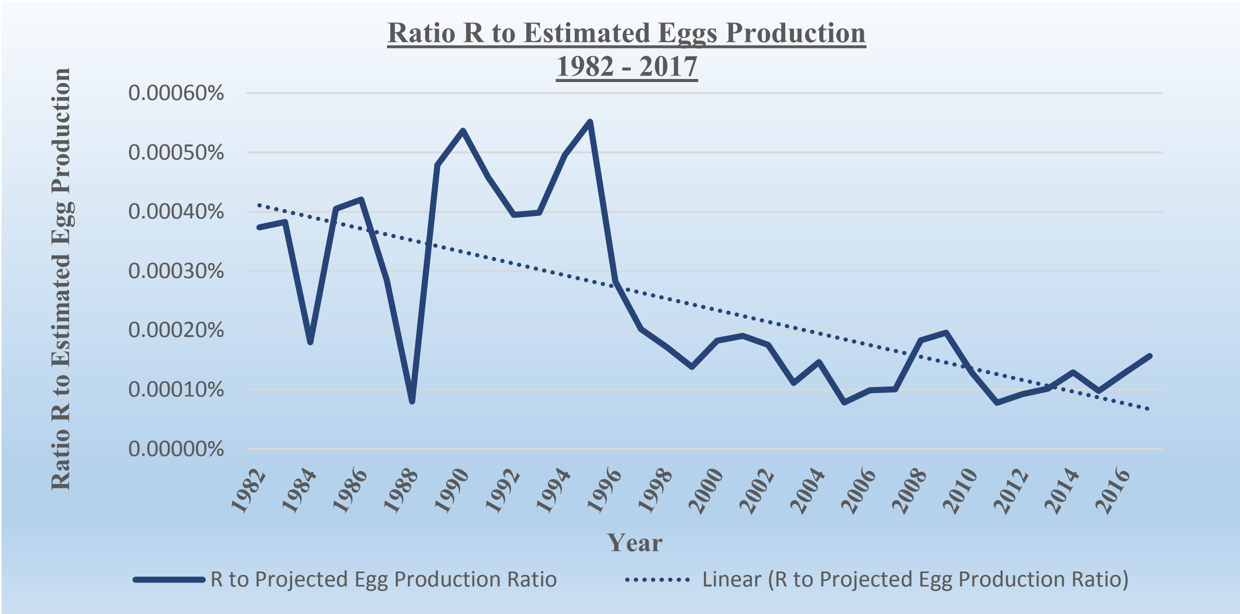
> Summer flounder support extensive commercial fisheries along the Atlantic Coast, principally from Massachusetts through North Carolina. Most commercial landings come from otter trawl vessels (Figure 16) while the second most important commercial gear is pound nets (section 7.1.1.1). Most of the fishing activity takes place in the EEZ during the winter (section 7.1.1.2). Summer flounder are part of an overall mixed bottom trawl fishery which generally also includes: winter flounder, yellowtail flounder, *Loligo*, scup, butterfish, and other species (section 7.1.1.8). According to 1985 weighout data, the average tow time for all otter trawl vessels that landed summer flounder was 1.9 hours.
>
> Generally, the sorting of otter trawl caught fish brought on deck is begun immediately after redeployment of the net. Often the species and market categories to be retained are placed on ice as rapidly as possible. Once the valuable catch is stored, the undersized and bycatch is generally shoveled overboard. Several hours may lapse before the discards are returned to the sea.

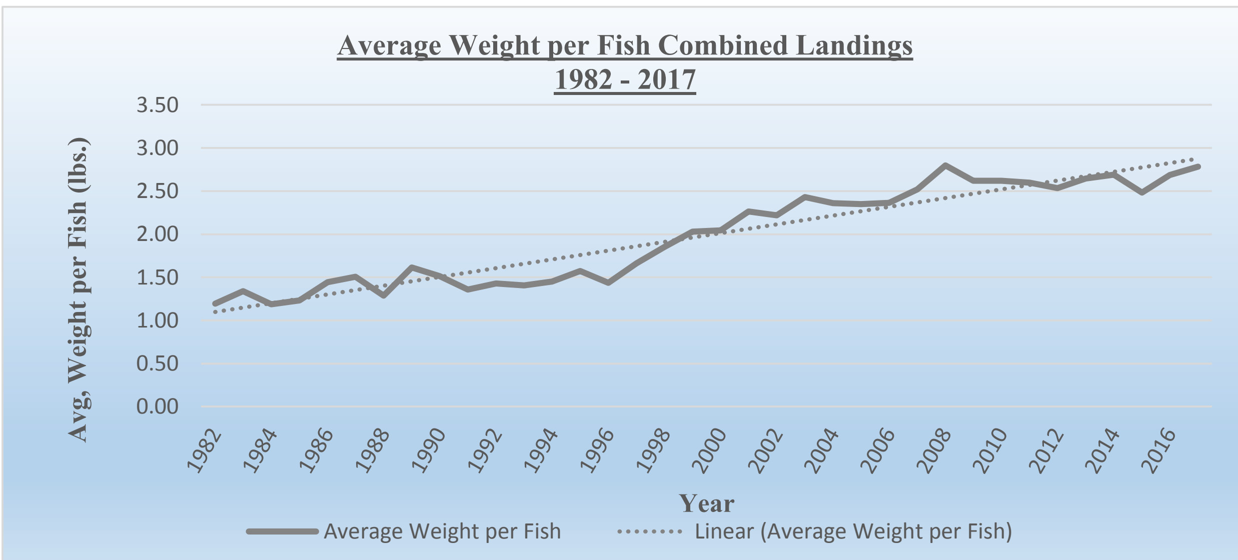
<u>Key Points:</u>

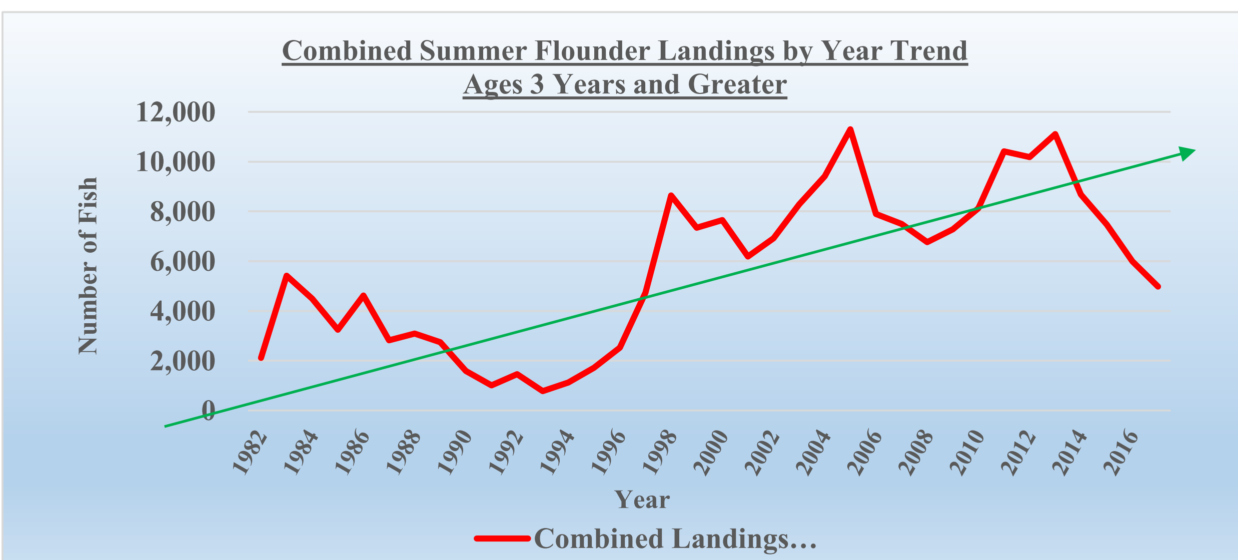
- Most of the commercial landings take place in the EEZ during the winter (summer flounder primary spawn)
- Average tow time was 1.9 hours.
- Generally sorting "of catch" begins immediately after redeployment of the net (how long does it take to empty the net and redeploy).
- Once the valuable catch is stored, the undersized and bycatch is generally shoveled overboard, several hours may lapse before the discards are returned to sea.

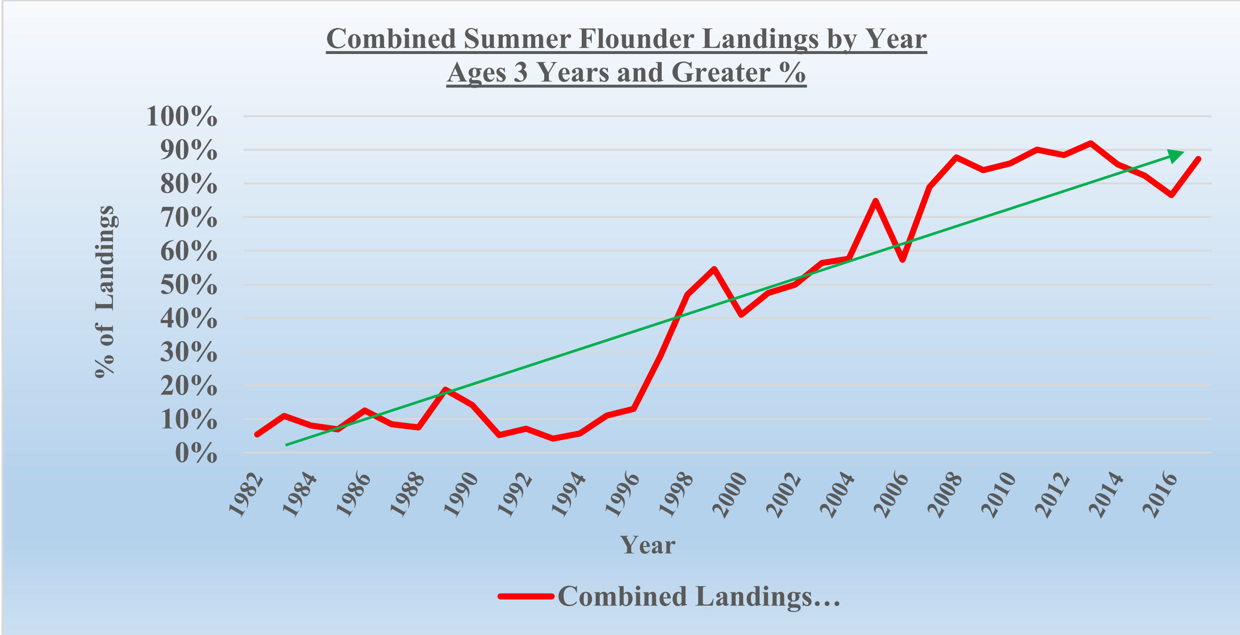
Any fish towed in a net for ~2 hours, brought up from depths ranging between 120 to 600 ft., retained on deck for several hours through the sortation process until "valued catch" is iced and stored will be dead when shoveled overboard. Dead discard rates as a percentage of catch have to be enormous in this process as evidenced in the below graph from the 57th SAW and dead discard as a percentage of total discards is arguably 100% as opposed to 80% used in models. No summer flounder or other species will survive any one of the above conditions individually much less all of them collectively.




Ratio R to Estimated Eggs Production
1982 - 2017
Ratio R to Estimated Egg Production
0.00060%
0.00050%
0.00040%
0.00030%
0.00020%
0.00010%
0.00000%
1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Year
R to Projected Egg Production Ratio
Linear (R to Projected Egg Production Ratio)


Average Weight per Fish Combined Landings
1982 - 2017
Avg, Weight per Fish (lbs.)
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Year
Average Weight per Fish
Linear (Average Weight per Fish)


Combined Summer Flounder Landings by Year Trend
Ages 3 Years and Greater
Number of Fish
12,000
10,000
8,000
6,000
4,000
2,000
0
1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Year
Combined Landings…



These trends and what's causing them will continue until measures are taken by the Commission and Council to reverse them. The path the fishery is currently on which is one of continued decline will continue without management intervention. Another few years of the existing regulations could conceivably cause irreparable harm to the fishery if it hasn't already. Every additional year of poor recruitment will cause multiple years of reduced harvest, increased gender imbalance in SSB and continued pressure on future recruitment classes. These issues need to be addressed before 2020 regulations are established and there a tremendous amount of people and businesses depending on your help to determine the best approach to put this information in front of the Commission and Council before the October joint meeting. Again if you disagree with my interpretations and findings, I'd appreciate you sharing those disagreements or concerns. If the absence of any, an entirely new philosophy needs to be introduced managing this stock well beyond catch reductions in the form of increased size limits and shortened season which as stated previously will have zero impact on the problems facing or the trajectory of the fishery. If three quarters of a BILLION less fish harvested over the last 27-years hasn't corrected the fishery or improved recruitment, why would we believe future catch cuts will address the problems hurting the fishery.

I look forward to hearing back from both of you with any questions, comments, observations or concerns as well as an appropriate path forward for the Commission and Council to receive the analysis provided. I appreciate your efforts in advance.

John you sent me an email which stated the following "In my capacity as Chair of the SSC, I limit public comments at the meeting to addressing only potential sources of scientific uncertainty associated with the data and methods used to derive the ABC." With that understanding, there's five questions I believe should be asked at the upcoming September 9th meeting at Royal Sonesta Harbor Court. They are as follows:

- Why did the ratio of recruits to egg production drop off so suddenly and precipitously between the years 1995 and 1996 and continue a sustained downward spiral through 2017? The impact on recruitment is substantial.
- Age classes 7+ populations in the biomass for the decades 80' and 90's averaged 45,000 fish, 15,000 in the 90's. Overall percentage of catch was negligible and insignificant yet the biomass

actually declined from 252,000 in 1982 to 27,000 in 1999. In the first two decades of 2000, the biomass population numbers increased from 27,000 in 1999 to 4,742,000 in 2017 when larger fish were being harvested, recreational landings consist entirely of larger sexually mature fish due to regulations, average commercial landings weights have doubled, recruitment levels and SSB continue to spiral downward, annual catch levels of age classes 7+ have increased ~2200% for the current decade compared to the 80's and 90's, commercial discard rates are quoted as being 80% with a higher proportion of older fish being discarded since 2002 discussed in Section 9 of my previous draft, yet these age classes are being reported as experiencing explosive growth never before experienced. The results are the polar opposite of what one would expect, what explanation and evidence is there supporting that trend and explosion in these age classes.

- Over the last 27-years based on the information reflected on pages 1 and 2 above, why would landings be down by three-quarters of a trillion fish for the years 1990 through 2017 compared to the average harvest for the baseline period 1982 through 1989 causing a corresponding reduction in recruitment of ~303 million fish over the same period. Changes in gender composition of SSB is part of the explanation but again the data is directionally opposite of what one would expect. What plausible explanation could explain that kind of inverse relationship and trend?
- Considering the above bullet, how is it possible over the same 27-year period, the biomass population increased by only 60 million fish when the relationship between recruitment and landings statistics would suggest a much greater increase in the biomass.
- Why are commercial discard rates as a percentage of catch in the SAW report being reported at ~15% when rates on observed trawls are showing percentages consistently higher?

John / Brandon, I'd ask that this addendum please be included in the "Supplemental Materials" public commentary section for the upcoming SSC meeting next week. Chris, Dustin and Kiley, I'm sending you this as an addendum to my initial draft sent 8/25/19. Curious if you've had a chance to review the analysis and have comments. My opinion is clearly stated in both documents and I believe it's critical this information as mentioned be elevated to the Commission Board and Council Members responsible for the management of the summer flounder fishery well in advance of the October 8th through 10th joint meeting in Durham NC.

The fishery is in a downward spiral it can't reverse without management intervention and changes in policy decisions. The data couldn't be more clear in that respect. Recruitment is the key to every fishery and in the case of summer flounder it's being destroyed. Until measures are taken to improve the reproductive strength of SSB and protect the spawn, the fishery will continue its decline.

I'd appreciate your thoughts as well as the plan to put this information in front of the Commission and Council. This can't be a footnote a day before the meeting in briefing materials, Members need to see the data as far in advance as possible and be prepared to discuss it at next week's SSC meeting and more importantly at the Joint Commission / Council meeting in October. I'll do anything to facilitate that happening but I need your help and support determining the best approach for that to happen.

None of what I've taken the time to do is about culpability, how we got here doesn't matter only in the sense of learning from mistakes we might have made along the way. It's about correcting and growing this extremely important fishery for the benefits of all the constituents' dependent on it. I think we all share the same sentiment and can hopefully work together to make that a reality.

Summer Flounder Fishery Information Document

August 2019

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 2018. Data sources 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 on summer flounder management, including previous Fishery Information Documents, please visit http://www.mafmc.org/sf-s-bsb.

Key Facts:

- The 2018 benchmark stock assessment found that in 2017, summer flounder was not overfished and overfishing was not occurring (in contrast to the last assessment which found overfishing was occurring).
- Incorporation of a revised time series of recreational data from MRIP contributed to an increase in estimated stock biomass compared to the previous assessment.
- Commercial and recreational landings in 2018 were among the lowest in the time series.
- Commercial price per pound has been increasing since 2011 and remained well above average in 2018 at $4.11 per pound.
- MRIP revisions resulted in a higher proportion of estimated recreational harvest from the private and shore modes and a decrease in estimated harvest from the for-hire fishery.

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.[1]

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. 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 fish (likely a male) estimated to be age 20. Also sampled were two age 17 fish, at 52 cm (likely a male) and at 72 cm (likely a female). Two large (likely female) fish at 80 and 82 cm 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.[2]

Status of the Stock

The most recent benchmark summer flounder stock assessment was completed and reviewed during the 66th Stock Assessment Workshop and Stock Assessment Review Committee (SAW/SARC 66) in November 2018.[3] This assessment uses a statistical catch at age model (the age-structured assessment program, or "ASAP" model). Stock assessment and peer review reports are available online at the Northeast Fisheries Science Center (NEFSC) website: http://www.nefsc.noaa.gov/saw/reports.html.

The assessment incorporated the revised time series of recreational catch from MRIP, which is 30% higher on average compared to the previous summer flounder estimates for 1981-2017. The MRIP estimate revisions account for changes in both the angler intercept survey and recreational effort survey methodologies. While fishing mortality rates were not strongly affected by incorporating these revisions, increased recreational catch resulted in increased estimates of stock size compared to past assessments.

The biological reference points for summer flounder as revised through the recent benchmark assessment are described in Table 1.

Table 1: Summary of biological reference points and terminal year SSB and F estimates from the 2018 benchmark stock assessment.

	SAW/SARC 66 (2018) Biological Reference Points and stock status results (data through 2017)
SSB_{MSY} (biomass target)	126.01 mil lb (57,159 mt)
½ SSB_{MSY} (minimum stock size, or overfished, threshold)	63.01 mil lb (28,580 mt)
Terminal year SSB (2017)	98.22 mil lb (44,552 mt) 78% of SSB_{MSY} **(not overfished)**
$F_{MSY\ PROXY} = F_{35\%}$ (overfishing threshold)	0.448
Terminal year F (2017)	0.334 25% below F_{MSY} (**not overfishing**)

Assessment results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2017 relative to the biological reference points. Fishing mortality on the fully selected age 4 fish ranged between 0.744 and 1.622 during 1982-1996 and then decreased to 0.245 in 2007. Since 2007 the fishing mortality rate has increased, and in 2017 was estimated at 0.334, below the SAW 66 F_{MSY} proxy = $F_{35\%}$ = 0.448 (Figure 1). The 90% confidence interval for F in 2017 was 0.276 to 0.380.

SSB decreased from 67.13 million lb (30,451) mt in 1982 to 16.33 million lb (7,408) mt in 1989, and then increased to 152.46 million lb (69,153) mt in 2003. SSB has decreased since 2003 and was estimated to be 98.22 million lb (44,552 mt) in 2017, about 78% of SSB_{MSY} = 126.01 million lb (57,159 mt), and 56% above the ½ SSB_{MSY} proxy = ½ $SSB_{35\%}$ = 63.01 million lb (28,580 mt; Figure 2). The 90% confidence interval for SSB in 2017 was 39,195 to 50,935 mt.

Recruitment of juvenile summer flounder to the fishery has been below average since about 2011 (Figure 2), although the driving factors behind this trend have not been identified. Bottom trawl survey data also indicate a recent trend of decreasing length and weight at age, which implies slower growth and delayed maturity. These factors affected the change in biological reference points used to determine stock status.

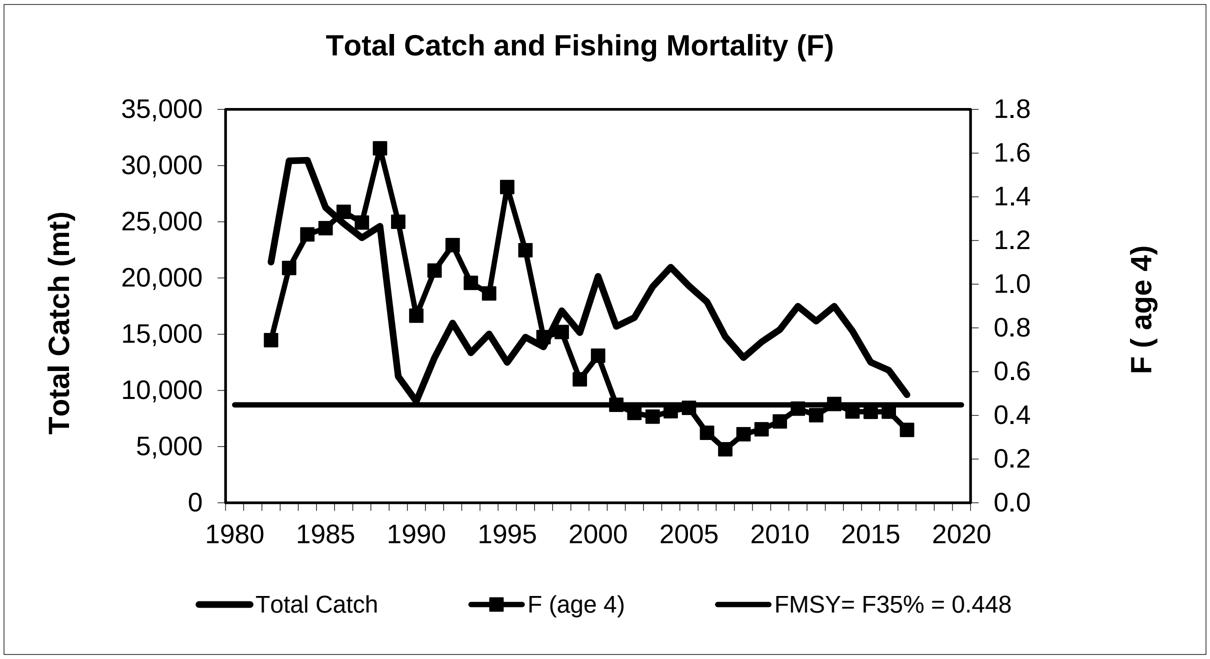


Figure 1: Total fishery catch (mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder. The horizontal solid line is the 2018 SAW66 recommended fishing mortality reference point proxy FMSY = F35% = 0.448.[3]

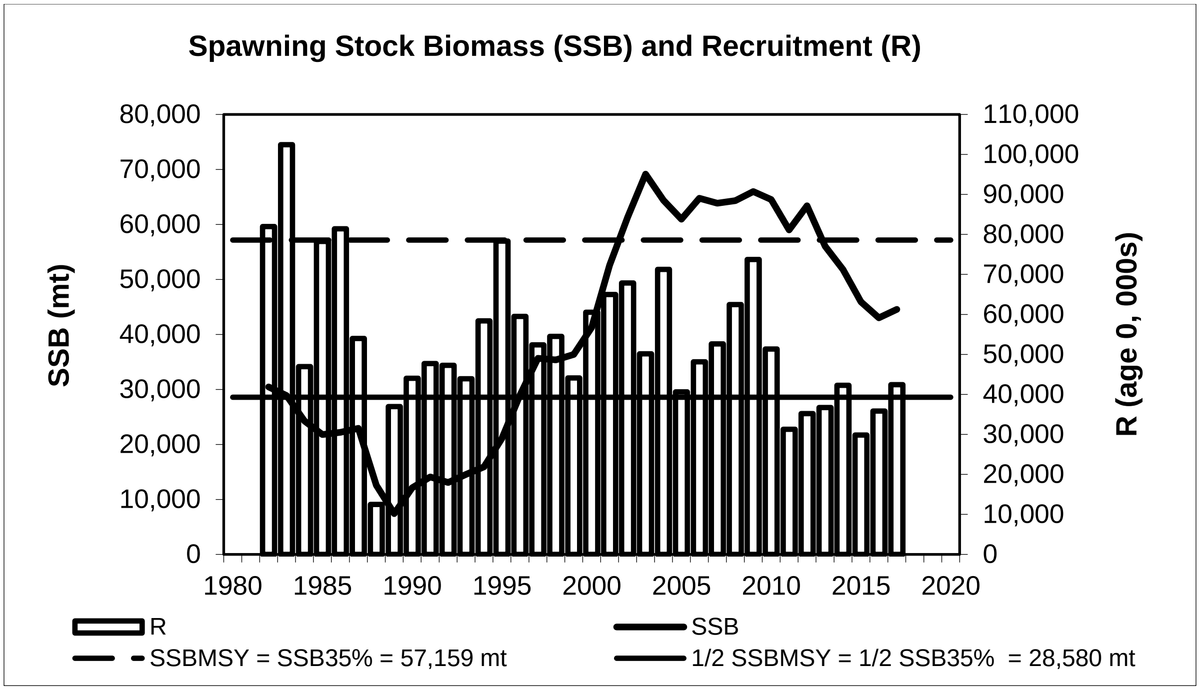


Figure 2: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) 1980-2017. The horizontal dashed line is the 2018 SAW66 recommended target biomass reference point proxy, $SSB_{MSY} = SSB_{35\%} = 57,159$ mt. The horizontal solid line is the 2018 SAW66 recommended threshold biomass reference point proxy ½ SSB_{MSY} = ½ $SSB_{35\%}$ = 28,580 mt.[3]

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission or ASMFC) 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 in the western Atlantic Ocean 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, minimum fish sizes, gear regulations, permit requirements, and other provisions as prescribed by the FMP.

There are large commercial and recreational fisheries for summer flounder. These fisheries are managed primarily using output controls (catch and landings limits), with 60 percent of the landings being allocated to the commercial fishery as a commercial quota and 40 percent allocated to the recreational fishery as a recreational harvest limit. Management also uses minimum fish sizes, 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.

The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for summer flounder, which are then approved by the Council and Commission and submitted to NMFS for final approval and implementation. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the landings allocation prescribed in the FMP and the recent distribution of discards between the commercial and recreational fisheries. The Council first implemented recreational and commercial ACLs, with a system of overage accountability, in 2012. Both the ABC and the ACLs are catch limits (i.e., include both projected landings and discards), while the commercial quota and the recreational harvest limit are landing limits. Table 2 shows summer flounder catch and landings limits from 2008 through 2019, as well as commercial and recreational landings through 2018.

Total (commercial and recreational combined) summer flounder landings, taking into account the revised recreational data from MRIP, generally declined throughout the early 1980s, dropping to a time series low of 13.74 million lb in 2018 (Figure 3).[4,5]

Table 2: Summary of catch limits, landings limits, and landings for commercial and recreational summer flounder fisheries from 2008 through 2019 (revised). Values are in millions of pounds unless otherwise noted.

Management measures	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019[a]
ABC	--	21.50	25.5	33.95	25.58	22.34	21.94	22.57	16.26	11.30	13.23	25.03
Commercial ACL	--	--	--	--	14.00	12.11	12.87	13.34	9.43	6.57	7.70	13.53
Commercial quota[b,c]	9.32	10.74	12.79	17.38	12.73	11.44	10.51	11.07	8.12	5.66	6.63	10.98
Commercial landings	9.21	10.94	13.04	16.56	13.03	12.49	11.07	10.68	7.81	5.83	6.14	--
% of commercial quota landed	99%	102%	102%	95%	102%	109%	105%	96%	96%	103%	93%	--
Recreational ACL	--	--	--	--	11.58	10.23	9.07	9.44	6.84	4.72	5.53	11.51
Recreational harvest limit [b]	6.21	7.16	8.59	11.58	8.49	7.63	7.01	7.38	5.42	3.77	4.42	7.69
Harvest - OLD MRIP	8.15	6.03	5.11	5.96	6.49	7.36	7.39	4.72	6.18	3.19	3.35	--
% Over/Under RHL (Old MRIP)[d]	131%	84%	59%	51%	76%	96%	105%	64%	114%	85%	76%	--
Harvest - NEW MRIP	12.34	11.66	11.34	13.48	16.13	19.41	16.24	11.83	13.24	10.06	7.60	--

[a] As revised via interim final rule on May 17, 2019 (84 FR 22393), based on the 2018 benchmark stock assessment.

[b] For 2008-2014, commercial quotas and RHLs are adjusted for Research Set Aside (RSA). Quotas and harvest limits for 2015-2019 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

[c] Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

[d] The revised MRIP data cannot be compared to past RHLs given that these limits were set based on an assessment that used previous MRIP data.

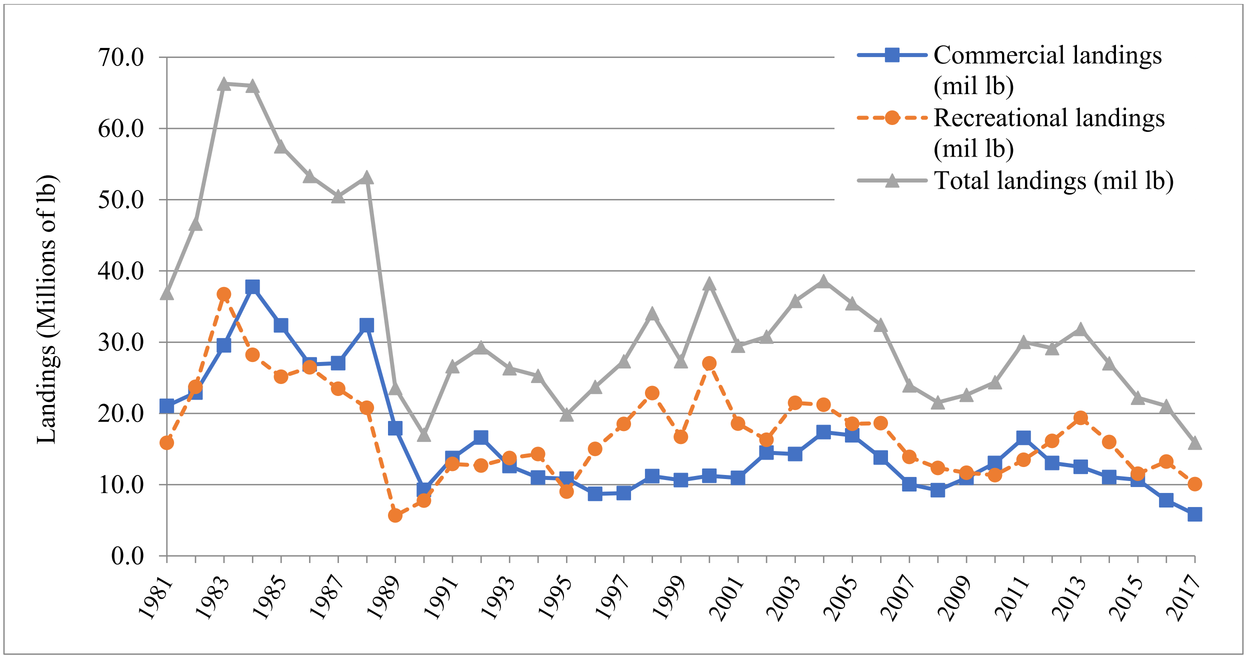


Figure 3: Commercial and recreational summer flounder landings in millions of pounds, Maine-North Carolina, 1980-2018. Recreational landings are based on revised MRIP data.[4,5]

Commercial Fishery

Commercial landings of summer flounder peaked in 1984 at 37.77 million pounds, and reached a low of 5.83 million pounds in 2017. In 2018, commercial fishermen from Maine through North Carolina landed 6.14 million pounds of summer flounder, about 93% of the commercial quota (6.63 million pounds after deductions for prior year landings and discard overages; Table 2). Total ex-vessel value in 2018 was $25.27 million, resulting in an average price per pound of $4.11 (Figure 4).

A moratorium permit is required to fish commercially for summer flounder in federal waters. In 2018, 741 vessels held such permits.[6]

The commercial quota is divided among the states based on the allocation percentages given in Table 3 and each state sets measures to achieve their state-specific commercial quotas. The Council and ASFMC recently approved modifications to the commercial allocations through a Summer Flounder Commercial Issues Amendment (see: http://www.mafmc.org/actions/summer-flounder-amendment). A summary of the commercial allocation changes is available at: http://www.mafmc.org/s/SF-Allocation-Revisions-Fact-Sheet-March-2019.pdf. These changes are pending implementation by the National Marine Fisheries Service, and if approved, are expected to take effect on January 1, 2021.

Table 3: State-by-state percent share of commercial summer flounder allocation.

State	Allocation (%)
ME	0.04756
NH	0.00046
MA	6.82046
RI	15.68298
CT	2.25708
NY	7.64699
NJ	16.72499
DE	0.01779
MD	2.03910
VA	21.31676
NC	27.44584
Total	100

For 1994 through 2018, NMFS dealer data indicate that summer flounder total ex-vessel revenue from Maine to North Carolina ranged from a low of $9.47 million in 1996 to a high of $30.02 million in 2015 (values adjusted to 2018 dollars to account for inflation). The mean price per pound for summer flounder ranged from a low of $0.99 in 2002 (in 2018 dollars) to a high of $4.13 in 2017. In 2018, 6.14 million pounds of summer flounder were landed generating $25.27 million in total ex-vessel revenue (an average of $4.11 per pound; Figure 4).[4]

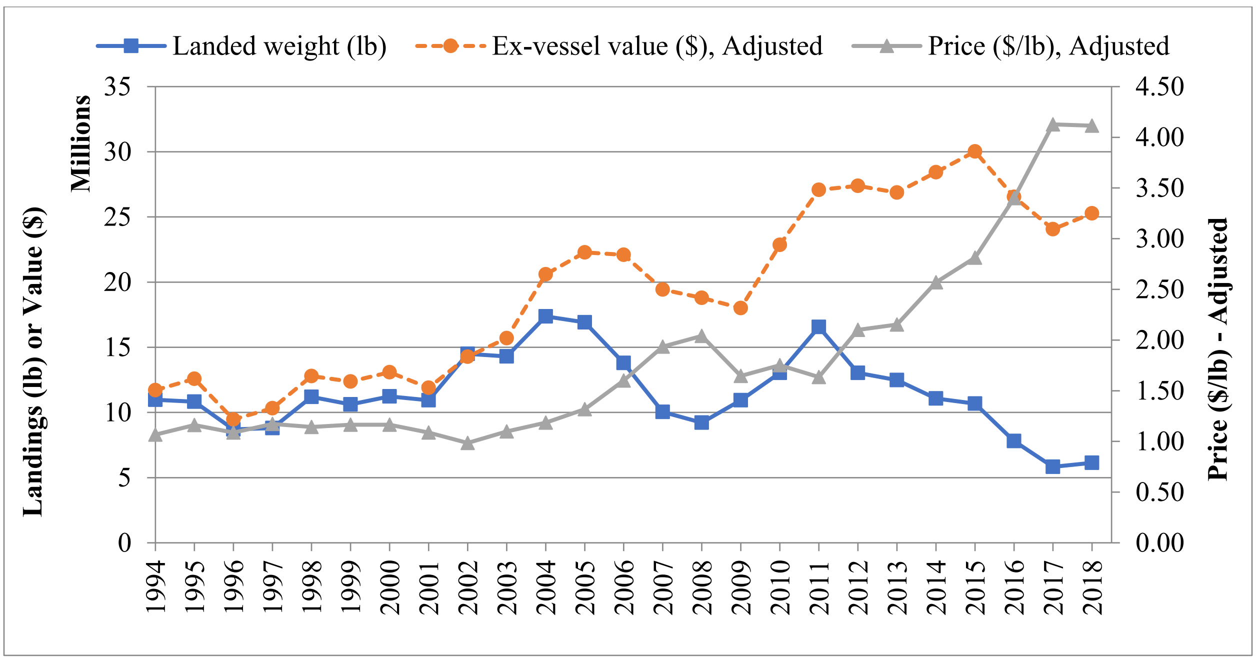


Figure 4: Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2018. Ex-vessel value and price are adjusted to real 2018 dollars using the Gross Domestic Product Price Deflator (GDPDEF).[4]

VTR data for 2018 indicate that the bulk of the summer flounder landings were taken by bottom otter trawls (96 percent). All other gear types each accounted for less than 1 percent of landings.[7] 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).

VTR data were also used to identify all NMFS statistical areas that accounted for more than 5 percent of the summer flounder commercial catch in 2018 (Table 4; Figure 5). Statistical areas 616 and 537 were responsible for the highest percentage of the catch (34% and 17% respectively; Table 4). While statistical area 539 accounted for only 6% of 2018 summer flounder catch, this area had the highest number of trips that caught summer flounder (2,473 trips).[7] Note that discards on VTRs are self-reported.

At least 100,000 pounds of summer flounder were landed by commercial fishermen in 14 ports in 7 states in 2018. These ports accounted for 81% of all 2018 commercial summer flounder landings. Beaufort, NC and Point Judith, RI were the leading ports in 2018 in pounds of summer flounder landed, while Point Judith, RI was the leading port in number of vessels landing summer flounder (Table 5).[4]

Over 200 federally permitted dealers from Maine through North Carolina bought summer flounder in 2018. More dealers bought summer flounder in New York than in any other state (

Table 6). All dealers combined bought approximately $25.27 million worth of summer flounder in 2018.[4]

Table 4: Statistical areas that accounted for at least 5 percent of the total summer flounder catch in 2018, with associated number of trips.[7]

Statistical Area	Percent of 2018 Commercial Summer Flounder Catch	Number of Trips
616	34%	1,062
537	17%	1,199
613	13%	1,553
612	6%	1,281
539	6%	2,473
622	6%	263

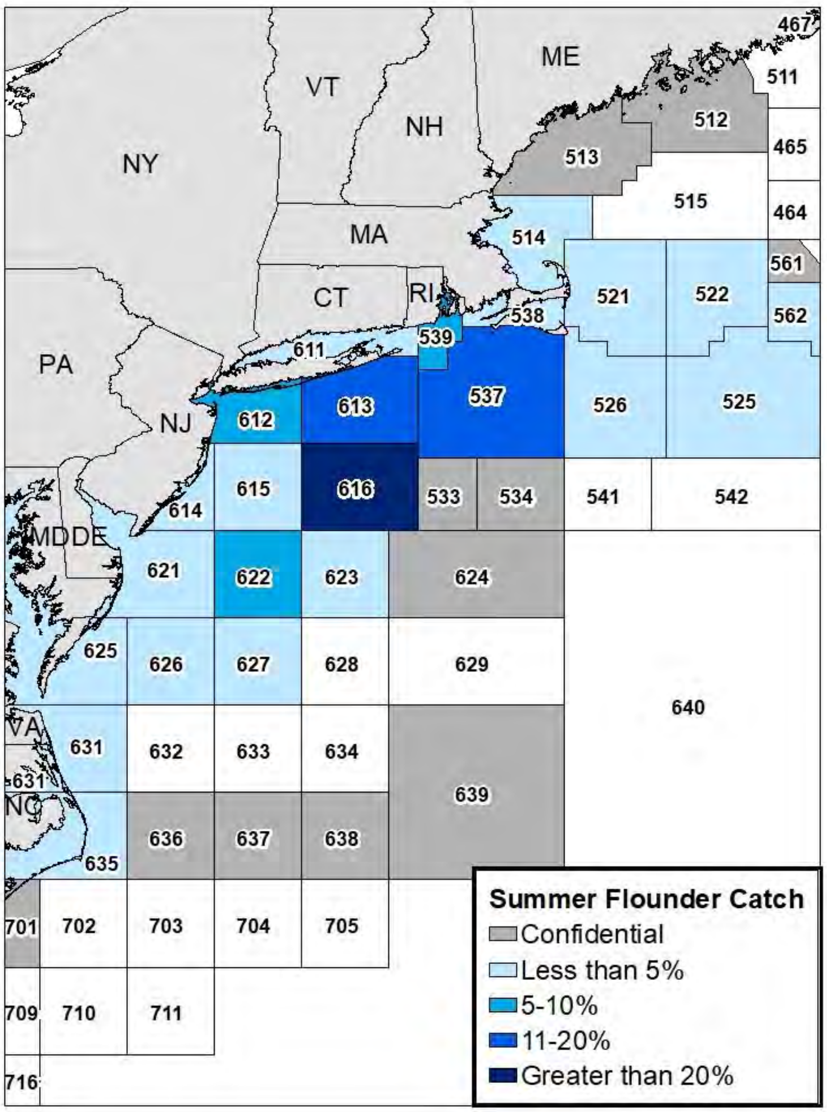


Figure 5: NMFS statistical areas showing percent of total commercial summer flounder catch in 2018, according to VTR data.[7]

Table 5: Ports reporting at least 100,000 pounds of commercial summer flounder landings in 2018, based on dealer data.[4]

Port	Commercial summer flounder landings (lb)	% of total 2018 commercial summer flounder landings	Number of vessels landings summer flounder
BEAUFORT, NC	1,028,999	17%	70
POINT JUDITH, RI	894,791	15%	129
PT. PLEASANT, NJ	558,815	9%	51
HAMPTON, VA	524,723	9%	55
NEWPORT NEWS, VA	498,680	8%	45
MONTAUK, NY	263,770	4%	68
CHINCOTEAGUE, VA	190,783	3%	25
BELFORD, NJ	180,625	3%	20
WANCHESE, NC	172,657	3%	15
CAPE MAY, NJ	161,144	3%	44
NEW BEDFORD, MA	142,044	2%	58
ENGELHARD, NC	139,805	2%	11
ORIENTAL, NC	104,421	2%	7
STONINGTON, CT	100,526	2%	19

Table 6: Number of dealers per state which reported purchases of summer flounder in 2018. C = Confidential.[4]

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number Of Dealers	30	27	15	49	29	C	6	16	28

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 ASMFC 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 ASMFC's management process and submitted to NMFS. The combined state or regional measures must achieve the same level of conservation as would a set of coastwide measures developed to adhere to the overall recreational harvest limit. If NMFS considers the combination of the state- or region- specific measures to be "equivalent" to the coastwide measures, they may then waive the coastwide regulation 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 conservation equivalency each year since 2001. From 2001 through 2013, measures were developed under state-by-state conservation equivalency. 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. The 2018 and 2019 regional conservation equivalency measures are given in Table 7.

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, substantially raising the overall summer flounder catch and harvest estimates. On average, the new landings estimates for summer flounder (in pounds) are 1.8 times higher over the time series 1981-2017, and 2.3 times higher over the past 10 years (2008-2017). In 2017, new estimates of landings in pounds were 3.16 times higher than the previous estimates.

Revised MRIP estimates indicate that recreational catch for summer flounder peaked in 2010 with 58.89 million fish caught. Recreational harvest peaked in 1983, with 25.78 million fish landed, totaling 36.74 million pounds. Recreational catch reached a low in 1989 with 5.06 million fish caught, while landings reached a low in 2018 with 2.41 million fish landed (3.35 million pounds; Figure 6).[5]

Table 7: Summer flounder recreational fishing measures in 2018 and 2019, by state, under regional conservation equivalency. 2018 and 2019 regions 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.

	2018			**2019**		
State	**Minimum Size (inches)**	**Possession Limit**	**Open Season**	**Minimum Size (inches)**	**Possession Limit**	**Open Season**
Massachusetts	17	5 fish	May 23-October 9	17	5 fish	May 23-October 9
Rhode Island (Private, For-Hire, and all other shore-based fishing sites)	19	6 fish	May 1-December 31	19	6 fish	May 3-December 31
RI 7 designated shore sites	N/A	N/A		19	4 fish*	
				17	2 fish*	
Connecticut	19	4 fish	May 4-September 30	19	4 fish	May 4- September 30
CT Shore Program (45 designed shore sites)	17			17		
New York	19			19		
New Jersey	18	3 fish	May 25-September 22	18	3 fish	May 24- September 21
NJ Shore program site (ISBSP)	16	2 fish		16	2 fish	
New Jersey/Delaware Bay COLREGS	17	3 fish		17	3 fish	
Delaware	16.5	4 fish	January 1-December 31	16.5	4 fish	January 1- December 31
Maryland						
PRFC						
Virginia						
North Carolina	15	4 fish	January 1-December 31	15	4 fish	January 1- December 31

*Combined possession limit of 6 fish, no more than 2 fish at 17-inch minimum size limit.

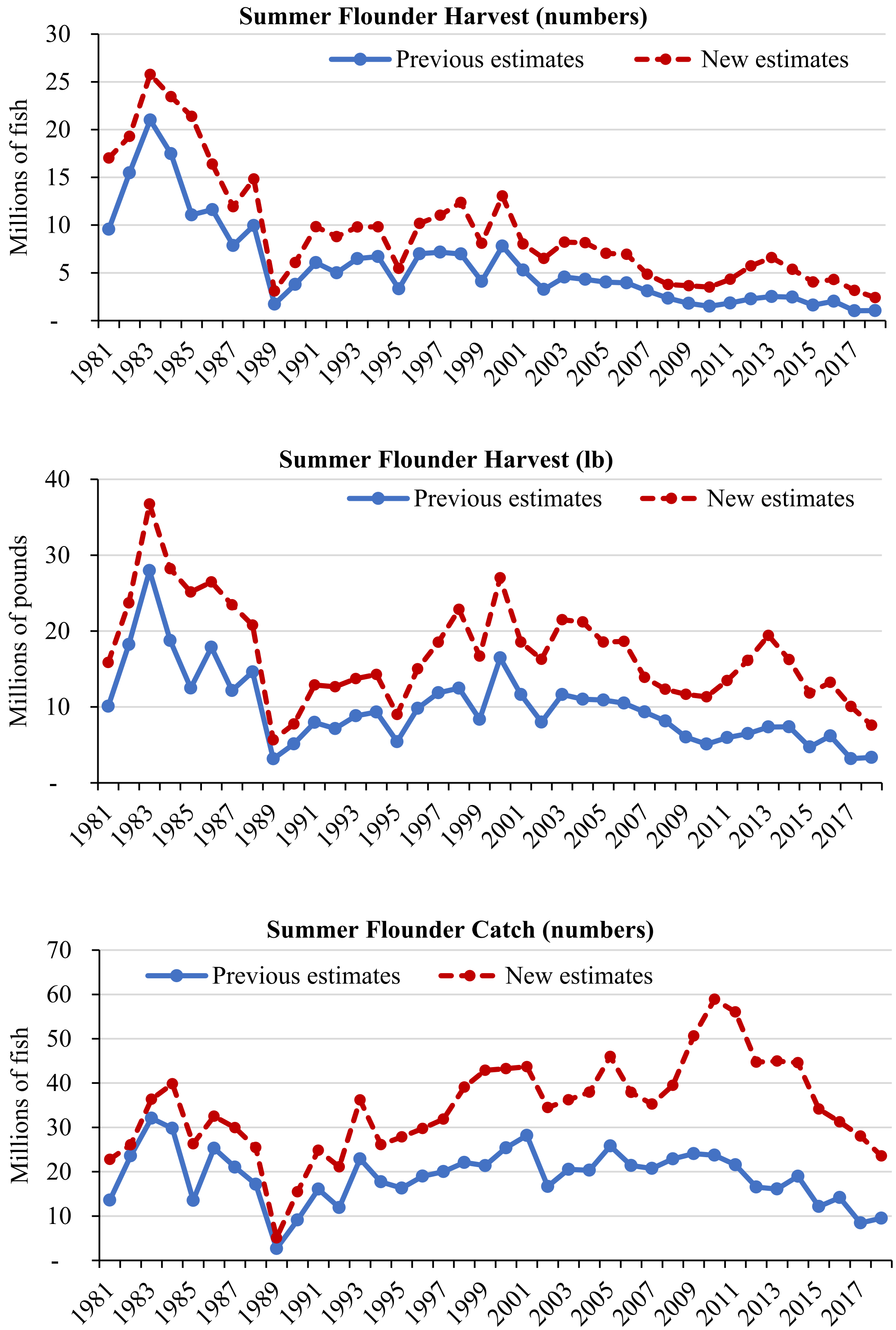


Figure 6: Pre- and post-revision MRIP estimates of recreational summer flounder harvest in numbers of fish and pounds and catch in numbers of fish, ME - NC, 1981 - 2017. 2018 "old" MRIP values are "back-calibrated," as MRIP stopped producing estimates using the old methodology after 2017.[5]

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2018, 812 vessels held summer flounder federal party/charter permits.[6] Many of these vessels also hold recreational permits for scup and black sea bass.

On average, an estimated 84 percent of the landings (in numbers of fish) occurred in state waters over the past ten years, and about 82 percent of landings came from state waters in 2018 (Table 8). The majority of summer flounder were landed in New York and New Jersey in 2018 (Table 9).[5]

By fishing mode, about 84% of recreational summer flounder harvest in 2018 was from anglers who fished on private or rental boats. About 6% was from party or charter boats, and about 10% was from anglers fishing from shore. The revised MRIP time series increased the proportion of harvest estimated to occur from private and shore modes while making no changes to the estimates for party/charter modes, modifying the percentages attributable to each mode (

Table 10).[5]

Table 8: Estimated percentage of summer flounder recreational landings (in numbers of fish) from state vs. federal waters, Maine through North Carolina, 2009-2018 (revised MRIP data).[5]

Year	State <= 3 mi	EEZ > 3 mi
2009	90%	10%
2010	93%	7%
2011	94%	6%
2012	86%	14%
2013	77%	23%
2014	78%	22%
2015	82%	18%
2016	79%	21%
2017	79%	21%
2018	82%	18%
Avg. 2009 - 2018	**84%**	**16%**
Avg. 2016 - 2018	**80%**	**20%**

Table 9: State contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2016-2018 (revised MRIP data).[5]

State	2016	2017	2018	2016-2018 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	2%	2%	3%	2%
Rhode Island	3%	5%	7%	5%
Connecticut	8%	4%	7%	6%
New York	42%	37%	25%	35%
New Jersey	34%	38%	43%	38%
Delaware	4%	3%	4%	4%
Maryland	1%	2%	2%	2%
Virginia	5%	6%	6%	6%
North Carolina	2%	3%	2%	2%
Total	100%	100%	100%	100%

Table 10: The percent of summer flounder landings (in number of fish) by recreational fishing mode, Maine through North Carolina, 1981-2018 (revised MRIP data).[5]

Year	Shore	Party/Charter	Private/Rental	Total number of fish landed (millions)
1981	45%	7%	49%	17.02
1982	14%	12%	74%	19.29
1983	19%	12%	68%	25.78
1984	13%	12%	75%	23.45
1985	12%	5%	84%	21.39
1986	25%	6%	69%	16.38
1987	12%	7%	81%	11.93
1988	19%	11%	70%	14.82
1989	20%	7%	73%	3.10
1990	16%	13%	71%	6.07
1991	24%	10%	66%	9.83
1992	13%	6%	81%	8.79
1993	12%	9%	79%	9.80
1994	15%	9%	76%	9.82
1995	14%	4%	82%	5.47
1996	6%	7%	86%	10.18
1997	7%	7%	86%	11.04
1998	8%	3%	89%	12.37
1999	10%	5%	85%	8.10
2000	16%	5%	80%	13.05
2001	8%	3%	89%	8.03
2002	10%	4%	86%	6.51
2003	7%	6%	87%	8.21
2004	9%	9%	82%	8.16
2005	6%	6%	88%	7.04
2006	8%	3%	89%	6.95
2007	5%	9%	85%	4.85
2008	6%	4%	89%	3.78
2009	7%	4%	89%	3.65
2010	10%	4%	86%	3.51
2011	4%	3%	93%	4.33
2012	9%	3%	88%	5.74
2013	11%	4%	85%	6.59
2014	7%	7%	86%	5.28
2015	7%	5%	88%	3.95
2016	8%	4%	89%	4.30
2017	13%	4%	84%	3.17
2018	11%	5%	84%	2.41
% of Total, 1981-2018	14%	7%	78%	--
% of Total, 2014-2018	9%	6%	85%	--

References

[1] Packer, D. B, S. J. Griesbach, P. L. Berrien, C. A. Zetlin, D. L. Johnson, and W.W. Morse. 1999. Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics. NOAA Technical Memorandum NMFS-NE-151.

[2] Northeast Fisheries Science Center. 2019. Data Update for Summer Flounder.

[3] Northeast Fisheries Science Center (NEFSC). 2019. 66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 19-01; 40 p. Available from: https://www.nefsc.noaa.gov/publications/crd/crd1908/.

[4] Unpublished NMFS dealer data as of June 3, 2019 (i.e., “AA tables”, which include both state and federal dealer data).

[5] Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division. Accessed June 27, 2019. Available at: http://www.st.nmfs.noaa.gov/recreational-fisheries/index.

[6] Unpublished NMFS permit data as of December 31, 2018.

[7] Unpublished NMFS Vessel Trip Report (VTR) data as of March 27, 2019.

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 | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 27, 2019

To: Council and Board

From: Julia Beaty, staff

Subject: 2020-2021 Black Sea Bass Specifications

The Council and Board will consider 2020-2021 specifications for black sea bass on Wednesday, October 9, 2019. Materials listed below are provided for consideration of this agenda item.

Please note that some materials are behind other tabs. Items are listed in reverse chronological order.

1) Monitoring Committee recommendation summary *(behind Tab 11)*
2) September 2019 Scientific and Statistical Committee meeting report *(behind Tab 18)*
3) Supplemental staff memo on 2020-2021 black sea bass specifications dated September 11, 2019
4) Staff memo on 2020-2021 black sea bass specifications dated September 4, 2019
5) Black sea bass 2019 operational stock assessment *(behind Tab 7)*
6) 2019 Advisory Panel Fishery Performance Report (*behind Tab 11)*
7) Additional written comments from advisors related to summer flounder, scup, and black sea bass Fishery Performance Reports *(behind Tab 11)*
8) 2019 Black Sea Bass Fishery Information Document

The Advisory Panel met via webinar on September 24, 2019. A summary of that meeting and additional comments from advisors related to that meeting will be added to the online briefing materials once they are available.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 11, 2019

To: Chris Moore, Executive Director

From: Julia Beaty, staff

Subject: Supplemental Information for Black Sea Bass 2020-2021 Specifications

This memo supplements the staff memo on 2020-2021 black sea bass specifications, dated September 4, 2019, available at: http://www.mafmc.org/council-events/2019/sfsbsb-mc-sept-16-17. This memo is intended to assist the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee in their discussions of black sea bass catch and landings limits for 2020-2021.

The previous staff memo included potential 2020-2021 catch and landings limits assuming a 60% overfishing limit (OFL) coefficient of variation (CV). On September 10, 2019, the Scientific and Statistical Committee (SSC) approved an OFL CV of 100%. The catch and landings limits shown in Table 1 reflect the SSC's OFL and acceptable biological catch (ABC) recommendations.

The other tables and figures provided in this memo are intended to assist the Monitoring Committee in their discussions of 2020-2021 black sea bass commercial quotas and recreational harvest limits (RHLs), including discussions regarding estimates of expected discards and the implications of the 49% commercial / 51% recreational allocation of the landings portion of the ABC required under the joint Fishery Management Plan.

Note: Minor adjustments to the values in some tables and figures were made 9/13/2019.

Table 1: Currently implemented 2019 and interim 2020 black sea bass catch and landings limits and potential 2020 (revised) and 2021 catch and landings limits, based on the SSC's OFL and ABC recommendations. Values for standard/varying and averaged/constant ABC approaches are provided. The calculations for the ABC discards and landings portions and the proportions of discards by sector are based on values provided with the 2019 operational stock assessment (Table 3).

Management measure	**2019 and interim 2020**		**2020 (revised) and 2021, standard ABC approach**				**2020 (revised) and 2021, average ABC approach**				**Basis**
			2020		**2021**		**2020**		**2021**		
	mil lb	**mt**	**mil lb**	**mt**	**mil lb**	**mt**	**mil lb**	**mt**	**mil lb**	**mt**	
OFL	10.29	4,667	19.39	8,795	17.82	8,083	19.39	8,795	17.68	8,021	SSC recommendations based on stock assessment projections
ABC	**8.94**	**4,055**	**15.70**	**7,123**	**14.43**	**6,546**	**15.07**	**6,835**	**15.07**	**6,835**	SSC recommendations based on stock assessment projections and Council risk policy
ABC discards	1.76	799	3.84	1,741	3.53	1,600	3.68	1,671	3.68	1,671	24% of ABC, based on avg. 2016-2018 discards as % of catch (NEFSC estimates)
Projected com. discards	0.83	377	1.46	664	1.34	610	1.40	637	1.40	637	38% of ABC discards, based on avg. 2016-2018 % of discards by sector (NEFSC estimates)
Projected rec. discards	0.93	422	2.38	1,078	2.18	990	2.28	1,034	2.28	1,034	62% of ABC discards, based on avg. 2016-2018 % of discards by sector (NEFSC estimates)
Commercial ACL	4.35	1,974	7.28	3,301	6.69	3,033	6.98	3,167	6.98	3,167	49% of ABC landings portion + projected com. discards
Commercial ACT	4.35	1,974	7.28	3,301	6.69	3,033	6.98	3,167	6.98	3,167	Set equal to the ACL, no deduction for management uncertainty (staff recommendation)
Commercial quota	**3.52**	**1,596**	**5.81**	**2,637**	**5.34**	**2,423**	**5.58**	**2,530**	**5.58**	**2,530**	Com. ACT minus projected com. discards
Recreational ACL	4.59	2,083	8.43	3,822	7.74	3,513	8.09	3,668	8.09	3,668	51% of ABC landings portion + projected rec. discards
Recreational ACT	4.59	2,083	8.43	3,822	7.74	3,513	8.09	3,668	8.09	3,668	Set equal to the ACL, no deduction for management uncertainty (staff recommendation)
RHL	**3.66**	**1,661**	**6.05**	**2,745**	**5.56**	**2,522**	**5.81**	**2,634**	**5.81**	**2,634**	Rec. ACT minus projected rec. discards

Table 2: Potential 2020-2021 catch and landings limits, as shown in Table 1, but with discard proportions estimated based on the values used by the National Marine Fisheries Service Greater Atlantic Regional Fisheries Office (GARFO; Table 3).

Management measure	2019 and interim 2020		2020 (revised) and 2021, standard ABC approach				2020 (revised) and 2021, average ABC approach				Basis
			2020		2021		2020		2021		
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	
OFL	10.29	4,667	19.39	8,795	17.82	8,083	19.39	8,795	17.68	8,021	SSC recommendations based on stock assessment projections
ABC	**8.94**	**4,055**	**15.70**	**7,123**	**14.43**	**6,546**	**15.07**	**6,835**	**15.07**	**6,835**	SSC recommendations based on stock assessment projections and Council risk policy
ABC discards	1.76	799	4.24	1,923	3.90	1,767	4.07	1,845	4.07	1,845	27% of ABC, based on avg. 2016-2018 discards as % of catch (GARFO estimates)
Projected com. discards	0.83	377	1.74	789	1.60	725	1.67	757	1.67	757	41% of ABC discards, based on avg. 2016-2018 % of discards by sector (GARFO estimates)
Projected rec. discards	0.93	422	2.50	1,135	2.30	1,043	2.40	1,089	2.40	1,089	59% of ABC discards, based on avg. 2016-2018 % of discards by sector (GARFO estimates)
Commercial ACL	4.35	1,974	7.36	3,336	6.76	3,066	7.06	3,202	7.06	3,202	49% of ABC landings portion + projected com. discards
Commercial ACT	4.35	1,974	7.36	3,336	6.76	3,066	7.06	3,202	7.06	3,202	Set equal to the ACL, no deduction for management uncertainty (staff recommendation)
Commercial quota	**3.52**	**1,596**	**5.62**	**2,548**	**5.16**	**2,342**	**5.39**	**2,445**	**5.39**	**2,445**	Com. ACT minus projected com. discards
Recreational ACL	4.59	2,083	8.35	3,787	7.67	3,480	8.01	3,633	8.01	3,633	51% of ABC landings portion + projected rec. discards
Recreational ACT	4.59	2,083	8.35	3,787	7.67	3,480	8.01	3,633	8.01	3,633	Set equal to the ACL, no deduction for management uncertainty (staff recommendation)
RHL	**3.66**	**1,661**	**5.85**	**2,652**	**5.37**	**2,437**	**5.61**	**2,545**	**5.61**	**2,545**	Rec. ACT minus projected rec. discards

Table 3: Commercial and recreational landings and dead discards during 2016-2018 based on values provided with the 2019 operational stock assessment and values used by GARFO. GARFO commercial discard values for 2018 are preliminary. GARFO does not generate recreational dead discard estimates and instead uses those provided by the Northeast Fisheries Science Center (i.e., the values provided with the 2019 operational stock assessment).

	2019 operational assessment							**GARFO**						
	2016		**2017**		**2018**		**Avg**	**2016**		**2017**		**2018**		**Avg**
	mil lb	mt	mil lb	mt	mil lb	mt		mil lb	mt	mil lb	mt	mil lb	mt	
Com. landings	2.50	1,133	3.99	1,808	3.34	1,514		2.59	1,174	3.99	1,808	3.41	1,550	
Com. dead disc.	1.67	757	2.26	1,027	1.59	722		1.27	575	2.60	1,180	2.58*	1,170*	
Rec. landings	13.52	6,131	12.55	5,692	8.84	4,008		12.05	5,465	11.48	5,208	7.92	3,593	
Rec. dead discards	3.07	1,391	3.60	1,634	2.28	1,033		3.07	1,391	3.60	1,634	2.28	1,033	
Total catch	20.75	9,412	22.40	10,161	16.04	7,277		18.98	8,605	21.67	9,830	16.19	7,346	
Discards as % of catch	23%		26%		24%		**24%**	23%		29%		30%		**27%**
Com. disc. as % of total disc.	35%		39%		41%		**38%**	29%		42%		53%		**41%**
Rec. disc. as % of total disc.	65%		61%		59%		**62%**	71%		58%		47%		**59%**

* Preliminary

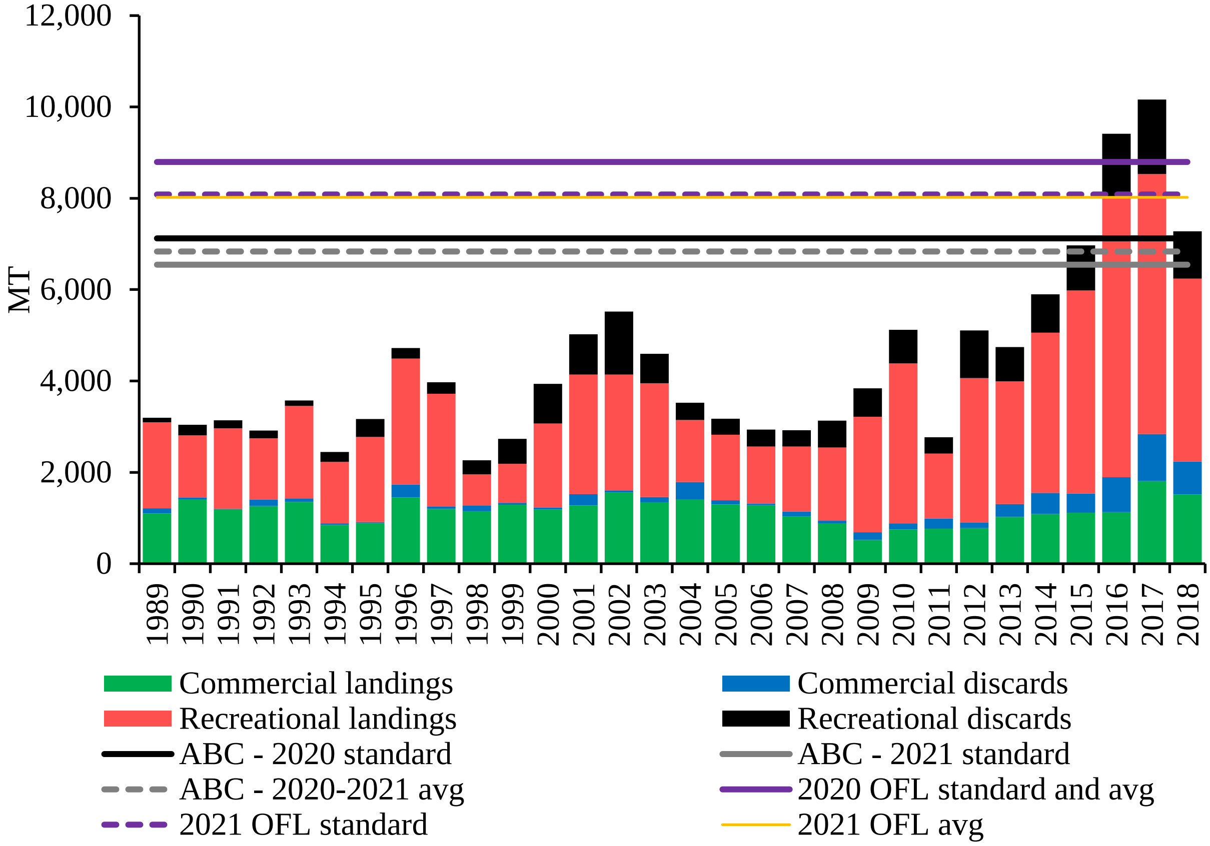

Figure 1: Commercial and recreational landings and discards, 1989-2018 compared to the 2020 and 2021 OFLs (purple and orange lines) and ABCs (black and gray lines) recommended by the SSC under the standard and averaged approaches. Landings and discards data provided by Gary Shepherd, Northeast Fisheries Science Center.

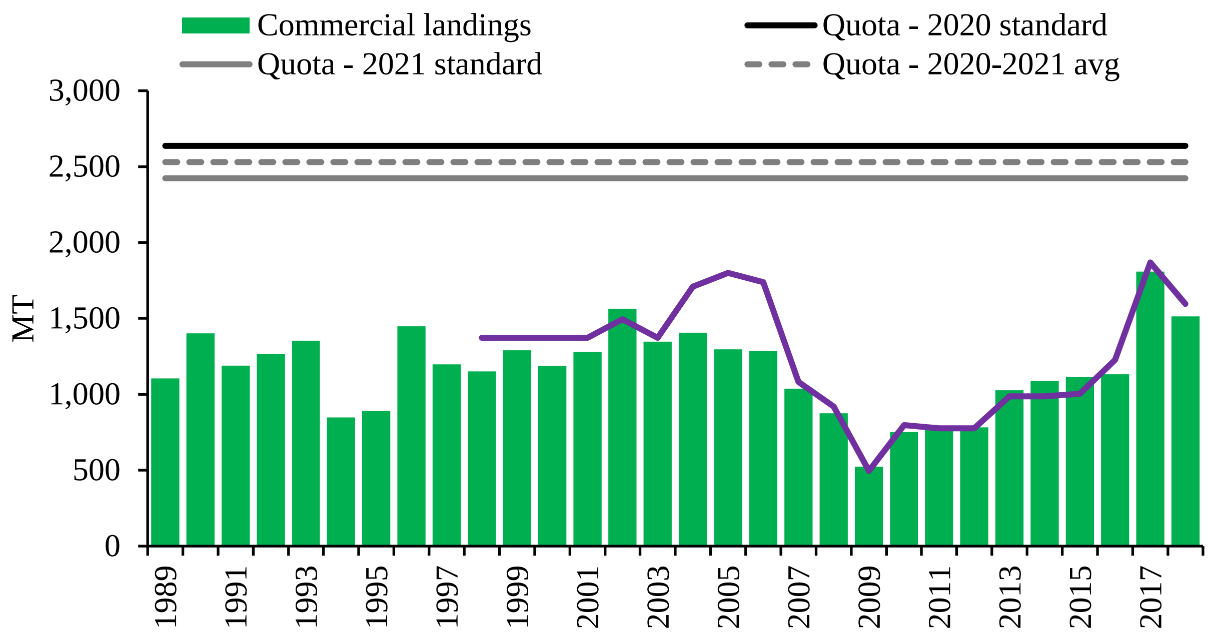

Figure 2: Commercial landings, 1989-2018 (green bars), compared to past quotas (purple line), and potential 2020-2021 quotas (black and gray lines; Table 1). Landings data provided by Gary Shepherd, Northeast Fisheries Science Center.

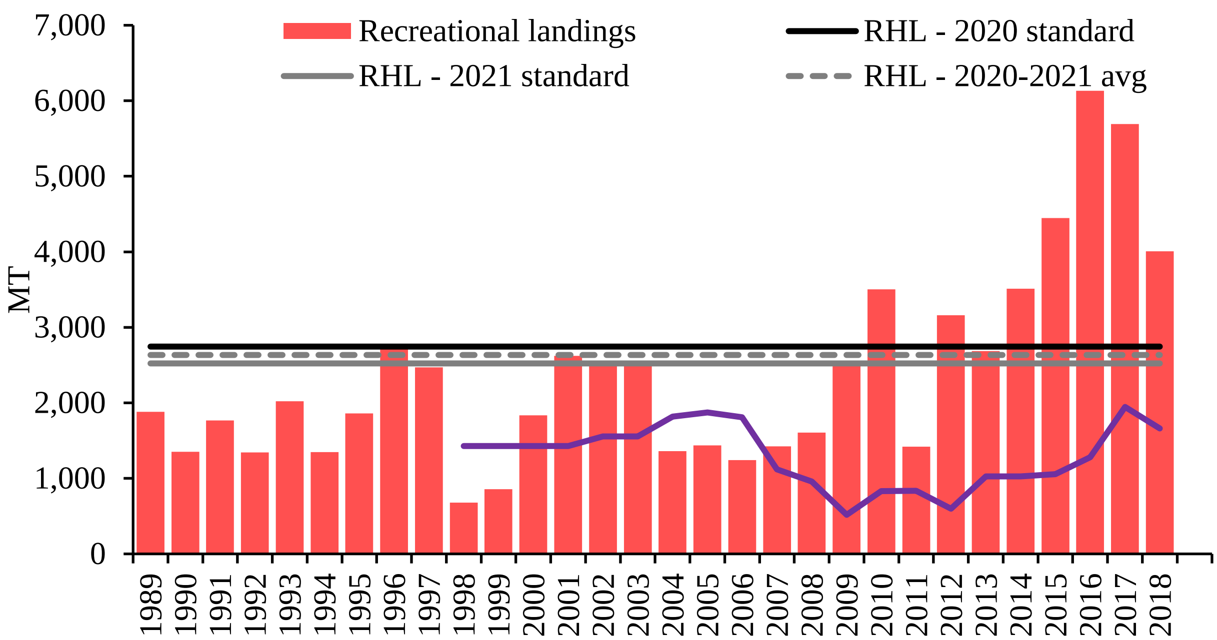

Figure 3: Recreational landings, 1989-2018 (red bars), compared to past RHLs (purple line), and potential 2020-2021 RHLs (black and gray lines; Table 1). Landings data provided by Gary Shepherd, Northeast Fisheries Science Center.

Table 4: Commercial and recreational landings and dead discards in metric tons, 1989-2018. (Source: personal communication, Gary Shepherd, Northeast Fisheries Science Center). Recreational dead discards in weight prior to 1989 are not available.

Year	Com land	Com disc	Rec land	Rec disc	Total catch	% Com catch	% Rec catch	% Com land	% Rec land
1989	1,105	109	1,881	99	3,194	38%	62%	37%	63%
1990	1,402	53	1,354	231	3,040	48%	52%	51%	49%
1991	1,190	10	1,766	175	3,142	38%	62%	40%	60%
1992	1,264	141	1,344	165	2,914	48%	52%	48%	52%
1993	1,353	78	2,022	120	3,573	40%	60%	40%	60%
1994	848	37	1,347	210	2,443	36%	64%	39%	61%
1995	889	24	1,860	397	3,171	29%	71%	32%	68%
1996	1,448	285	2,755	236	4,724	37%	63%	34%	66%
1997	1,197	55	2,470	251	3,973	32%	68%	33%	67%
1998	1,152	121	681	310	2,263	56%	44%	63%	37%
1999	1,290	45	856	545	2,736	49%	51%	60%	40%
2000	1,186	44	1,836	873	3,939	31%	69%	39%	61%
2001	1,279	240	2,621	886	5,025	30%	70%	33%	67%
2002	1,564	46	2,528	1,381	5,518	29%	71%	38%	62%
2003	1,347	114	2,492	641	4,595	32%	68%	35%	65%
2004	1,405	380	1,362	374	3,521	51%	49%	51%	49%
2005	1,297	89	1,437	350	3,173	44%	56%	47%	53%
2006	1,285	33	1,243	371	2,933	45%	55%	51%	49%
2007	1,037	104	1,425	354	2,920	39%	61%	42%	58%
2008	875	66	1,606	585	3,132	30%	70%	35%	65%
2009	523	167	2,525	623	3,838	18%	82%	17%	83%
2010	751	134	3,502	733	5,121	17%	83%	18%	82%
2011	765	227	1,421	358	2,771	36%	64%	35%	65%
2012	782	116	3,162	1,048	5,108	18%	82%	20%	80%
2013	1,027	278	2,685	749	4,739	28%	72%	28%	72%
2014	1,088	459	3,510	839	5,896	26%	74%	24%	76%
2015	1,113	423	4,448	985	6,969	22%	78%	20%	80%
2016	1,133	757	6,131	1,391	9,412	20%	80%	16%	84%
2017	1,808	1,027	5,692	1,634	10,162	28%	72%	24%	76%
2018	1,514	722	4,008	1,033	7,277	31%	69%	27%	73%
1989-2018 average						**34%**	**66%**	**36%**	**64%**
1989-1997 average (pre joint management)						**38%**	**62%**	**39%**	**61%**
1998-2018 average (post joint management)						**32%**	**68%**	**34%**	**66%**
2014-2018 average (most recent 5 years)						**25%**	**75%**	**22%**	**78%**

Table 5: Commercial and recreational landings in millions of pounds, Maine through Cape Hatteras, North Carolina, 1983-1992 (i.e., the years used to calculate the sector allocations implemented through Amendment 9). Commercial and recreational landings values and percentages based on an analysis done for Amendment 9 (1996) are also shown.

Year	Com. landings, current ACCSP*	Rec. landings, revised MRIP	% Com. landings updated	% Rec. landings updated	Com. landings Amend. 9	Rec. landings Amend. 9	% Com. landings Amend. 9	% Rec. landings Amend. 9
1983	3.34	4.86	41%	59%	3.34	4.08	45%	55%
1984	4.33	1.91	69%	31%	4.33	1.45	75%	25%
1985	3.42	3.66	48%	52%	3.42	2.10	62%	38%
1986	4.19	11.02	28%	72%	4.19	12.39	25%	75%
1987	4.17	1.83	70%	31%	4.17	1.92	68%	32%
1988	4.14	3.58	54%	46%	4.14	2.87	59%	41%
1989	2.92	5.3	36%	64%	2.92	3.29	47%	53%
1990	3.5	3.91	47%	53%	3.50	2.76	56%	44%
1991	2.81	4.84	37%	63%	2.81	4.19	40%	60%
1992	3.01	3.77	44%	56%	3.01	2.71	53%	47%
Avg			**45%**	**55%**			**49%**	**51%**

*ACCSP landings should be considered preliminary as they have not been validated by all states.

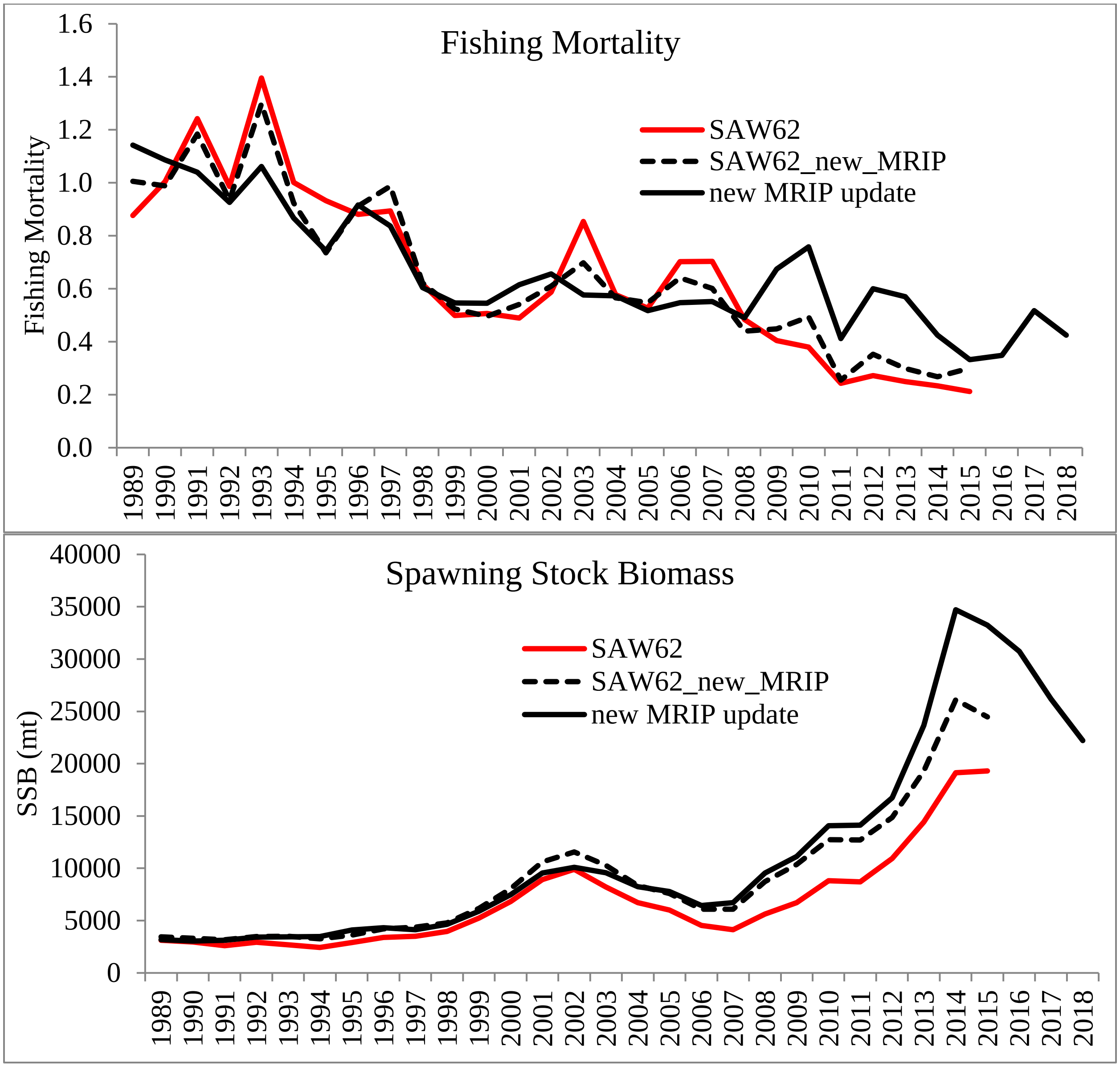

Figure 4: Estimates of fishing mortality (F) and spawning stock biomass based on bridge model runs completed as part of the 2019 operational stock assessment. The red line (SAW 62) represents estimates through 2015 based on the 2016 benchmark stock assessment. The dashed black line (SAW 62 new MRIP) represents estimates through 2015 based on the 2016 benchmark assessment model incorporating the revised MRIP data through 2015. The solid black line (new MRIP update) represents estimates from the 2019 operational stock assessment. This information can be used to gauge a rough estimate of the influence of the new MRIP data on the model output compared to the influence of other changes made in the model. For the F estimates, it should be noted that the 2016 benchmark estimated F for fully selected age 4-7 fish and the 2019 operational assessment estimated F for fully selected age 6-7 fish. For more information, see the 2019 operational assessment report, available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11. Figure source: personal communication, Gary Shepherd, Northeast Fisheries Science Center.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: September 4, 2019

TO: Chris Moore, Executive Director

FROM: Julia Beaty, Staff

SUBJECT: Revised Memo on 2020-2021 Black Sea Bass Specifications

Note: This memo is an updated version of the staff memo dated August 28, 2019. The values for spawning stock biomass and fishing mortality in 2018, Acceptable Biological Catch (ABC) projections for 2020-2021, and other catch and landings limits for 2020-2021 have been modified. An additional figure was also added (Figure 1). All other contents remain unchanged from the previous version of this memo.

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 revised 2020 and new 2021 catch and landings limits for black sea bass, as well as commercial management measures for 2020. Additional information on fishery performance and past management measures can be found in the 2019 Black Sea Bass Fishery Information Document and the 2019 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.[1]

A black sea bass operational stock assessment was peer reviewed and accepted in August 2019. This assessment incorporated fishery catch and fishery-independent survey data through 2018, including revised recreational catch data provided by the Marine Recreational Information Program (MRIP) for 1989-2018. The revised MRIP data are based on a new estimation methodology accounting for changes to the angler intercept methodology and the 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, substantially raising the overall black sea bass catch and harvest estimates. For example, estimates of black sea bass harvest in weight for 2014-2018 using the revised methodology are on average 2.32 times the estimates using the old methodology.

The August 2019 operational assessment found that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2018 compared to the revised reference points calculated through the assessment. Spawning stock biomass (SSB) in 2018 was 73.65 million pounds (33,407 mt, adjusted for retrospective bias), 2.4 times the updated biomass reference

[1] Available at: http://www.mafmc.org/sf-s-bsb

point (i.e., $SSB_{MSY\ proxy} = SSB_{40\%}$=31.07 million pounds/14,092 mt). The average fishing mortality rate (F) on fully selected ages 6-7 fish in 2018 was 0.42 (adjusted for retrospective bias), 91% of the updated fishing mortality threshold reference point (i.e., $F_{MSY\ proxy} = F_{40\%} = 0.46$).[2] The results of the 2019 operational assessment are described in more detail on pages 7-10.

Interim 2020 catch and landings limits for black sea bass were adopted by the Council and the Atlantic States Marine Fisheries Commission's (ASMFC's or Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in March 2019 (Table 1). These catch and landings limits are identical to those implemented for 2019 and are intended to be replaced as soon as possible with revised catch and landings limits based on the August 2019 operational stock assessment.

The Council's SSC is tasked with recommending a revised 2020 black sea bass ABC and a 2021 black sea bass ABC during their September 2019 meeting. Following that meeting, the Monitoring Committee will meet to recommend 2020-2021 Annual Catch Limits (ACLs), Annual Catch Targets (ACTs), commercial quotas, recreational harvest limits (RHLs), and any necessary modifications to commercial gear restrictions, minimum fish sizes, and other commercial measures. The Council and Board will meet jointly in October 2019 to review the recommendations of the SSC and Monitoring Committee, as well as input from advisors, and adopt revised catch and landings limits for 2020, new catch and landings limits for 2021, and any desired changes to the commercial management measures for 2020. Recreational management measures (bag limits, size restrictions, and open/closed seasons) for 2020 will be considered in late 2019 after preliminary recreational harvest estimates through August 2019 are available.

Two sets of ABC projections for 2020-2021 are available: one based on the standard approach and one based on an averaged ABC approach. The values in this memo assume an Overfishing Limit (OFL) coefficient of variation (CV) of 60% is used, consistent with past SSC recommendations. Under the standard approach, the ABC would vary across 2020 and 2021. The 2020 ABC (16.82 million pounds/7,627 mt) would be 88% greater than the current interim 2020 ABC (8.94 million pounds/4,055 mt). The 2021 ABC (14.60 million pounds/6,620 mt) would be 13% lower than the revised 2020 ABC, but 63% higher than the current interim 2020 ABC. Under the averaged ABC approach, the 2020 and 2021 ABCs would be identical at 15.71 million pounds (7,124 mt) a 75% increase compared to the current interim 2020 ABC. Catch and landings limits resulting from both ABC approaches are shown in Table 1. As described in more detail on pages 12-13, there are tradeoffs to both ABC approaches. Staff recommend the standard (varying) ABC approach.

Consistent with prior year's Monitoring Committee recommendations, staff recommend no reduction from the commercial and recreational ACLs to the sector-specific ACTs account for management uncertainty; therefore, the commercial and recreational ACTs would be set equal to their respective ACLs for 2020 and 2021.

The 2020 and 2021 commercial quotas and RHLs which result from subtracting expected discards from the sector-specific ACTs represent notable increases from the 2019 and interim 2020 limits (54-77%, depending on the ABC approach and year, Table 1). Increased commercial quotas will allow for increased commercial landings; however, despite notable potential RHL increases, recreational harvest will likely need to be restricted compared to recent levels. For example, estimated 2018 recreational

[2] A prepublication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

harvest using the revised MRIP estimation methodology (7.92 million pounds/3,593 mt) was 22-31% higher than the potential revised 2020 RHL, and 31-41% higher than the potential 2021 RHL (depending on the ABC approach used). If 2019 harvest is similar to 2018 harvest, the 2020-2021 RHLs under either ABC approach will require more restrictive recreational bag limits, minimum fish sizes, and open seasons compared to recent years to prevent RHL overages.

It should be noted that the 2020 ABC under both the standard and averaged approach is high enough to accommodate 2018 levels of commercial and recreational catch accounting for the revised MRIP methodology (i.e., 15.33 million pounds/6,955 mt of total catch in 2018 compared to a 2020 ABC of 16.82 million pounds/7,627 mt or 15.71 million pounds/7,124 mt). Given this and the positive status of the stock, the need to restrict recreational harvest in 2020, while allowing a notable increase in commercial landings, is not based on a conservation concern, but rather on the Fishery Management Plan (FMP) requirement to allocate 49% of the landings portion of the ABC to the commercial fishery and 51% to the recreational fishery. These allocations were based on the proportion of landings by sector during 1983-1992. These sector allocations cannot be modified without an FMP amendment.

Staff do not recommend any changes to the current federal commercial management measures, including the minimum fish size, mesh size requirements and associated incidental possession limits, or pot/trap gear requirements for 2020.

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Table 1: Currently implemented 2019 and interim 2020 black sea bass catch and landings limits and potential 2020 (revised) and 2021 catch and landings limits based on the standard and averaged ABC approaches. The standard approach is recommended by staff. The calculations for the ABC discards and landings portions and the proportions of discards by sector are based on values provided with the 2019 operational stock assessment. All values assume an OFL CV of 60%.

Management measure	2019 and interim 2020		2020 (revised) and 2021, standard ABC approach				2020 (revised) and 2021, average ABC approach				Basis
			2020		2021		2020		2021		
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	
OFL	10.29	4,667	19.35	8,778	16.99	7,707	19.31	8,760	17.27	7,835	Stock assessment projections
ABC	**8.94**	**4,055**	**16.81**	**7,627**	**14.59**	**6,620**	**15.71**	**7,124**	**15.71**	**7,124**	Stock assessment projections and Council risk policy
ABC discards	1.76	799	4.11	1,864	3.57	1,618	3.84	1,741	3.84	1,741	24% of ABC, based on avg. 2016-2018 discards as % of catch
Projected com. discards	0.83	377	1.57	711	1.36	617	1.46	664	1.46	664	38% of ABC discards, based on avg. 2016-2018 % of discards by sector
Projected rec. discards	0.93	422	2.54	1,154	2.21	1,001	2.38	1,078	2.38	1,078	62% of ABC discards, based on avg. 2016-2018 % of discards by sector
Commercial ACL	4.35	1,974	7.79	3,534	6.76	3,068	7.28	3,301	7.28	3,301	49% of ABC landings portion + proj. com. discards
Commercial ACT	4.35	1,974	7.79	3,534	6.76	3,068	7.28	3,301	7.28	3,301	Set equal to the ACL, no deduction for management uncertainty
Commercial quota	**3.52**	**1,596**	**6.23**	**2,824**	**5.40**	**2,451**	**5.81**	**2,637**	**5.81**	**2,637**	Com. ACT minus projected com. discards
Recreational ACL	4.59	2,083	9.02	4,093	7.83	3,552	8.43	3,823	8.43	3,823	51% of ABC landings portion + proj. rec. discards
Recreational ACT	4.59	2,083	9.02	4,093	7.83	3,552	8.43	3,823	8.43	3,823	Set equal to the ACL, no deduction for management uncertainty
RHL	**3.66**	**1,661**	**6.48**	**2,939**	**5.62**	**2,551**	**6.05**	**2,745**	**6.05**	**2,745**	Rec. ACT minus projected rec. discards

Introduction

The Magnuson-Stevens Fishery Conservation and Management Act requires the Council's SSC to provide scientific advice for fishery management decisions, including recommendations on ABCs, prevention of overfishing, and achieving maximum sustainable yield (MSY). The SSC recommends ABCs that address scientific uncertainty. The Council's catch limit recommendations cannot exceed the ABCs recommended by the SSC.

The Monitoring Committee recommends management measures to achieve the SSC's recommended ABCs. Specifically, the Monitoring Committee recommends ACLs, ACTs, commercial quotas, RHLs, and management measures designed to achieve but not exceed the catch and landings limits.

Black sea bass are cooperatively managed by the Council and the ASMFC. The Council and the ASMFC's Summer Flounder, Scup, and Black Sea Bass Management Board meet jointly each year to consider SSC and Monitoring Committee recommendations, as well as Advisory Panel input, before deciding on proposed catch limits and other management measures. The Council and Board may set specifications for these three species for up to three years at a time. The Council and Board submit their recommendations to NMFS. NMFS reviews, implements, and enforces federal fisheries regulations.

Recent Catch and Landings

Commercial and recreational landings declined slightly from 2017 to 2018 (Table 2). According to dealer data, commercial fishermen landed 3.41 million pounds (1,550 mt) of black sea bass in 2018, about 97% of the commercial quota (3.52 million pounds/1,596 mt). According to the 2019 operational assessment,[3] commercial dead discards were 1.59 million pounds in 2018 (722 mt). As such, commercial removals (landings and dead discards) in 2018 totaled 5.11 million pounds (2,318 mt), 17% higher than the 2018 commercial ACL (4.35 million pounds/1,974 mt). The regulations for commercial black sea bass Accountability Measures for ACL overages do not require overage paybacks when the overage is due to higher than expected commercial discards and when biomass is above the biomass target, both of which were true for black sea bass in 2018.

According to the revised MRIP data, recreational fishermen from Maine through Cape Hatteras, NC harvested 7.92 million pounds (3,593 mt) of black sea bass in 2018. This estimate should not be compared to the 2018 RHL as the RHL did not account for the revised MRIP estimates. MRIP staff provided back-calculated estimates based on the old MRIP methodology which suggest that 3.82 million pounds (1,731 mt) of recreational black sea bass harvest would have been estimated for 2018 based on the old MRIP methodology. This is about 4% higher than the 2018 RHL (3.66 million pounds/1,661 mt). According to the 2019 operational assessment,[4] recreational dead discards totaled 2.30 million pounds in 2018 (1,044 mt). A rough estimate of recreational dead discards in "old MRIP units" can be calculated by dividing the value calculated through the assessment by 2.85, the average ratio of revised to old MRIP estimates during 2013-2017. This results in 806,892 pounds (366 mt) of recreational discards in "old MRIP units." This suggests that total 2018 recreational catch in old MRIP units was about 4.62 million pounds (2,097 mt) and exceeded the recreational ACL (4.59 million pounds/2,083 mt) by less

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[3] A prepublication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

[4] See previous footnote.

than 1%. Recreational catch (harvest and discards) in 2018 based on the new estimation methodology was estimated to be 10.22 million pounds (4,637 mt).

NMFS will perform separate 2018 ACL overage evaluations as part of the rulemaking for 2020-2021 specifications. The overage amounts calculated by NMFS may vary from those shown here.

As of August 10, about 2.11 million pounds of black sea bass had been landed by commercial fishermen in 2019, corresponding to 60% of the 2019 commercial quota (3.52 million pounds/1,596 mt, Table 3). Preliminary estimated recreational harvest through June 2019 totaled 1.71 million pounds based on the revised MRIP estimation methodology (Table 4). This recreational harvest estimate should not be compared to the 2019 RHL as that RHL was based on the 2016 stock assessment which was completed prior to the transition to the new MRIP estimation methodology.

Table 2: Black sea bass commercial and recreational landings relative to quotas and RHLs (in millions of pounds), 2014-2018. The RHL overage/underage evaluation is based on recreational harvest estimates using the old MRIP-estimation methodology.

Year	Com. landings	Com. quota	Quota overage/ underage	Rec. harvest (old MRIP estimates)	RHL	RHL overage/ underage	Rec. harvest (new MRIP estimates)
2014	2.18	2.17	0%	3.67	2.26	+62%	6.93
2015	2.46	2.21	+11%	3.79	2.33	+63%	7.82
2016	2.59	2.71	-4%	5.19	2.82	+84%	12.05
2017	3.99	4.12	-3%	4.16	4.29	-3%	11.48
2018	3.41	3.52	-3%	3.82	3.66	+4%	7.92

Table 3: 2019 black sea bass commercial landings by state through the week ending August 10, 2019 with data reported through August 14, 2019, according to preliminary data from NMFS weekly quota reports available at: https://www.greateratlantic.fisheries.noaa.gov/aps/monitoring/blackseabass.html.

State	Landings (lb)
ME	1
NH	300
MA	287,823
RI	304,888
CT	18,910
NY	162,985
NJ	371,500
DE	76,655
MD	259,801
VA	405,594
NC	227,025
Other	202
Total	**2,115,684**
2019 Commercial Quota	**3,520,000**
Percent of Quota Landed	**60%**

Table 4: Preliminary recreational black sea bass harvest estimates, waves 1-3 (January - June), 2019. (Source: personal communication, NMFS Fisheries Statistics Division, August 21, 2019; https://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/queries/index). These estimates should not be compared to the 2019 RHL as the 2019 RHL did not account for the new MRIP estimation methodology.

State	Harvest (lb)
ME	0
NH	0
MA	690,355
RI	15,153
CT	166,702
NY	135,165
NJ	586,821
DE	11,613
MD	67,412
VA	29,970
NC (north of Cape Hatteras)	3,353
Total	**1,706,544**

Stock Status and Biological Reference Points

A black sea bass operational stock assessment was peer reviewed and accepted in August 2019. This assessment retained the model structure of the previous benchmark stock assessment, completed in 2016,[5] and incorporated fishery data and fishery-independent survey data through 2018, including revised recreational data provided by MRIP for 1989-2018. The following information is based on the prepublication draft of the August 2019 operational assessment prepared for use by the Council and SSC.[6]

As with the 2016 benchmark assessment, the 2019 operational assessment has a regional structure. The stock was modeled as two separate sub-units (north and south) divided at approximately Hudson Canyon. Each sub-unit was modeled separately and the average F and combined biomass and SSB across sub-units were used to develop stock-wide reference points. As with the 2016 benchmark assessment, the peer reviewers of the 2019 operational assessment concluded that "although the two-area model had a more severe retrospective pattern in opposite directions in each area sub-unit than when a single unit was assumed, it provides reasonable model estimates after the retrospective corrections and combining the two spatial units. Thus, even though reference points are generated and stock status determinations are conducted for each subunit, the combined projections should be used."

Due to the lack of a stock/recruit relationship, a direct calculation of MSY and associated reference points (F and SSB) was not feasible and proxy reference points were used. SSB calculations and SSB reference points account for mature males and females. Due to the addition of a second selectivity time block for the non-trawl fleet in the 2019 operational assessment (1989-2008 and 2009-2018, compared to 1989-2015 in the 2016 benchmark assessment), the age at full selection changed from 4-7 in the 2016

[5] 62nd Northeast Stock Assessment Workshop (2016) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html
[6] Available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

benchmark assessment to 6-7 in the 2019 operational assessment. The reference points and terminal year SSB and F estimates from the 2016 benchmark assessment and 2019 operational assessment are shown in Table 5.

A comparison of the 2018 SSB and F estimates to the reference points suggests that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2018. SSB in 2018 was estimated at 73.65 million pounds (33,407 mt, adjusted for retrospective bias), 2.4 times the updated biomass reference point (i.e., $SSB_{MSY\ proxy} = SSB_{40\%}$=31.07 million pounds/14,092 mt). The average fishing mortality rate on fully selected ages 6-7 fish in 2018 was 0.42 (adjusted for retrospective bias), 91% of the updated fishing mortality threshold reference point (i.e., $F_{MSY\ proxy} = F_{40\%}$ = 0.46; Table 5). The 2018 estimates of F and SSB were adjusted for internal model retrospective error (Figure 1). Figure 2 and Figure 3 show the time series of estimated SSB, recruitment, fishing mortality, and catch without retrospective adjustments.

The 2011 year class was estimated to be the largest in the time series at 144.7 million fish. The 2015 year class was the second largest at 79.4 million fish. Recruitment of the 2017 year class as age 1 in 2018 was estimated at 16.0 million, well below the 1989-2018 average of 36 million fish (Figure 2).

Table 5: Black sea bass biological reference points from the 2016 benchmark stock assessment and 2019 operational stock assessment.

Reference Points and terminal year SSB and F estimates	**2016 benchmark stock assessment**[7] Data through 2015	**2019 operational stock assessment**[8] Data through 2018
$SSB_{MSY\ proxy} = SSB_{40\%}$ (biomass target)	21.31 mil lb / 9,667 mt	31.07 mil lb / 14,092 mt
½ SSB_{MSY} (biomass threshold defining an overfished status)	10.66 mil lb / 4,834 mt	15.53 mil lb / 7,046 mt
Terminal year SSB	48.89 mil lb / 22,176 mt (2015) Adjusted for retrospective bias 230% of SSB_{MSY}	73.65 mil lb / 33,407 mt (2018) Adjusted for retrospective bias 240% of SSB_{MSY}
$F_{MSY\ proxy} = F_{40\%}$ (threshold defining overfishing)	0.36	0.46
Terminal year F	0.27 (2015) Adjusted for retrospective bias Fully selected ages 4-7 25% below F_{MSY}	0.42 (2018) Adjusted for retrospective bias Fully selected ages 6-7 9% below F_{MSY}

[7] 62nd Northeast Stock Assessment Workshop (2016) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html

[8] A prepublication copy of the August 2019 operational stock assessment report is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

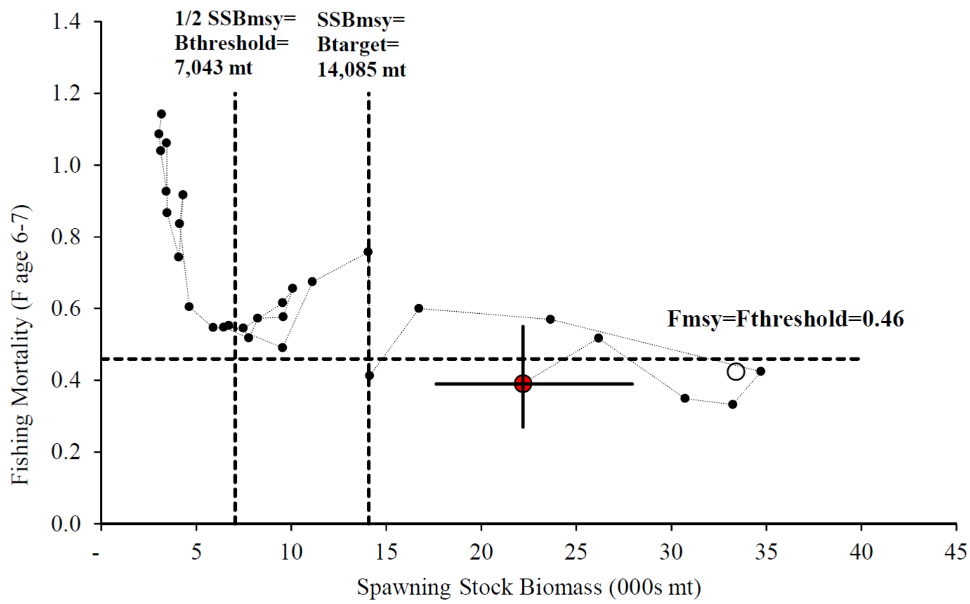

Figure 1: Estimates of black sea bass spawning stock biomass and fully-recruited fishing mortality relative to the updated biological reference points from the 2019 operational stock assessment. The red filled circle with 90% confidence intervals shows the un-adjusted 2018 estimates. The open circle shows the retrospectively adjusted estimates for 2018. (Source: prepublication copy of the August 2019 operational stock assessment report dated 9/4/2019.)

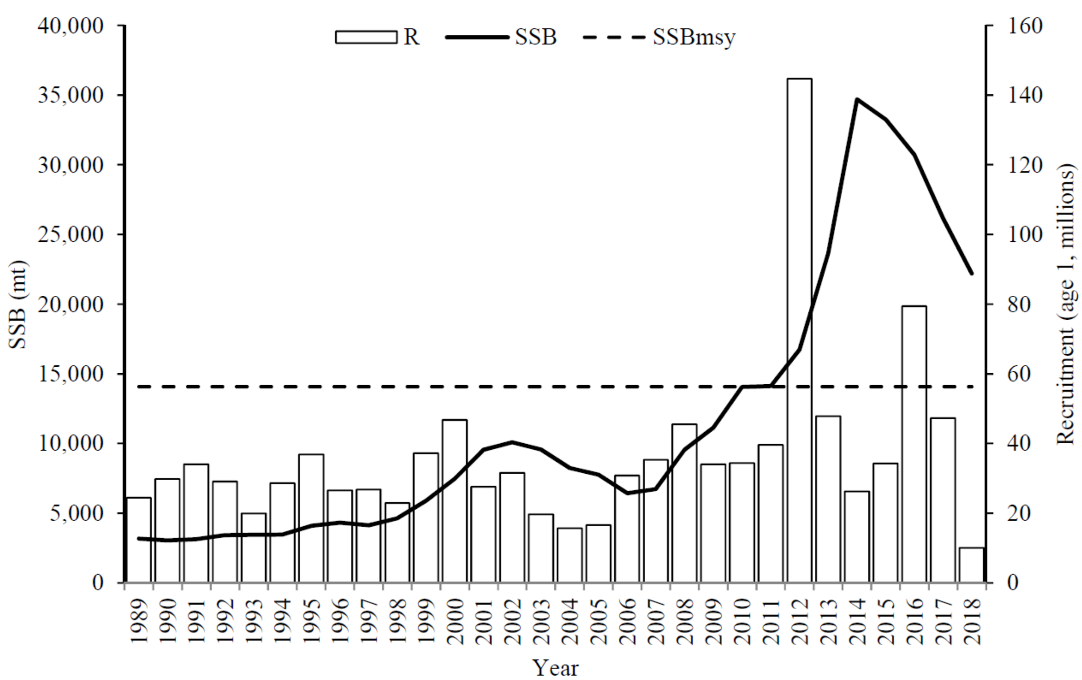

Figure 2: Black sea bass SSB and recruitment, 1989-2018 from the 2019 operational stock assessment. The horizontal dashed line is the updated biomass reference point. (Source: prepublication copy of the August 2019 operational stock assessment report dated 9/4/2019.)

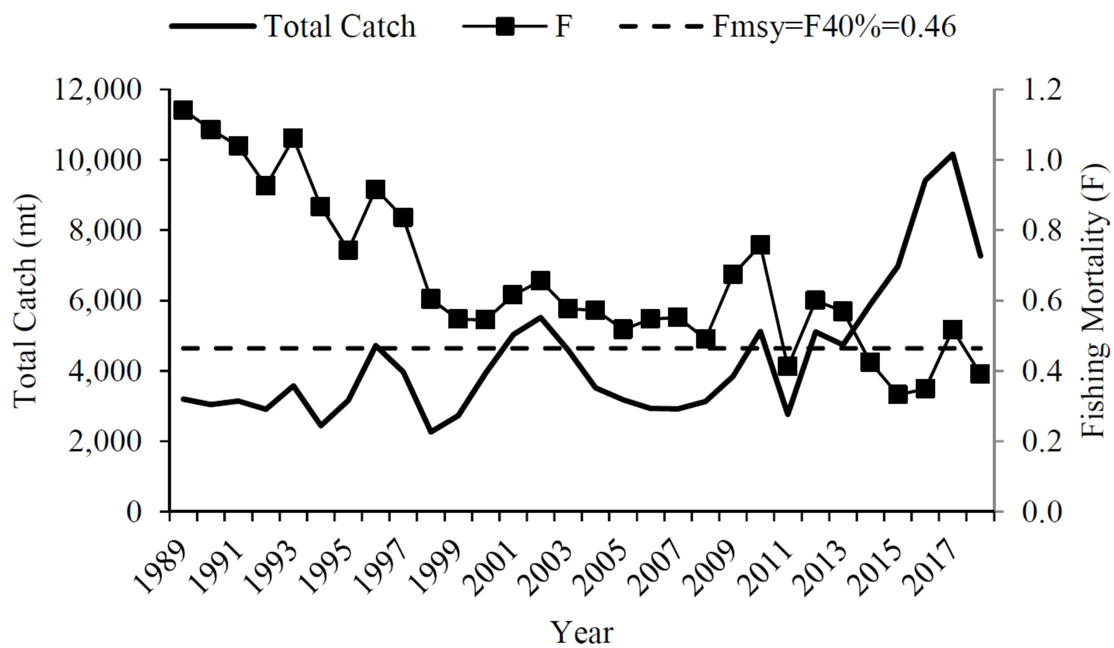

Figure 3: Total black sea bass catch and fishing mortality, 1989-2018, from the 2019 operational stock assessment. (Source: prepublication copy of the August 2019 operational stock assessment report dated 9/4/2019.)

Review of Prior SSC Recommendations

The SSC reviewed the 2016 benchmark stock assessment and recommended ABCs for 2017-2019 during their January 2017 meeting. They recognized substantial improvements compared to previous assessments and accepted the OFL estimates from the assessment for management use. They considered relevant sources of uncertainty in the OFL and applied an OFL coefficient of variation (CV) of 60%. The 2016 benchmark assessment conducted a thorough analysis and simulation testing of the protogynous hermaphroditic life history of black sea bass. Based on this, the SSC concluded that no additional buffer for an atypical life history should be applied under the Council's ABC risk policy; therefore, a 40% probability of overfishing was used in combination with the 60% OFL CV to derive ABCs for 2017-2019.[9]

The SSC considered the following to be the most significant sources of uncertainty associated with the OFLs and ABCs derived from the 2016 benchmark stock assessment:

- The natural mortality rate used in the assessment — because of the protogynous hermaphroditic life history of black sea bass, the assumption of a constant natural mortality rate for both sexes may not adequately capture the dynamics in natural mortality;
- 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.

In July 2018, the SSC reviewed their previously recommended 2019 ABC. They noted that fishery and survey catch, landings, and discards through 2017 showed evidence of an above average 2015 year

[9] A summary of the January 2017 SSC meeting is available at: http://www.mafmc.org/ssc-meetings/2017/jan-25

class. Their previously recommended 2019 ABC did not account for this year class as this information had not been incorporated into a stock assessment or biomass projections. Without an updated assessment or biomass projections, the SSC agreed that they could not justify revisions their previous OFL and ABC recommendations to account for the 2015 year class. As such, they recommended no changes to their previously recommended 2019 ABC of 3,617 mt (7.97 million pounds).[10]

The Council and Board adopted the SSC's 2019 ABC recommendation; however, NMFS implemented a slightly higher 2019 ABC based on a sensitivity analysis of various recruitment scenarios which was not available prior to SSC, Council, or Board decision making in 2018.[11]

2020-2021 OFL and ABC Projections

Table 6 and Table 7 show projected ABCs based on the standard and averaged approaches, respectively. In Table 6, the value for ABC total catch in 2019 is the assumed 2019 catch calculated based on an adjustment to the ABC implemented by NMFS for 2019. It was assumed that the implemented 2019 ABC would be fully caught; however, the expected recreational contribution to that catch was adjusted to account for the fact that the ABC implemented for 2019 did not incorporate the revised MRIP estimates. The expected recreational contribution to the ABC implemented for 2019 was multiplied by 2.85, the average ratio of revised to old MRIP estimates for 2013-2017. This resulted in an expected 2019 total catch of 7,917 mt (17.45 million pounds). In Table 7, the ABC total catch value for 2019 is calculated based on an OFL at F_{MSY} and a 40% probability of overfishing.

The OFL total catch values in the tables below are catches in each year fishing prior to calculation of the associated annual ABC. The projections were made separately for the northern and southern sub-units at F_{MSY}=0.46, then combined for total OFL and ABC calculations. Recruitment was sampled from the estimates for 2000-2018. The Council's ABC risk policy for a stock with a typical life history was applied, resulting in an ABC p* (i.e., probability of overfishing) of 40%. A CV of 60% was applied to the OFL, consistent with past SSC recommendations. During their September 2019 meeting, the SSC will discuss the appropriate OFL CV and may apply a different value.

Table 6: 2020-2021 OFL and ABC projections based on the standard ABC approach. See text above for more information. Note: 2019 ABC total catch represents expected catch in 2019, not the implemented 2019 ABC. (Source: personal communication, Gary Shepherd, Northeast Fisheries Science Center.)

Year	**OFL total catch**		**ABC total catch**		**ABC F**	**ABC p***	**SSB**	
	MT	Mil. lb	MT	Mil. lb			MT	Mil. lb
2019	--	--	7,917	17.45	0.33	--	27,629	60.91
2020	8,778	19.35	7,627	16.81	0.39	0.4	22,661	49.96
2021	7,707	16.99	6,620	14.59	0.39	0.4	21,119	46.56

[10] A summary of the July 2018 SSC meeting is available at: http://www.mafmc.org/ssc-meetings/2018/july-17-18

[11] More information is available in the Federal Register notice implementing the final rule for 2019 black sea bass specifications (89 FR 64482, 12/17/2018), available at: https://www.federalregister.gov/documents/2018/12/17/2018-27213/fisheries-of-the-northeastern-united-states-summer-flounder-scup-and-black-sea-bass-fisheries-2019

Table 7: 2020-2021 OFL and ABC projections based on the averaged ABC approach. Note: 2019 ABC total catch represents expected catch in 2019, not the implemented 2019 ABC. (Source: personal communication, Gary Shepherd, Northeast Fisheries Science Center.)

Year	**OFL total catch**		**ABC total catch**		**ABC F**	**ABC p***	**SSB**	
	MT	Mil. lb	MT	Mil. lb			MT	Mil. lb
2019	--	--	8,736	19.26	0.4	--	27,885	61.48
2020	8,760	19.31	7,124	15.71	0.32	0.33	22,930	50.55
2021	7,835	17.27	7,124	15.71	0.32	0.43	21,746	47.94

Staff Recommendations for 2020-2021 ABCs

The SSC has been asked to recommend two sets of ABCs for 2020-2021, one based on the standard approach and one based on the averaging approach. The Council and Board will decide on the preferred approach.

The averaged ABC approach would allow for stable catch and landings limits across two years and would allow for a higher 2021 ABC than the standard approach (Table 1); however, it would require a lower 2020 ABC than under the standard approach. There is a 3% difference in estimated SSB in 2021 between the two approaches (Table 6 and Table 7).

Under the standard approach, the revised 2020 ABC (16.82 million pounds/7,627 mt) would be 88% greater than the 2019 and interim 2020 ABC (which are identical at 8.94 million pounds/4,055 mt). The ABC would then decrease by 13% in 2021 (to 14.60 million pounds/6,620 mt). Under the averaged ABC approach, the 2020 and 2021 ABCs would be identical at 15.71 million pounds (7,124 mt), a 76% increase compared to the 2019 and interim 2020 ABC (Table 1).

Although both approaches will allow for notable increases compared to past ABCs, this will not necessarily translate into socioeconomic benefits for all sectors of the fishery. As shown in Table 1, the 2020 and 2021 commercial quotas and RHLs have the potential to increase by 54-77% compared to the 2019 and interim 2020 limits depending on the ABC approach and the year. Increased commercial quotas will allow for increased commercial landings; however, recreational harvest will need to be restricted compared to recent levels to prevent an RHL overage, even under potential 54-77% increases in the RHL. This is due to the fixed allocation percentages defined in the FMP and the revisions to the MRIP data which show much higher recreational harvest than previously estimated. It should be noted that the 2020 ABC under both the standard and averaged approach is high enough to accommodate 2018 levels of commercial and recreational catch accounting for the revised MRIP methodology (i.e., 15.33 million pounds/6,955 mt of total catch in 2018 compared to a 2020 ABC of 16.82 million pounds/7,627 mt or 15.71 million pounds/7,124 mt). Recreational harvest in 2019 may differ from 2018 and cannot be reliably predicted with currently available data (i.e., preliminary data through June 2019).

The standard ABC approach will allow for a higher ABC in 2020 than the averaged approach; therefore, it will require less of a restriction on the recreational fishery in 2020 compared to the averaged approach. However, it will require greater restrictions in 2021 compared to the averaged approach. Both approaches have the potential for disproportionately negative socioeconomic impacts to the recreational sector compared to the commercial sector resulting from the combination of the new MRIP data and the fixed allocation percentages in the FMP.

Given the potential impacts to the recreational sector, the standard ABC approach is recommended by staff over the averaged approach in anticipation of potential future modifications to the 2021 RHL. For example, the Council is considering revisions to their ABC risk policy through a framework action. Final action is expected in December 2019, with potential implementation in 2020. In addition, the Council and Board may initiate a management action to consider revising the 49% commercial and 51% recreational allocation specified in the FMP; however, it is unlikely that changes to the sector allocations will be implemented in time to impact 2021 specifications.

Updated estimates of SSB, F, and recruitment are expected to be available in 2021 to inform 2022-2023 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 2021 catch and landings limits will be updated in 2020 based on biological, fishery, or survey data.

Other Management Measures

Recreational and Commercial ACLs

Based on the allocation percentages defined in the FMP, 49% of the total allowable landings (i.e., the proportion of the ABC that is expected to be landed as opposed to discarded) are allocated to the commercial fishery and 51% to the recreational fishery. These allocations are combined with expected commercial and recreational discards to calculate sector-specific ACLs.

The ABC landings allocation percentages were implemented through Amendment 9 (1996) and first came into effect in 1998. These allocations were based on the proportions of commercial and recreational landings during 1983-1992. As shown in Figure 4, these percentages do not reflect the current understanding of the proportion of catch and landings from the commercial and recreational sectors based on the 2019 operational assessment, which incorporated the revised time series of MRIP data. Because these allocation percentages are defined in the FMP, they cannot be modified without an FMP action such as an amendment.

The methodology to calculate ABC landings and discards portions and sector-specific discards is not prescribed in the FMP and can be modified by the Monitoring Committee on an annual basis. Typically, the ABC landings and discards portions are calculated based on the average proportion of total catch that was landed and discarded during the most recent three years for which information is available. Expected commercial and recreational discards are calculated by applying the most recent three year average of total discards by sector to the ABC discards portion (Table 1). This requires the assumption that patterns in landings and discards will be similar in future years as in past years. Changes in regulations, availability, year class strength, market demand, and other factors can impact patterns in landings and discards from one year to the next. For example, the potential increase in the commercial quota from 2019 to 2020 could result in a lower proportion of commercial discards in 2020. As previously stated, the potential increase in the RHL will likely require restrictions on the recreational fishery compared to 2019 due to the changes in the MRIP data and the fixed allocation percentages in the FMP. This could increase the proportion of discards in the recreational sector. The Monitoring Committee should discuss the methodology for calculating expected discards during their September 2019 meeting.

The staff recommendation for the standard ABC approach and the discard projection methodology described above result in a revised 2020 commercial ACL of 7.79 million pounds (3,534 mt) and a revised 2020 recreational ACL of 9.02 million pounds (4,093 mt). They result in a 2021 commercial ACL of 6.76 million pounds (3,068 mt) and a 2021 recreational ACL of 7.83 million pounds (3,552 mt, Table 1).

The averaged ABC approach and the discard projection methodology described above result in 2020 and 2021 commercial ACLs of 7.28 million pounds (3,301 mt) and 2020 and 2021 recreational ACLs of 8.43 million pounds (3,823 mt, Table 1).

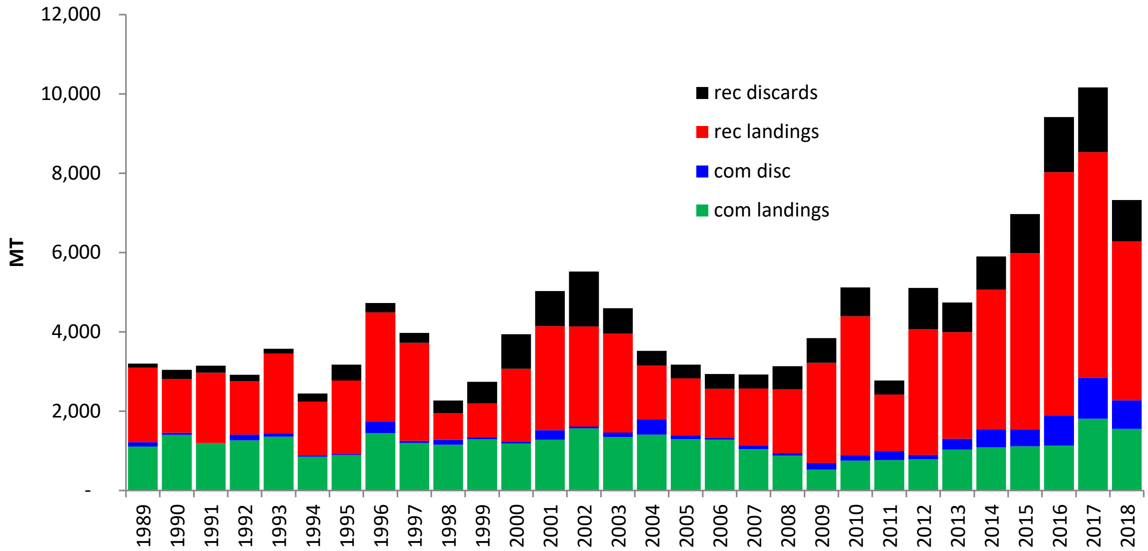

Figure 4: Total black sea bass catch (mt), 1989-2018. Recreational landings and discards are based on the revised MRIP estimation methodology. Values should not be compared to the catch and landings limits in those years as those catch and landings limits did not account for the revised MRIP estimation methodology. (Source: personal communication, Gary Shepherd, Northeast Fisheries Science Center.)

Recreational and Commercial ACTs

ACTs are set less than or equal to the sector-specific ACLs to account for management uncertainty (Figure 5). 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 considers all relevant sources of management uncertainty in the black sea bass fishery when recommending ACTs.

Commercial landings have generally been near the commercial quotas for most of the past five years (2014-2018, Table 2). The commercial quota monitoring system is timely and typically successful in constraining landings to the commercial quota. In contrast, the recreational fishery exceeded the RHL in several recent years, with substantial overages prior to 2017 (based on the old MRIP data, Table 2). It should be noted that the revised time series of MRIP data was released in July 2018 and was first incorporated into a stock assessment in August 2019; therefore, past RHLs did not account for these revised estimates. Past RHLs should not be compared against the revised estimates. In addition, the

Monitoring Committee has noted that these recreational overages occurred when the stock was rapidly expanding and availability to anglers was very high. At the same time, due to the lack of an approved stock assessment prior to 2017, the RHLs were set at levels not reflective of the large and increasing stock abundance. Analysis using the 2016 stock assessment indicated that RHLs during the few years prior to 2017 would have been approximately double those implemented if they had been set using the new assessment model, and overages would likely not have occurred to the same degree.

In recent years, the Monitoring Committee and the ASMFC's Technical Committee have been working to develop new and alternative methodologies to evaluate management uncertainty in the recreational fishery, the predictability and uncertainty in recreational catch estimates, and the influence of recreational regulations on harvest. These Committees plan to continue to work to make improvements to the evaluation process for recreational measures.

Consistent with previous Monitoring Committee recommendations, staff recommend no reduction from the 2020-2021 recreational or commercial ACLs to account for management uncertainty, such that each sector's ACT is set equal to the ACL.

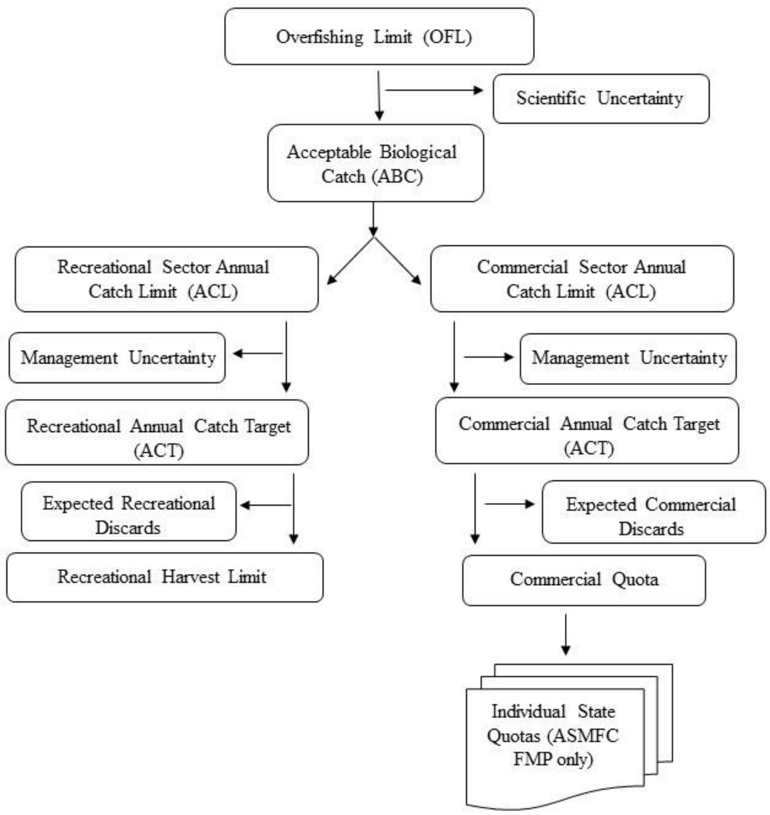

Figure 5: Flowchart for black sea bass catch and landings limits.

Commercial Quotas and Recreational Harvest Limits

Projected discards are subtracted from the sector-specific ACTs to derive annual commercial quotas and RHLs. As previously stated, expected commercial and recreational discards are typically calculated by applying the most recent three year average of total discards by sector to the ABC discards portion (Table 1). This requires the assumption that patterns in landings and discards will be similar in future years as in past years. Changes in regulations, availability, year class strength, market demand, and other factors can impact patterns in landings and discards from one year to the next. For example, the potential increase in the commercial quota from 2019 to 2020 could result in a lower proportion of commercial discards in 2020. The potential increase in the RHL will likely require restrictions on the recreational fishery compared to 2019 due to the changes in the MRIP data and the fixed allocation percentages in the FMP. This could increase the proportion of discards in the recreational sector. The Monitoring Committee should discuss the methodology for calculating expected discards during their September 2019 meeting.

Data provided with the 2019 operational stock assessment suggest that 38% of total discards during 2016-2018 were attributable to the commercial fishery and 62% to the recreational fishery. The proportion attributable to the recreational fishery increased compared to previous years (e.g., 53% during 2015-2017 based on data available in 2018). This is due in part to the revisions to the MRIP data which suggest that recreational catch, harvest, and discards are higher than previously estimated.

The standard ABC approach and the discard projection methodology described above result in a revised 2020 commercial quota of 6.23 million pounds (2,824 mt) and a revised 2020 RHL of 6.48 million pounds (2,939 mt). These represent increases of 77% compared to the 2019 and interim 2020 commercial quota and RHL. The resulting 2021 commercial quota is 5.40 million pounds (2,451 mt) and the resulting 2021 RHL is 5.62 million pounds (2,551 mt). These represent increases of 54% compared to the 2019 and interim 2020 commercial quota and RHL, but decreases of 13% compared to the revised 2020 commercial quota and RHL under this approach (Table 1).

The averaged ABC approach and the discard projection methodology described above result in a 2020 and 2021 commercial quota of 5.81 million pounds (2,637 mt) and a revised 2020 RHL of 6.05 million pounds (2,745 mt). These represent increases of 65% compared to the 2019 and interim 2020 commercial quota and RHL (Table 1).

As described above, the increase in the commercial quota under either approach will allow for increased commercial landings; however, the increased RHLs will require restrictions in the recreational fishery as the increased RHLs are lower than the revised MRIP estimates for recreational harvest in recent years.

Commercial Gear Regulations and Minimum Fish Size

Amendment 9 (1996) established a minimum fish size of 9 inches total length. The commercial minimum fish size was increased to 10 inches in 1998, and to 11 inches in 2002. The 11-inch minimum size has remained unchanged since 2002.

Amendment 9 also established gear regulations that became effective in December 1996 and were modified in 1998 and again in 2002. Current regulations, unchanged since 2002, state that trawl vessels whose owners have a black sea bass moratorium permit and 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.

The Council and ASMFC adopted modifications to the circle vent size in black sea bass pots/traps, effective in 2007, based on the findings of a Council and ASMFC sponsored workshop. The minimum circle vent size requirements for black sea bass pots/traps were increased from 2.375 inches to 2.5

inches. The requirements of 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.

In the fall of 2015, the Council and ASMFC's Monitoring and Technical Committees conducted a thorough review of the commercial management measures which can be modified through specifications.[12] The committees, and subsequently the Council and Board, indicated that further exploration of some measures may be justified. Specifically, for black sea bass, this included assessing the feasibility of a common minimum mesh size for summer flounder, scup, and black sea bass, as well as summarizing past studies on mesh sizes and pot/trap configuration requirements for all three species. Stemming from this discussion, the Council funded a project which analyzed the selectivity of multiple codend mesh sizes relative to summer flounder, black sea bass and scup retention in the commercial bottom trawl fisheries. Results confirmed that the current minimum mesh sizes for all three species are effective at releasing most fish smaller than the commercial minimum sizes (i.e., 14 inches total length for summer flounder, 9 inches total length for scup, and 11 inches total length for black sea bass). The study was not able to identify a common mesh size for all three species that would be effective at minimizing discards under the current minimum fish 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.[13]

The Monitoring Committee reviewed the results of this study in 2018 and recommended no changes to the commercial minimum mesh sizes for 2019. They recommended clarification of the Council's objectives regarding consideration the mesh sizes (e.g., establishing a common minimum mesh size, minimizing discards, and/or maintaining or increasing catches of legal-sized fish). Input from the commercial fishing industry should be sought before any minimum mesh size changes are considered.

Staff will continue to work with the Monitoring Committee and Advisory Panel in 2019 to further analyze and consider potential changes to mesh size regulations. At this time, staff recommend no changes to the commercial gear regulations and commercial minimum fish size for 2020.

Recreational Management Measures

In 2018 and 2019, the Council and ASMFC provided states the opportunity to open their recreational black sea bass fisheries during the month of February under specific conditions. States were required to opt in to this fishery. Participating states were required to have a 12.5 inch minimum fish size limit and a 15 fish possession limit during February 2018 and 2019 (identical to the federal recreational measures during May 15 - December 31). Participating states were required to adjust their recreational management measures during the rest of the year to account for expected February harvest to help ensure that the coast-wide RHL was not exceeded. Expected February harvest by state was pre-defined based on an analysis of vessel trip report data from federally permitted for-hire vessels in February 2013, the last year that the recreational fishery was open in February prior to 2018.

Only North Carolina and Virginia opted to open their recreational black sea bass fisheries in February 2018 and 2019. No black sea bass were harvested in North Carolina in February 2018. An estimated 55

[12] The summary report is available at: http://www.mafmc.org/s/Tab11_SF-S-BSB-Commercial-Measures.pdf.
[13] 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

pounds of black sea bass were landed by recreational fishermen in North Carolina in February 2019. It was estimated that 4,826-5,206 pounds of black sea bass were landed by recreational fishermen in Virginia in February 2018 and 10,082 pounds were landed in Virginia in 2019.

During their joint meeting in October 2019, the Council and Board will consider providing states the opportunity to open their recreational fisheries in February 2020 under the same conditions as in 2018 and 2019. Changes to these conditions, including modifications of the expected levels of February harvest by state based on the new MRIP data, cannot be made in time to impact the 2020 fishery. Changes may be considered for the 2021 February recreational fishery.

Other management measures used to achieve 2020 RHL (i.e., the bag, size, and season limits for the rest of 2020) will be considered after the first four waves (i.e., January - August) of preliminary 2019 recreational harvest data are available (expected October 2019). The Monitoring Committee will meet in November 2019 to review these data and make recommendations regarding any necessary changes in the recreational possession limits, minimum sizes, and seasons.

Black Sea Bass Fishery Information Document

August 2019

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 2018. Data sources include unpublished National Marine Fisheries Service (NMFS) fisheries-independent trawl survey data, commercial fish dealer reports, vessel trip reports (VTRs), permit data, and Marine Recreational Information Program (MRIP) data. All data should be considered preliminary. For more resources on black sea bass management, including previous Fishery Information Documents, please visit http://www.mafmc.org/sf-s-bsb.

Key Facts

- Black sea bass is not overfished and overfishing is not occurring. In 2015 (the most recent year for which peer reviewed and approved stock status information is available), spawning stock biomass was more than double the target level and fishing mortality was 25% below the threshold level which defines overfishing. An updated stock assessment was peer reviewed in August 2019; however, final results from that peer review are not currently available.
- About 3.41 million pounds of black sea bass were landed by commercial fishermen in 2018. In 2018, commercial fish dealers paid an average of $3.49 per pound for black sea bass.
- Recreational fishermen harvested an estimated 7.92 million pounds of black sea bass in 2018, mostly from private vessels.

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 black sea bass 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 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.[1,2]

Black sea bass are protogynous hermaphrodites, meaning they are born female and some later transition to males, usually around 2-5 years of age. Male black sea bass are either of the dominant or subordinate type. Dominant males are larger than subordinate males and develop a bright blue nuccal hump during the spawning season. About 25% of black sea bass are male at 15 cm (about 6 inches), with increasing proportions of males at larger sizes until about 50 cm, when about 70-80% of black sea bass are male. Results from a simulation model highlight the importance of subordinate males in the spawning success of this species. 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.[2, 3]

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 consists of pelagic waters, structured habitat, rough bottom, shellfish, sand, and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Juvenile and adult black sea bass 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.[1]

Status of the Stock

A benchmark stock assessment for black sea bass was peer-reviewed and approved in December 2016. An updated stock assessment model was peer reviewed in early August 2019; however, final results from that assessment were not available at the time of writing this document. The protogynous life history, structure-orienting behavior, and potential spatial stock structure of black sea bass posed challenges for previous analytical assessments of this species, resulting in several prior assessments not being approved for management use. The 2016 benchmark stock assessment was successful in evaluating and addressing many of these concerns and subsequently was approved through a peer review process.

The 2016 benchmark assessment indicated that the stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2015, the terminal year of the assessment. Spawning stock biomass (SSB; i.e., mature female and male biomass) averaged around 6 million pounds from the late 1980's and early 1990's and then steadily increased from 1997 to 2002 when it reached 18.7 million pounds. SSB then declined until 2007 (8.9 million pounds), followed by a steady increase through 2015 with SSB at its highest estimated level (Figure 1). SSB in 2015 was 48.89 million pounds (22,176 mt), 2.3 times SSB at maximum sustainable yield, SSB_{MSY} = 21.31 million pounds (9,667 mt).[2]

The fishing mortality rate (F) in 2015 was 0.27, 25% below the fishing mortality threshold reference point that defines overfishing ($F_{MSY\ proxy} = F_{40\%} = 0.36$; Figure 2). Fishing mortality was very high in the early 1990's but declined and stabilized after 1997 once joint management by the Mid-Atlantic Fisheries Management Council (Council) and Atlantic States Marine Fisheries Commission (Commission) began. Fishing mortality has been below the F reference point since 2011.[2]

Recruitment was relatively constant during 1989-2015, with the exception of large spikes from the 1999 and 2011 year classes (i.e., fish spawned in those years). The 1999 year class was estimated at 37.3 million fish. The 2011 year class was estimated at 68.9 million fish, nearly three times the 1989-2015 average. The 2011 year class had a major impact on recent stock dynamics and was much more prevalent in the states of Massachusetts through New York compared to New Jersey and south.[2]

Final peer reviewed and approved estimates of SSB, fishing mortality, and recruitment after 2015 are not available at this time. Fishery and fishery-independent survey data through 2017 indicate that biomass continues to be high and the 2015 year class appears to be above average both in northern areas (ME-NY) and southern areas (NJ-NC).[4]

Black sea bass recently underwent an operational assessment for use in management for 2020 and beyond and will be final by the end of August. The assessment will include the revised MRIP values and is expected to change the current biological reference points and estimated biomass and fishing mortality. New assessment information was not available during the development of this fishery information document.

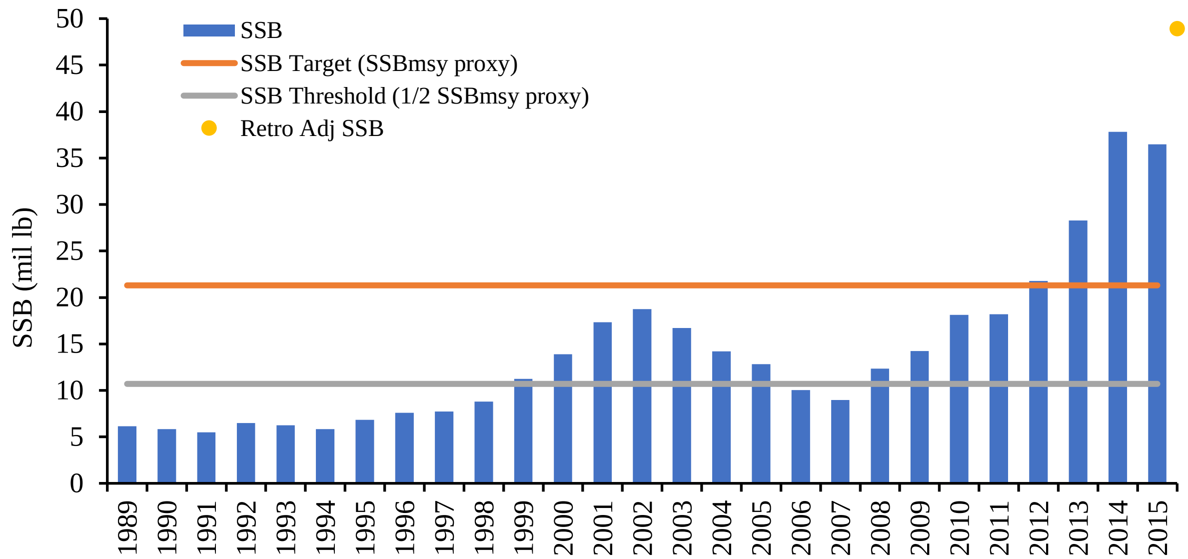

Figure 1: Black sea bass spawning stock biomass, 1989 - 2015, and biomass reference points from the 2016 benchmark stock assessment. The 2015 retro-adjusted spawning stock biomass value was generated to correct for retrospective bias in the assessment model and is used as the estimate to compare to the reference points.[2]

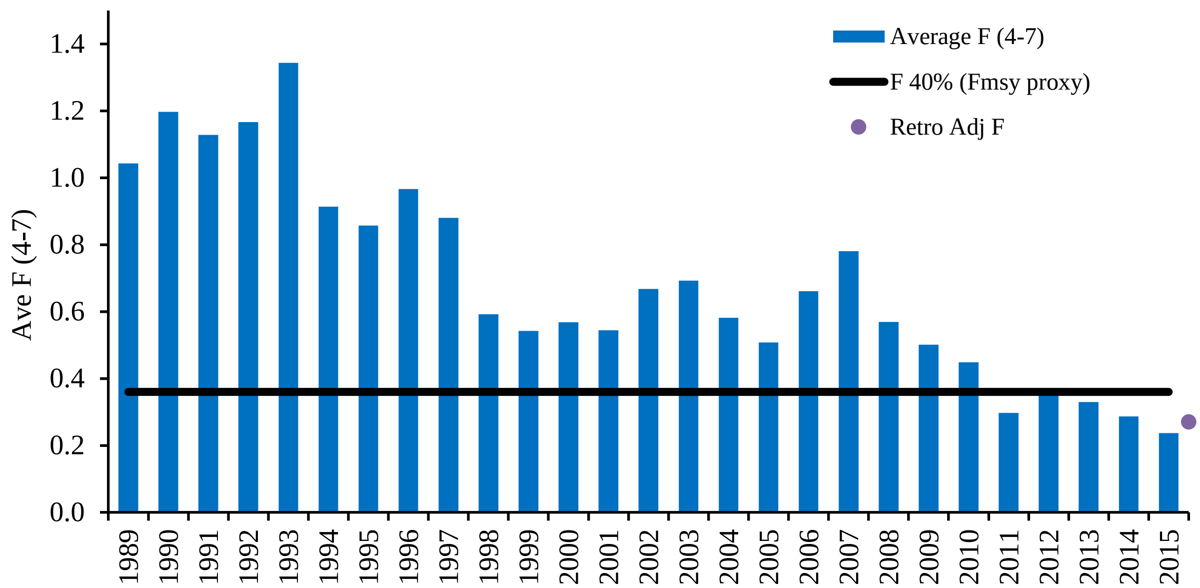

Figure 2: Fishing mortality rate on black sea bass ages 4-7 and the FMSY PROXY reference point from the 2016 benchmark stock assessment. The 2015 retro-adjusted fishing mortality rate was generated to correct for retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.[2]

Management System and Fishery Performance

Management

The Council and the 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 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 waters (0-3 miles offshore) and federal waters (3-200 miles offshore). This 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 frameworks 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, commercial quotas, recreational harvest limits (RHLs), minimum fish sizes, open and closed seasons, gear regulations, permit requirements, and other provisions.

The Council's Scientific and Statistical Committee recommends annual Acceptable Biological Catch (ABC) levels for black sea bass. The Council and Commission must either approve the ABC recommended by the Scientific and Statistical Committee or approve a lower ABC. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the landings allocations prescribed in the FMP (i.e., 49% commercial, 51% recreational) and the recent distribution of discards between the commercial and recreational fisheries. The Council first implemented recreational and commercial ACLs, with a system of overage accountability, in 2012.

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 RHL are landing limits. The commercial quota and RHL are calculated by subtracting expected discards from the respective ACTs.

Table 1 shows black sea bass catch and landings limits from 2009 through 2019, as well as commercial and recreational landings through 2018. Total landings (commercial and recreational) peaked in 2017, when approximately 15.5 million pounds of black sea bass were landed. About 11.3 million pounds of black sea bass were landed by commercial and recreational fishermen from Maine through Cape Hatteras, North Carolina in 2018 (Figure 3).[5,6]

Recreational data are available from MRIP. 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, including 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, substantially raising the overall black sea bass catch and harvest estimates, as shown on page 13. The RHLs and other management measures through 2019 were based on the previous MRIP estimates. Once the revised estimates are incorporated into a peer reviewed and accepted stock assessment (expected August 2019), they will be used to derive RHLs and other management measures for future years.

Table 1: Summary of catch and landings limits, and landings for commercial and recreational black sea bass fisheries from Maine through Cape Hatteras, NC 2009 through 2019. All values are in millions of pounds unless otherwise noted.

Management measure	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ABC	--	4.50	4.50	4.50	5.50	5.50	5.50	6.67	10.47	8.94	8.94
Commercial ACL	--	--	--	1.98	2.60	2.60	2.60	3.15	5.09	4.35	4.35
Commercial quota[a]	1.09	1.76	1.71	1.71	2.17	2.17	2.21	2.71	4.12	3.52	3.52
Commercial landings	1.18	1.68	1.69	1.72	2.40	2.18	2.46	2.59	3.99	3.41	--
% of commercial quota landed	108%	95%	99%	101%	111%	100%	111%	96%	97%	97%	--
Recreational ACL	--	--	--	1.86	2.90	2.90	2.90	3.52	5.38	4.59	4.59
RHL[a]	1.14	1.83	1.78	1.32	2.26	2.26	2.33	2.82	4.29	3.66	3.66
Recreational landings, previous MRIP estimates	2.56	3.19	1.17	3.18	2.46	3.67	3.79	5.19	4.16	3.82	--
% of RHL harvested (based on previous MRIP estimates)[b]	225%	174%	66%	241%	109%	162%	163%	184%	97%	104%	--
Recreational landings, revised MRIP estimates	5.70	8.07	3.27	7.04	5.68	6.93	7.82	12.05	11.48	7.92	--

[a] The commercial quotas and RHLs for 2006-2014 account for deductions for the Research Set Aside program.

[b] The percent of RHL harvested is based on a comparison of the RHL to the previous or old MRIP estimates. The RHLs did not account for the new MRIP estimates, which were released in July 2018 and were not incorporated into a stock assessment until 2019; therefore, it would be inappropriate to compare past RHLs to the revised MRIP estimates.

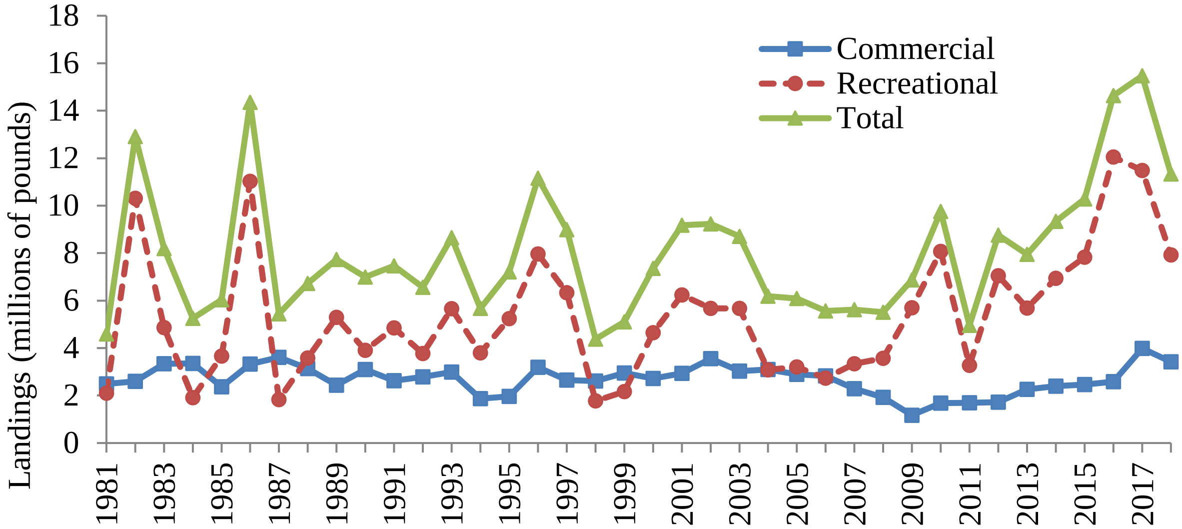

Figure 3: Commercial and recreational black sea bass landings in millions of pounds from Maine through Cape Hatteras, North Carolina, 1981-2018. Recreational landings are based on the revised MRIP numbers.[5,6]

Commercial Fishery

Commercial landings of black sea bass peaked in 2017 at 3.99 million pounds, and reached a low of 1.18 million pounds in 2009 (Figure 3). About 3.42 million pounds of black sea bass were landed by commercial fishermen in 2018, corresponding to approximately 97% of the commercial quota (Table 1).[6]

Black sea bass are a valuable commercial species. Their value has increased disproportionately compared to moderate increases in landings in recent years. Total black sea bass ex-vessel value (adjusted to 2018 dollars to account for inflation) from Maine through North Carolina increased steadily from 1994 through 2006, followed by a few years of decline. Ex-vessel value again rose steadily from 2009 through 2018. Ex-vessel value peaked in 2017 at $12.0 million and was only slightly lower at $11.9 million in 2018. Average price per pound also increased steadily during 1994-2018 and peaked at $3.49 per pound, on average, during 2018 (Figure 4).[6]

According to federal VTR data, statistical area 616, which includes important fishing areas near Hudson Canyon, was responsible for the largest percentage of commercial black sea bass catch (landings and discards) in 2018 (i.e., 49%). Statistical area 621, off southern New Jersey, Delaware, and Maryland accounted for the second highest proportion of catch (8%), followed by statistical area 537, south of Massachusetts and Rhode Island (6%), and statistical area 613, south of Long Island (5%; Table 2, Figure 5). Statistical area 539, off Rhode Island, accounted for only 4% of total catch, but had the highest number of trips which reported black sea bass catch on federal VTRs in 2018 (1,848 trips).[8]

In 2018, most commercial landings from state and federally-permitted vessels occurred in New Jersey (20%) and Virginia (18%).[6] The percentage of landings by state is driven by and closely matches the state-by-state commercial quota allocations managed by the Commission (Table 3). These allocations are not contained in the Council's FMP. States set measures to achieve their state-specific commercial quotas.

At least 100,000 pounds of black sea bass were landed in each of 12 ports in 8 states from Maine through North Carolina in 2018. These 12 ports accounted for over 70% of all commercial black sea bass landings in 2018 (Table 4).[6] Detailed community profiles developed by the NEFSC Social Science Branch can be found at www.mafmc.org/communities/.

A total of 213 federally-permitted dealers from Maine through North Carolina purchased black sea bass in 2018. More dealers bought black sea bass in New York than in any other state (Table 5).[6]

A moratorium permit is required to fish commercially for black sea bass in federal waters. In 2018, 662 federal commercial black sea bass permits were issued.[7]

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

Federal VTR data indicate that 72% of the black sea bass caught by federal commercial permit holders from Maine to North Carolina in 2018 was caught with bottom otter trawl gear. About 18% was caught with fish pots and traps, 4% in lobster traps, and 3% with hand lines. Other gear types each accounted for 1% or less of total commercial catch.[8]

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 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 section known as 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.

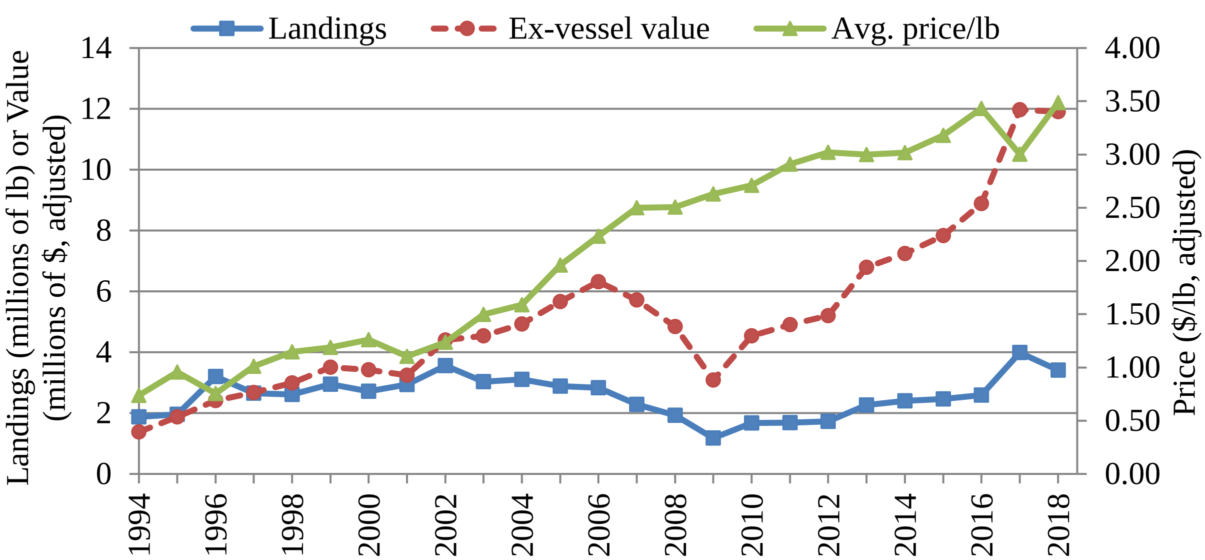

Figure 4: Landings, ex-vessel value, and average price for black sea bass, ME-NC, 1994-2018. Ex-vessel value and price are adjusted to real 2018 dollars using the Gross Domestic Product Price Deflator.[7]

Table 2: Statistical areas that accounted for at least 5% of the total commercial black sea bass catch in 2018, with associated number of trips.[9]

Statistical Area	Percent of 2018 Commercial Black Sea Bass Catch	Number of Trips
616	49%	812
621	8%	300
537	6%	882
613	5%	1,037

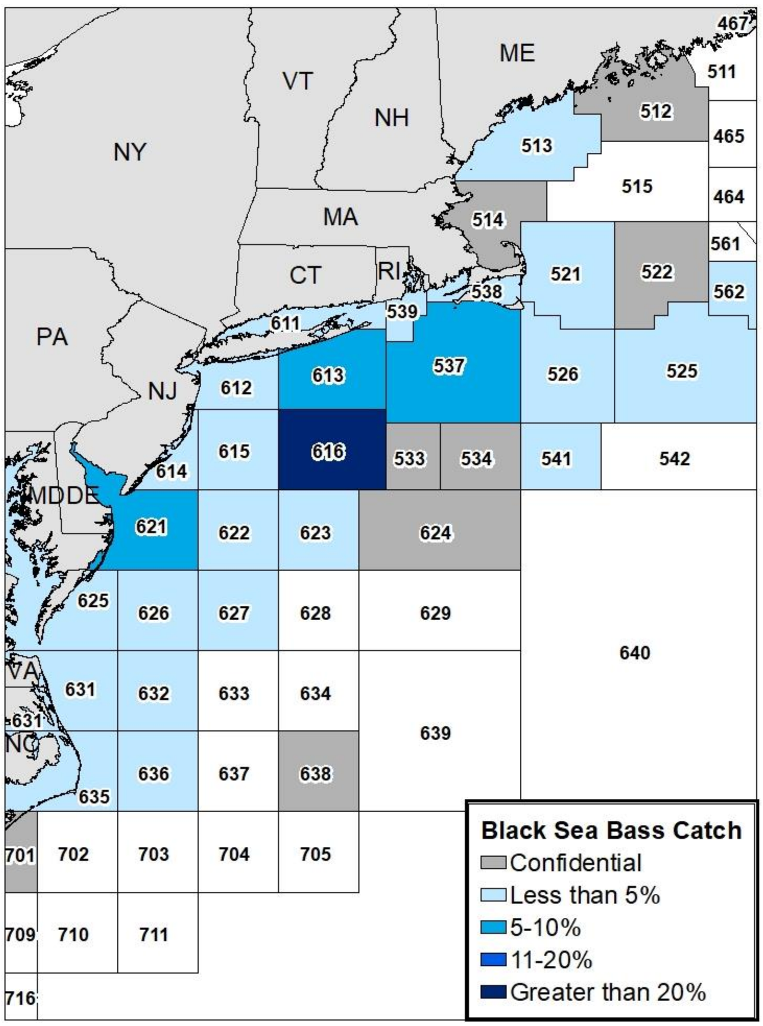

Figure 5: Proportion of black sea bass catch by statistical area in 2018 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers.

Table 3: Allocation of commercial black sea bass quota among states under the Commission's FMP.

State	Allocation (percent)
Maine	0.5
New Hampshire	0.5
Massachusetts	13.0
Rhode Island	11.0
Connecticut	1.0
New York	7.0
New Jersey	20.0
Delaware	5.0
Maryland	11.0
Virginia	20.0
North Carolina	11.0
Total	100

Table 4: Ports reporting at least 100,000 pounds of black sea bass landings in 2018, associated number of vessels, and percentage of total commercial landings. Ports with more than 100,000 pounds of black sea bass, but fewer than three associated vessels and/or dealers are not shown.[7]

Port name	Pounds of black sea bass landed	% of total commercial black sea bass landed	Number of vessels landing black sea bass
POINT PLEASANT, NJ	415,020	12%	237
POINT JUDITH, RI	284,122	8%	2,829
OCEAN CITY, MD	253,410	7%	70
NEWPORT NEWS, VA	237,708	7%	19
BEAUFORT, NC	221,988	6%	155
NEW BEDFORD, MA	200,784	6%	858
HAMPTON, VA	198,406	6%	48
CAPE MAY, NJ	140,002	4%	125
MONTAUK, NY	137,263	4%	419
CHINCOTEAGUE, VA	106,651	3%	68

Table 5: Dealers, by state, reporting purchases of black sea bass in 2018.[7]

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of dealers	33	34	14	51	30	3	8	14	26

Recreational Fishery

The Council develops coast-wide regulations for the recreational black sea bass fishery in federal waters, including a minimum size, a possession limit, and open and closed seasons (Table 6). The Commission and member states develop recreational measures in state waters (Table 7).

As previously described, MRIP released a revised time series of recreational fishery data in July 2018. The revised catch, harvest, and effort estimates for black sea bass are substantially higher than the previous estimates, largely due to increased estimates for private anglers (Figure 6). Information presented in this section is based on the revised estimates.

Between 1981 and 2018, recreational catch of black sea bass from Maine through Cape Hatteras, NC was lowest in 1984 at 4.73 million fish and was highest in 2017 at about 41.0 million fish. Recreational harvest in weight was highest in 2016 at 12.05 million pounds; 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.

In 2018, an estimated 3.99 million black sea bass, at about 7.92 million pounds, were harvested by recreational anglers from Maine through Cape Hatteras, North Carolina (Figure 3, Table 8). These numbers should not be compared against the RHLs in the respective years as the RHLs were based on the previous MRIP estimation methodology. Back-calculated estimates of harvest using the previous estimation methodology suggest that 3.82 million pounds of black sea bass were harvested by recreational anglers from Maine through Cape Hatteras, NC in 2018, about 104% of the 2018 RHL.[5]

In 2018, 58% of black sea bass harvested by recreational fishermen from Maine through North Carolina (in numbers of fish) were caught in state waters and about 42% in federal waters (Table 9). Most of the recreational harvest in 2018 was landed in New Jersey (26%), New York (21%), Rhode Island (18%), Massachusetts (17%), and Connecticut (10%; Table 10).[5]

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2018, 806 party and charter boats held federal recreational black sea bass permits.[7]

About 87% of the recreational black sea bass harvest in 2018 was caught by anglers fishing on private or rental boats, about 12% from anglers aboard party or charter boats, and 1% from anglers fishing from shore (Table 11).[5]

Table 6: Federal black sea bass recreational measures, Maine - Cape Hatteras, NC, 2007 - 2019.

Year	Min. size	Possession 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	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
2018-2019	12.5"	15	May 15 - Dec 31

Table 7: State waters black sea bass recreational measures in 2018 and 2019. All measures remained unchanged from 2018 to 2019 except for the season in Massachusetts.

State	Min. Size (inches)	Possession Limit	Open Season
Maine	13	10 fish	May 19 - Sept 21; Oct 18 - Dec 31
New Hampshire	13	10 fish	Jan 1 - Dec 31
Massachusetts	15	5 fish	2018: May 19 - Sept 12
			2019: May 18 - Sept 8
Rhode Island	15	3 fish	Jun 24 - Aug 31
		7 fish	Sept 1 - Dec 31
Connecticut private & shore	15	5 fish	May 19 - Dec 31
CT authorized party/charter monitoring program vessels	15	5 fish	May 19 - Aug 31
		7 fish	Sept 1- Dec 31
New York	15	3 fish	Jun 23 - Aug 31
		7 fish	Sept 1- Dec 31
New Jersey	12.5	10 fish	May 15 - Jun 22
		2 fish	Jul 1- Aug 31
		10 fish	Oct 8 - Oct 31
	13	5 fish	Nov 1 - Dec 31
Delaware	12.5	15 fish	May 15 - Dec 31
Maryland	12.5	15 fish	May 15 - Dec 31
Virginia	12.5	15 fish	Feb 1 - 28; May 15 - Dec 31
North Carolina, North of Cape Hatteras (35° 15'N)	12.5	15 fish	Feb 1 - 28; May 15 - Dec 31

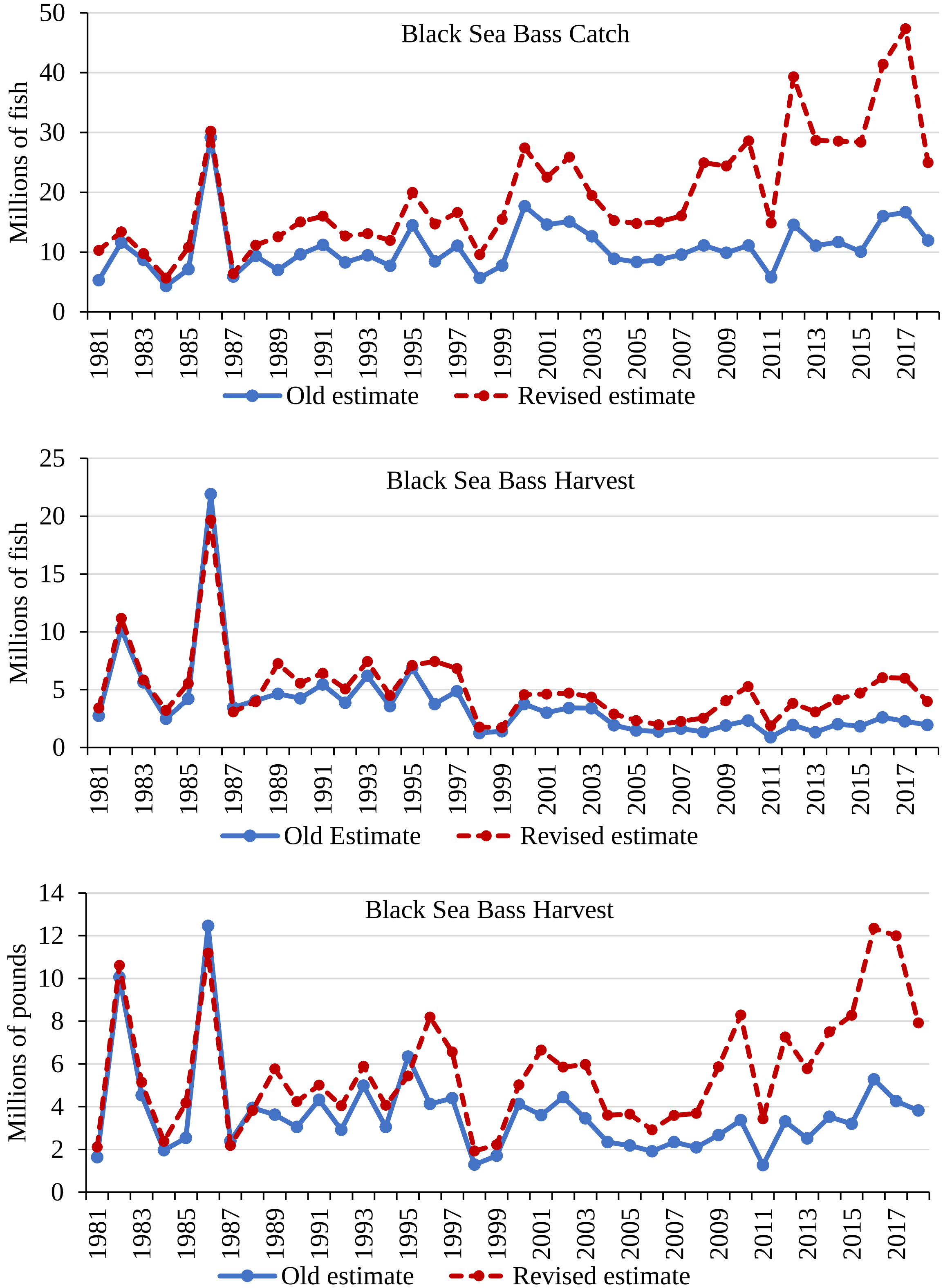

Figure 6: Recreational black sea bass catch in numbers of fish and harvest in numbers of fish and pounds, ME - NC, 1981 - 2017 based on old and revised MRIP estimates.[5]

Table 8: Estimated recreational black sea bass catch and harvest from Maine through Cape Hatteras, North Carolina, 2009-2018, based on the revised MRIP estimates.[6]

Year	Catch (millions of fish)	Harvest (millions of fish)	Harvest (millions of pounds)	% of catch retained
2009	23.12	3.92	5.70	17%
2010	26.42	5.10	8.07	19%
2011	12.47	1.78	3.27	14%
2012	34.95	3.69	7.04	11%
2013	25.71	3.01	5.68	12%
2014	23.29	3.81	6.93	16%
2015	23.17	4.39	7.82	19%
2016	35.80	5.84	12.05	16%
2017	41.00	5.70	11.48	14%
2018	24.99	3.99	7.92	16%

Table 9: Estimated percentage of black sea bass recreational landings (in numbers of fish) in state and federal waters, from Maine through North Carolina, 2009 through 2018, based on the revised MRIP estiamtes.[6]

Year	State waters	Federal waters
2009	56%	44%
2010	54%	46%
2011	50%	50%
2012	63%	37%
2013	60%	40%
2014	59%	41%
2015	67%	33%
2016	56%	44%
2017	39%	61%
2018	58%	42%
2009-2018 average	**56%**	**44%**
2016-2018 average	**51%**	**49%**

Table 10: State-by-state contribution (as a percentage) to total recreational harvest of black sea bass (in number of fish), Maine through Cape Hatteras, North Carolina, 2016 - 2018, based on the revised MRIP estimates.[6]

State	2016	2017	2018	2016-2018 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	13%	10%	17%	13%
Rhode Island	9%	6%	18%	11%
Connecticut	11%	9%	10%	10%
New York	52%	42%	21%	38%
New Jersey	9%	26%	26%	20%
Delaware	2%	2%	2%	2%
Maryland	4%	3%	4%	4%
Virginia	1%	2%	2%	2%
North Carolina	0%	0%	0%	0%

Table 11: Percent of total recreational black sea bass landings (in numbers of fish) by recreational fishing mode, Maine through North Carolina, 1981-2018, based on the revised MRIP estimates.[6]

Year	Shore	Party/charter	Private/rental	Total Number of Fish in Millions
1981	52%	19%	29%	5.85
1982	2%	57%	41%	15.04
1983	7%	62%	31%	6.89
1984	12%	29%	59%	6.39
1985	10%	35%	55%	7.98
1986	15%	52%	33%	21.33
1987	6%	15%	79%	4.26
1988	11%	26%	63%	4.69
1989	13%	30%	57%	8.65
1990	17%	30%	53%	6.01
1991	12%	31%	57%	7.28
1992	4%	39%	57%	5.89
1993	3%	56%	41%	8.00
1994	12%	34%	54%	5.54
1995	14%	49%	37%	7.64
1996	5%	64%	31%	8.33
1997	1%	73%	26%	7.41
1998	3%	43%	54%	2.17
1999	5%	14%	81%	2.18
2000	10%	26%	64%	5.17
2001	2%	42%	56%	5.61
2002	2%	33%	65%	5.34
2003	1%	34%	65%	4.86
2004	1%	18%	81%	4.53
2005	1%	21%	78%	3.47
2006	7%	21%	72%	3.10
2007	3%	30%	67%	3.02
2008	1%	17%	82%	3.33
2009	2%	11%	87%	4.59
2010	1%	9%	90%	6.41
2011	2%	14%	84%	2.64
2012	1%	17%	82%	4.37
2013	2%	7%	91%	3.63
2014	3%	14%	83%	4.92
2015	0%	11%	89%	5.12
2016	4%	8%	88%	6.39
2017	1%	9%	90%	6.30
2018	1%	12%	87%	4.34
1981-2018 average	**7%**	**29%**	**64%**	**6.02**
2016-2018 average	**2%**	**10%**	**88%**	**5.68**

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[6] Unpublished NMFS commercial fish dealer data (i.e., "AA tables", which include both state and federal dealer data).

[7] Unpublished NMFS permit data.

[8] Unpublished NMFS VTR data.

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 26, 2019, with minor revisions October 2, 2019

To: Council and Board

From: Kiley Dancy, Karson Coutre, and Julia Beaty, Staff

Subject: Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Sector Allocations

Overview

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) will discuss commercial and recreational sector allocation issues for summer flounder, scup, and black sea bass on Wednesday, October 9, 2019. Recent revisions to the time series of recreational data provided by the Marine Recreational Information Program (MRIP) resulted in much higher estimates of recreational catch compared to previous estimates, affecting the entire time series of MRIP data going back to 1981. This has management implications due to the fixed allocation percentages defined in the Fishery Management Plan (FMP) for all three species. These percentages were derived based on catch and landings data from the 1980s and early 1990s, as described in more detail below. These allocation percentages do not reflect the revised understanding of the recent and historic proportions of catch and landings from the commercial and recreational sectors based on new MRIP data. Because these allocation percentages are defined in the FMP, they cannot be modified without an FMP amendment. During their October 2019 joint meeting, the Council and Board will discuss whether an amendment should be initiated to consider modifications to these allocations.

Current Sector Allocations and Basis

Summer Flounder

Amendment 2 (1993)[1] specified that total allowable summer flounder landings should be allocated **60% to the commercial fishery and 40% to the recreational fishery**, based on landings data from **1980-1989** (Table 1).

Because the FMP specifies a landings-based allocation and not a total catch allocation, expected discards are typically apportioned by sector for each fishing year based on the Monitoring Committee's recommendations. Typically, the Monitoring Committee uses a three-year moving average of the percent of discards attributable to each sector and applies that to the total expected discards from the projections for the relevant fishing year.

[1] Available at http://www.mafmc.org/s/SFSCBSB_Amend_2.pdf.

Table 1: Comparison of current data and Amendment 2 data for commercial and recreational summer flounder landings in millions of pounds and percentages for 1980-1989. These years were used to calculate the sector allocations implemented in Amendment 2.

	Current Data (2018 Benchmark Assessment)				Amendment 2 (1993)			
Year	**Com. landings**	**Rec. landings[a]**	**% Com.**	**% Rec.**	**Com. landings[b]**	**Rec. landings[b]**	**% Com.**	**% Rec.**
1980	31.22	N/A	N/A	N/A	31.22	25.84	55%	45%
1981	21.06	15.85	57%	43%	21.06	11.30	66%	35%
1982	22.93	23.72	49%	51%	22.93	18.90	55%	45%
1983	29.55	36.74	45%	55%	29.55	35.65	45%	55%
1984	37.77	28.23	57%	43%	37.77	28.88	57%	43%
1985	32.35	25.14	56%	44%	32.35	17.09	65%	35%
1986	26.87	26.47	50%	50%	26.87	17.57	60%	40%
1987	27.05	23.45	54%	46%	27.05	13.13	67%	33%
1988	32.38	20.79	61%	39%	32.38	18.422	64%	36%
1989	17.91	5.66	76%	24%	17.91	3.19	85%	15%
Avg	**27.54[c]**	**22.89[c]**	**55%[d]**	**45%[d]**	**27.91**	**19.00**	**59%[d]**	**41%[d]**

[a] Recreational harvest data in the 2018 assessment is provided back to 1982. The value for 1981 is from a query of MRIP data, which only goes back to 1981.

[b] The source of commercial landings used in Amendment 2 was "NMFS General Canvas Data," while the source of recreational data used in Amendment 2 was "unpublished NMFS Marine Recreational Fisheries Statistics Survey (MRFSS) Data." MRFSS was a precursor to MRIP.

[c] Average for recent data includes only 1981-1989, given that 1980 data is not available for revised MRIP data.

[d] These averages are derived by calculating the percent split of the total landings over the time period (1981-1989 for new data or 1980-1989 for the Am. 2 data). In Amendment 2, this table lists the averages percentages by sector as 62% commercial and 38% recreational, which is calculated by taking the average of the annual sector percent values. The Amendment 2 document states that "the commercial share averaged about 60% of the combined total landings of summer flounder from 1980-1989," and references a "distribution (60/40) of landings between the commercial and recreational fisheries." Given that this amendment was developed in the early 1990s, there is less explicit information provided in the amendment documents on the exact methods and rationale for the 60/40 split.

Scup

Amendment 8 (1996)[2] specified that the annual Total Allowable Catch (TAC) for scup would be allocated to the commercial and recreational fisheries based on the proportions of commercial and recreational catch (landings and dead discards) for the years **1988-1992** (Table 2). Based on this data, **22% of the TAC is allocated to the recreational fishery and 78% is allocated to the commercial fishery**.

In determining how to allocate the TAC to the commercial and recreational fisheries, the Council and Commission examined several alternatives that allocated either catch or landings. They determined that allocating the TAC to the two sectors and then removing the discards to determine the commercial quota and recreational harvest limit was fair and equitable to both the commercial and recreational fisheries. When allocations are based on catch, the commercial sector would receive the full effect of a change in the rate of discards, i.e., commercial quota would increase

[2] Available at http://www.mafmc.org/s/SFSCBSB_Amend_8.pdf.

proportionally to the level of discard reduction. Each fishery would be treated fairly with respect to their contribution to discards and the effect of those discards on their shares of TAC. This is different than the sector allocations for summer flounder and black sea bass, which are landings-based.

Table 2: Comparison of commercial and recreational scup catch in metric tons and percentages for 1988-1992 based on the 2019 operational assessment and the analysis conducted for Amendment 8. These years were used to calculate the sector allocations implemented in Amendment 8.

	2019 Operational Assessment					Amendment 8[a]				
Year	**Com. Catch**	**Rec. Catch**	**Total Catch**	**% Com. Catch**	**% Rec. Catch**	**Com. Catch**	**Rec. Catch**	**Total Catch**	**% Com. Catch**	**% Rec Catch**
1988	19.08	7.12	26.20	73%	27%	16.29	4.69	20.98	78%	22%
1989	11.60	10.66	22.26	52%	48%	12.98	5.79	18.77	69%	31%
1990	15.51	7.30	22.82	68%	32%	18.07	4.30	22.36	81%	19%
1991	23.08	13.08	36.16	64%	36%	22.93	8.29	31.22	73%	27%
1992	17.95	9.59	27.55	65%	35%	25.86	4.58	30.43	85%	15%
Avg	17.44	9.55	27.00	**65%**	**35%**	19.23	5.53	24.75	**78%**	**22%**

[a] Data sources used in Amendment 8 include National Marine Fisheries Service (NMFS) commercial fish dealer weighout, MRFSS, and Northeast Fisheries Science Center data.

Black Sea Bass

Amendment 9 (1996)[3] specified that the annual total allowable landings (TAL) would be **allocated 49% to the commercial fishery and 51% to the recreational fishery** based on the proportions of commercial and recreational landings (landings and dead discards) for the years **1983-1992** (Table 3).

Like summer flounder, this is a landings-based allocation, and expected discards in each sector are typically defined based on the recommendations of the Monitoring Committee.

[3] Available at: http://www.mafmc.org/s/SFSCBSB_Amend_9.pdf.

Table 3: Comparison of commercial and recreational black sea bass landings, in millions of pounds, and percentages for 1983-1992 based on current data (i.e., preliminary ACCSP commercial data and revised MRIP data) and the analysis conducted for Amendment 9. These years were used to calculate the sector allocations implemented in Amendment 9.

	Current Data[a]				Amendment 9[b]			
Year	**Com. landings**	**Rec. landings**	**% Com.**	**% Rec.**	**Com. landings**	**Rec. landings**	**% Com.**	**% Rec.**
1983	3.34	4.86	41%	59%	3.34	4.08	45%	55%
1984	4.33	1.91	69%	31%	4.33	1.45	75%	25%
1985	3.42	3.66	48%	52%	3.42	2.10	62%	38%
1986	4.19	11.02	28%	72%	4.19	12.39	25%	75%
1987	4.17	1.83	70%	31%	4.17	1.92	68%	32%
1988	4.14	3.58	54%	46%	4.14	2.87	59%	41%
1989	2.92	5.3	36%	64%	2.92	3.29	47%	53%
1990	3.5	3.91	47%	53%	3.50	2.76	56%	44%
1991	2.81	4.84	37%	63%	2.81	4.19	40%	60%
1992	3.01	3.77	44%	56%	3.01	2.71	53%	47%
Avg	**3.58**	**4.47**	**45%**	**55%**	**3.58**	**3.78**	**49%**	**51%**

[a] Current commercial data is based on ACCSP data which should be considered preliminary as they have not been validated by all states. Current recreational data is based on MRIP data accessed in August 2019. Unlike Tables 1 and 2, the data shown here are not derived from the most recent stock assessment (i.e., the 2019 operational assessment) because the black sea bass stock assessment does not incorporate data prior to 1989.

[b] The data sources identified in Amendment 9 include MRFSS and NMFS general canvass data.

Need for Reconsideration

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 for most years are several times higher than the previous estimates for shore and private boat modes.

Revisions were made to the entire time series, although the differences between the previous and revised estimates are greater in the later parts of the time series, especially after about 2000 (Figure 1).

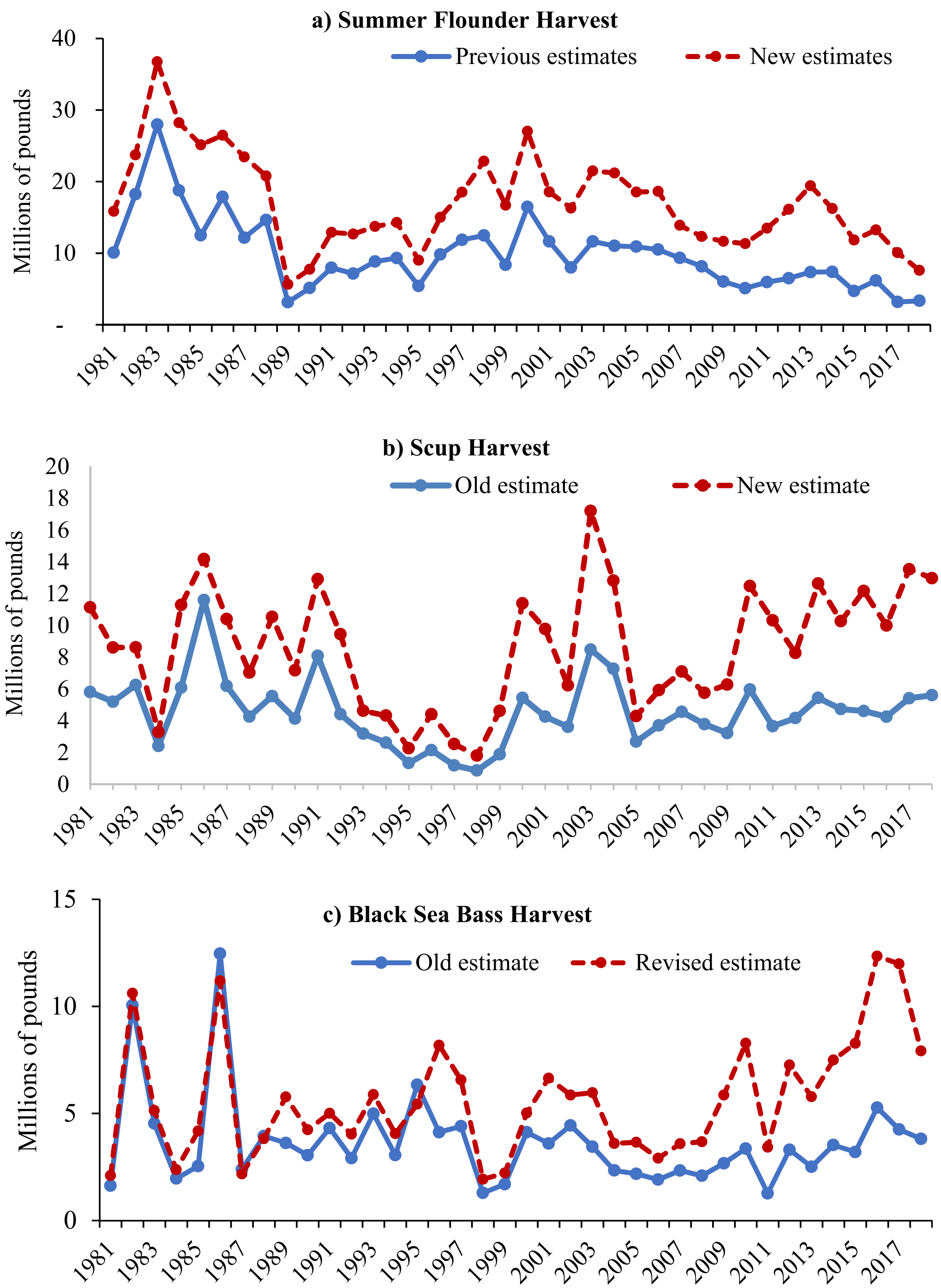

Figure 1: Previous vs. revised MRIP estimates of recreational harvest in millions of pounds for a) summer flounder, b) scup, and c) black sea bass, 1981-2018.

These revised MRIP estimates have recently been incorporated into stock assessments for all three species. They were first used in management of the summer flounder fishery for 2019 and will be used to set catch and landings limits and recreational management measures for black sea bass and scup for 2020. While the recreational harvest estimates have substantially increased, recreational harvest limits have not increased to the same degree (for summer flounder) or are not expected to increase to the same degree (for black sea bass and scup), potentially resulting in difficulty constraining the recreational fishery to the annual harvest limits without large adjustments to recreational management measures.

For summer flounder and black sea bass, commercial landings data over the allocation base periods have not changed since the implementation of the original sector allocations. For scup, while landings data may not have changed, the methods used to estimate dead discards have changed, resulting in notably different estimates of catch over the base period (Table 2). Given a catch-based allocation for scup, it would be important to consider changes in both landings and discards for each sector.

While Tables 1-3 above provide updated data for the original base years for each species, a reconsideration of sector allocations should evaluate a broad range of allocation methods and data sources and would not necessarily need to rely on the previous base years.

Commercial vessel and dealer reporting requirements, observer coverage of commercial fisheries, recreational for-hire reporting requirements, and the use of voluntary recreational data have also increased since the mid-1990s when the sector allocations for all three species were implemented. The Council and Board could consider whether there are alternative methods of allocating by sector that could incorporate more modern data sources.

The Council and Board could also review the current methods of allocating discards by sector and consider whether catch- or landings-based allocations are more appropriate for current management of these fisheries. As described above, scup is currently managed with a catch-based sector allocation, while for summer flounder and black sea bass, a landings-based allocation is specified in the FMP, and the Monitoring Committee uses different methods to allocate expected discards.

The Council previously funded a study consisting of an economic model to evaluate the 60/40 summer flounder sector allocation. The model, developed by Dr. Kurt Schnier (University of California, Merced) and Dr. Rob Hicks (College of William & Mary), aims to determine which allocations would maximize marginal economic benefits to the commercial and recreational sectors. The model was peer reviewed in November 2016 and presented to the Council and Board in December 2016. Because the study used MRIP data prior to the 2018 revisions, the developers are currently updating the model to reflect revised MRIP estimates. Updated model results are expected to be presented in December 2019. The Council and Board could consider expanding this work or funding similar studies to evaluate the sector allocations for scup and black sea bass.

Given these circumstances, the Council and Board should consider whether the current allocations are meeting the objectives of the FMP and the needs of the fisheries and if an amendment is needed to consider changes to these allocations.

Potential Action

Revisions to the sector allocations require an amendment to the FMP. Given the management implications of the modified MRIP data and updated assessments incorporating this information, staff and the Monitoring Committee recommend initiating a joint amendment to re-evaluate the sector allocations for all three species in this FMP.

A timeline for such an action is difficult to predict at this stage as it would depend on the complexity of the alternatives developed and the analyses required, as well as other Council and Commission priorities. If an amendment were initiated, staff recommend prioritizing this action for faster than typical development given the management implications of the revised MRIP data. A timeline for typical major amendments (given Council/federal requirements) can be found at http://www.mafmc.org/s/FMP-Work.pdf. While some of these steps could possibly be accelerated, it is likely that an amendment to reconsider sector allocations for all three species would take at least two years to implement.

Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 27, 2019

To: Council and Board

From: Julia Beaty, staff

Subject: Potential black sea bass commercial amendment - cover memo

The following materials are provided for discussion at the October 2019 joint meeting of the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission (ASMFC):

1) A staff memo dated September 27, 2019 with background information regarding a potential management action to consider changes to the current commercial black sea bass quota management system

2) A summary of commercial black sea bass quota allocation options under consideration by the ASMFC's Summer Flounder, Scup, and Black Sea Bass Board

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 27, 2019

To: Council and Board

From: Julia Beaty, staff

Subject: Potential Black Sea Bass Commercial Amendment

The Atlantic States Marine Fisheries Commission (ASMFC) formed a Commercial Black Sea Bass Working Group in August 2018 to identify management issues related to changes in stock distribution and abundance. This group identified the following problem statements with regard to management of the commercial black sea bass fishery:

> *"First, the commercial black sea bass allocations to the states were originally implemented in 2003 as part of Amendment 13, loosely based on historical landings from 1980-2001. The state shares in Amendment 13 allocated 67% of the coast-wide commercial quota among the states of New Jersey through North Carolina (North of Cape Hatteras) and 33% among the states of New York through Maine. These state commercial allocations have been unchanged for 15 years. Meanwhile, the resource has experienced shifts in distribution and abundance, and changes in fishing effort and fishing behaviors have occurred…*
>
> *A second problem relates to the provision in the FMP that prescribes a coastwide black sea bass quota managed by NOAA Fisheries. Under the current regulations, all states in the management unit are subject to fishery closures if a coastwide quota overage occurs, despite state-by-state quota management by the ASMFC. These closures can leave states with remaining commercial quota, especially ITQ, unable to utilize their full allocation of the resource."*

A detailed report from the ASMFC's Black Sea Bass Commercial Working Group, including additional considerations associated with these problem statements, is available at: http://www.mafmc.org/s/Tab06_BSBManagement-Reform_2019-03.pdf (pages 4-14).

The ASMFC formed a Plan Development Team (PDT) in February 2019 to analyze potential modifications to the current state-by-state commercial quota allocations to address changes in stock distribution and abundance. These allocations are managed by the ASMFC and are not included in the Mid-Atlantic Fishery Management Council's (Council's) Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP).

In August 2019, after considering a report from the PDT and additional proposed management strategies from Board members, the Board agreed to continue development of the following approaches:

1) A dynamic approach (referred to as TMGC) that gradually shifts allocations over time based on a combination of historical landings and current biomass distribution,
2) Trigger-based allocation approaches where quota bellow a pre-defined trigger is allocated based on the current allocations and quota above the trigger is allocated in a different manner,
3) A modified trigger approach where the trigger amount is adjusted each year,
4) An option to increase Connecticut's quota allocation from 1% to 5% before applying any of the other approaches, and
5) Other hybrid approaches combining two or more of the other approaches.

Details on these approaches are provided in the additional documents included behind this briefing book tab.

After much discussion during their August 2019 meeting the Board also adopted the following draft goal statement for this effort:

> *"Consider adjusting the current commercial black sea bass allocation using the current distribution and abundance of black sea bass as one of several adjustment factors to achieve balanced access to the resource. These adjustments factors will be identified as the process moves forward."*

The Board has not yet initiated a management action to consider modifications to the state-by-state commercial black sea bass quota allocations. They agreed to engage with the Council on this issue before formally initiating a management action. The Board may consider initiating a management action during their joint meeting with the Council in October 2019.

The state-by-state commercial black sea bass allocations are not included in the Council's FMP; therefore, joint action with the Council is not required to modify them. However, the Council was closely involved in the initial development of these allocations, as summarized in a February 2019 memo from Council staff (see pages 15-18 of tab 6 of the briefing materials for the March 2019 Council meeting: http://www.mafmc.org/briefing/march-2019).

The Council initiated an amendment in March 2019 solely for the purposes of allocating staff time to this effort and in consideration of alternatives that could include federal involvement. The Council agreed to postpone development of management alternatives until later in the year to allow the Commission's Plan Development Team to further develop options that may warrant consideration in a federal Fishery Management Plan amendment.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **Summer Founder, Scup and Black Sea Bass Management Board and Mid-Atlantic Council**

FROM: **Caitlin Starks, ASMFC FMP Coordinator**

DATE: **September 27, 2019**

SUBJECT: **Commercial Black Sea Bass Management Options under Board Consideration**

At the October 2019 joint meeting of the Mid-Atlantic Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) in Durham, North Carolina, the Council and Summer Flounder Scup and Black Sea Bass Management Board (Board) will discuss ongoing work at the Commission to address commercial black sea bass management.

In May 2019, the Board received a report from the Plan Development Team (PDT) with analysis of potential strategies to consider changes to the state by state commercial black sea bass allocations. After considering the PDT report, the Board agreed to continue development of the following management strategies:

1) A dynamic approach (referred to as TMGC) that gradually shifts allocations over time based on a combination of historical landings and current biomass distribution,
2) Several trigger-based allocation approaches with sub-options for how quota above the trigger is distributed to the states and/or regions, and
3) Hybrid approaches combining two or more of the other approaches.

In addition, the Board Chair invited any additional proposals for commercial management options to be submitted by May 15, 2019 for consideration at the August 2019 Board meeting. In response, two additional options were submitted by the state of Connecticut:

1) An option to increase Connecticut's quota allocation from 1% to 5% before applying any of the other approaches, and
2) A modified trigger approach with dynamic adjustments of the state allocations over time with consideration of resource availability and the historical allocation regime

The Board reviewed the options proposed by Connecticut at their August 2019 meeting and agreed to consider them for further development, along with the three options considered in May 2019. More detail on these five options that remain under consideration by the Board can be found in the enclosed PDT Report (revised per the May 1, 2019 Board discussion), and the Connecticut proposal.

Enclosed:

Plan Development Team Report (revised September 27, 2019)

Connecticut Proposed Options for Consideration by Black Sea Bass Commercial PDT

M19-74

Plan Development Team Report: Black Sea Bass Commercial Management

Prepared by:

<u>Black Sea Bass Plan Development Team</u>
Caitlin Starks, Chair, ASMFC Staff
Alex Aspinwall, VMRC
Jeff Brust, NJ DEP
John Maniscalco, NYS DEC
Jason McNamee, RI DEM
Julia Beaty, MAFMC
Emily Gilbert, NOAA Fisheries

Revised September 27, 2019 to correct TMGC figure error and remove Section II.D. per Board discussion on May 1, 2019

Table of Contents

I. Introduction

The Commission's Summer Flounder, Scup and Black Sea Bass Management Board formed a Commercial Black Sea Bass Working Group in August 2018 to identify management issues related to changes in stock distribution and abundance, and propose potential management strategies for Board consideration. In February 2018, the Board reviewed the Working Group report, which identified two main issues: (1) state commercial allocations implemented in 2003 do not reflect the current distribution of the resource, which has expanded significantly north of Hudson Canyon, and (2) federal coastwide quota management can limit harvest opportunities for some states if another state's harvest overage results in a coastwide fishery closure (Appendix A). In February, the Board requested the Plan Development Team (PDT) perform additional analyses and further develop proposed management options related to the issue of state-by-state commercial allocations. The second issue identified by the working group will be addressed in collaboration with the Mid-Atlantic Council (Council) and NOAA Fisheries.

This document presents the analyses and findings of the PDT. For each of the proposed management strategies, the PDT discussed potential variations of the strategy that could be implemented to achieve different management objectives or outcomes. The PDT also highlighted additional considerations the Board should take into account when evaluating these approaches.

II. Potential Management Strategies for Adjusting Commercial Allocations

A. Status Quo

One potential management option is to maintain the current state allocation percentages. The current allocations were originally implemented by the Commission in 2003 as part of Amendment 13, loosely based on historical commercial landings by state from 1980-2001 (Table 1). In a complementary action, the Council adopted an annual coastwide quota system to facilitate the state-by-state quota system adopted by the Commission. Each state sets measures to achieve, but not exceed, their annual state-specific quotas. The annual coastwide quota is implemented and administered by NOAA Fisheries. The fishery is closed when the coastwide quota is projected to be taken, regardless of whether individual states still have unutilized quota.

Table 1. Current black sea bass commercial state-by-state allocations.

State	% Allocation
ME	0.5
NH	0.5
MA	13.0
RI	11.0
CT	1.0
NY	7.0
NJ	20.0
DE	5.0
MD	11.0
VA	20.0
NC	11.0

B. TMGC Approach

The first approach to adjusting the state-by-state allocations discussed by the Black Sea Bass Commercial Working Group, and then the PDT, is a dynamic approach for gradually adjusting state-specific allocations using a combination of resource utilization (historical allocations) and current levels of resource distribution. The alternative is modeled after the Transboundary Management Guidance Committee (TMGC) approach, which was developed and used for the management of Georges Bank resources shared by the United States and Canada. Though the approach proposed here for black sea bass differs from the TMGC approach used for Georges Bank, in this document the black sea bass allocation approach will also be referred to as TMGC.

This new strategy sets forth a formulaic approach that balances stability within the fishery, based on historical allocations, with gradual allocation adjustments, based on regional shifts in resource distribution derived from updated stock assessments or surveys. The former recognizes traditional involvement and investment in the development of the fishery since the beginning of black sea bass management, and the latter addresses the changing distribution of the black sea bass resource and the resulting effects within the fishery. Through incremental adjustments over time, the state allocations become less dependent on the historical allocations and more dependent on regional resource distribution.

This option proposes use of the existing state-by-state allocations to reflect initial values for historical participation (resource utilization) and proposes use of the 2016 benchmark stock assessment results (NEFSC 2017) to determine the values for resource distribution; the two values are then integrated in the form of regional allocation shares. An alternative to using the stock assessment would be to use synoptic trawl survey information. Two regions are proposed, as defined in the assessment: (1) ME - NY, (2) NJ - NC. They emanate from the spatial stratification of the stock into subunits that generally align with those used for the assessment, which used Hudson Canyon as the dividing line based on several pieces of evidence that stock dynamics had an important break in this area. The regional allocation shares are then subdivided into state-specific allocations. Appendix B includes a complete description and examples of the TMGC approach retrospectively applied to recent years.

1. TMGC Variations

The TMGC approach affords considerable flexibility, both with regard to initial configuration and application of the allocation formula over time. A key feature involves the use of control rules to guard against abrupt shifts in allocations. The overall approach can be modified by the Board and Council in various ways. For example, sub-alternatives can be developed for:

- the regional configuration (e.g., alternative regions to those proposed here);
- the values for historical participation/resource utilization (e.g., current, status quo allocations, or some variant thereof);
- the starting and ending weighting values for resource utilization and resource distribution (e.g. 90:10 to 10:90, or some variant thereof);
- the increment of change in the weighting values per year (10%/year, or some variant thereof;)
- the periodicity of adjustments (e.g., annually vs. biannually);
- the overall time horizon for the transition between starting and ending weights for resource utilization and resource distribution (e.g., 8 years vs. 16 years).
- control rule (e.g., maximum regional allocation change of 3% per year, or some variant thereof)

Of the numerous potential configurations that could be created by adjusting these parameters, the PDT focused on four examples to evaluate potential effects on state-by-state allocations. In these examples, the resource distribution information is derived from the unadjusted regional spawning stock biomass proportions from the 2016 benchmark stock assessment. The other parameters of the formula vary in each example, as follows:

1. The first example represents a configuration resulting in a more liberal change in state allocations. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); resource utilization = status quo allocations; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 90% weight on the resource distribution is 9 years; 10% control rule; regional distribution assumption is based on the spawning stock biomass by region from the assessment for the time period of 2004 - 2012; distribution of adjustments to states within a region based on historic allocations.
    a. Any TMGC configuration could also be modified to distribute the allocation adjustments equally to the states within each region, instead of distributing those adjustments proportionally to the historic state allocations. An example of this modification applied to the above configuration is shown in Figure 2 below.

2. This example represents a more conservative configuration, with more limited changes to state allocations. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); resource utilization = status quo allocations; transition from 90:10 to 30:70; 5% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 70% weight on the resource distribution is 12 years; 3% control rule; regional distribution assumption is based on the spawning stock biomass by region from the assessment for the time period of 2004 - 2015; distribution of adjustments to states within a region based on historic allocations.

3. The last example is intended to showcase a number of additional modifications that could be made to the approach to achieve certain objectives. In discussions amongst the PDT (and previously the Board regarding recreational black sea bass) it has been noted that it may be appropriate to treat New Jersey as an individual region due to its geographic position straddling the division of the Northern and Southern regions adjacent to Hudson Canyon. Additionally, some Board members have suggested modifying the “resource utilization” part of the equation to increase the allocations for Connecticut and New York due to their disproportionate allocations compared to their current resource availability. Lastly, the PDT discussed the option of holding Maine and New Hampshire’s current allocations static throughout the transition.

    To demonstrate these modifications, the parameters are set as follows: 4 regions (ME and NH remaining as a non-dynamic region with static allocations; MA - NY; NJ as a stand-alone region; and DE - NC); resource utilization = CT and NY base allocations increased by 1% in each of the first three years; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 90% weight on the resource distribution is 9 years; 10% control rule; regional distribution assumption is based on spawning stock biomass by region from the assessment for the time period of 2004 - 2012, and assumes NJ is consistently 60% of the southern region distribution; distribution of adjustments to states within a region based on historic allocations.

The changes to the state allocations resulting in each of these examples are shown in Figures 1-4. A more detailed description of the methods applied in each example is included in Appendix B. It is important to note that the TMGC approach continually adjusts the state-by-state allocations beyond the time period over which the transition of the weights of resource utilization and resource distribution occurs. These adjustments would be made according to updated regional resource distribution information from either the stock assessment or synoptic trawl survey information as it becomes available, depending on which data source is selected.

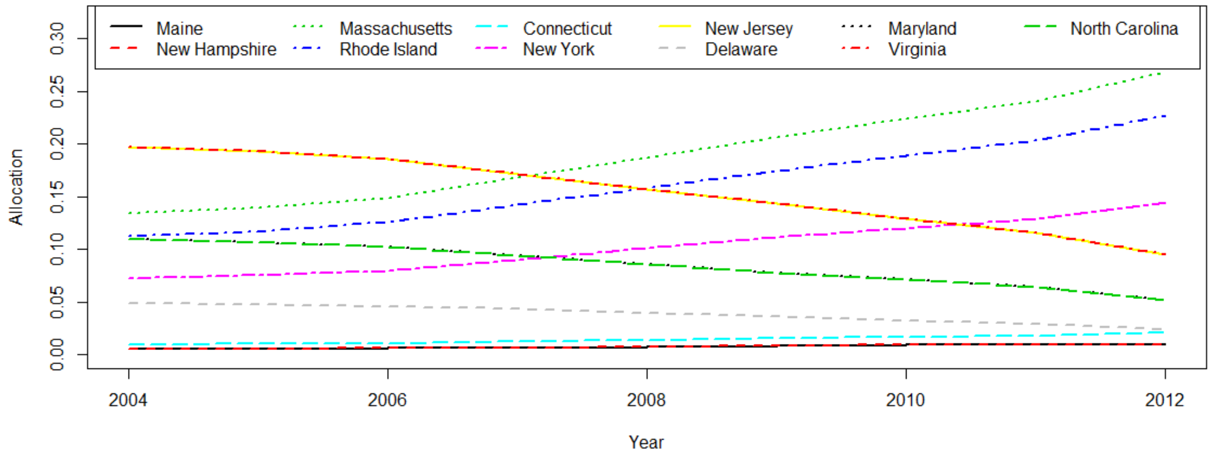

Figure 1. Allocation trajectory for all states under the parameters outlined in example 1 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

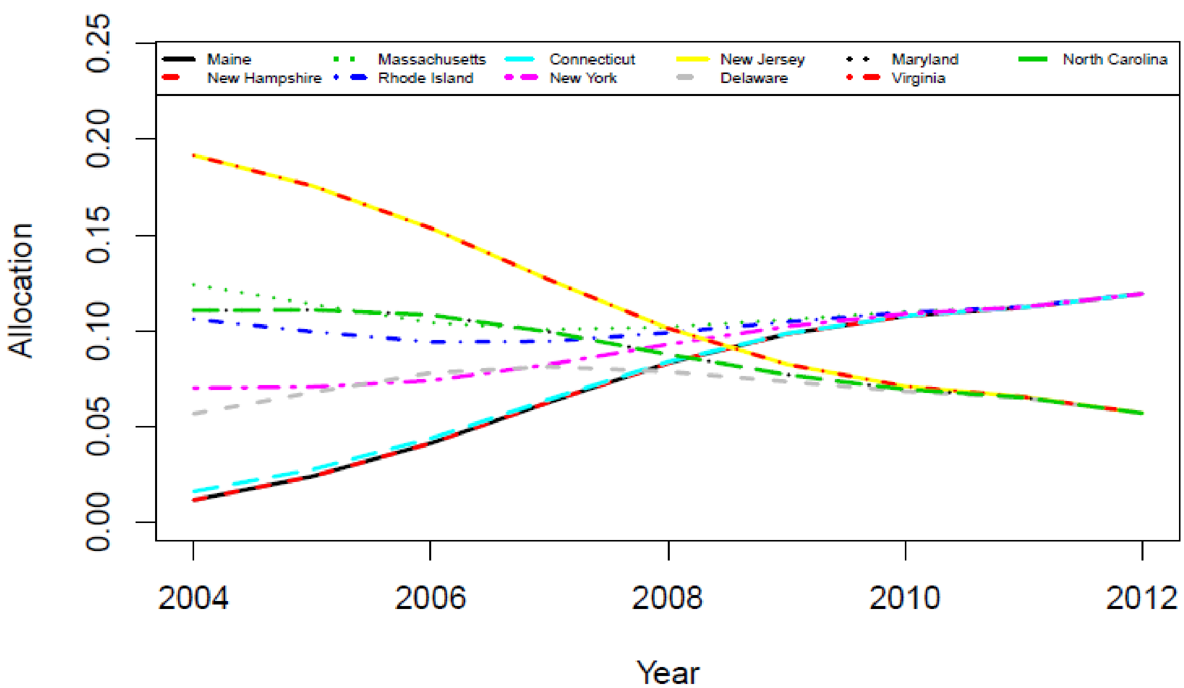

Figure 2. Updated September 27, 2019. Allocation trajectory for all states under the parameters outlined in example 1a above (equal distribution to the states of regional allocation adjustments). The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

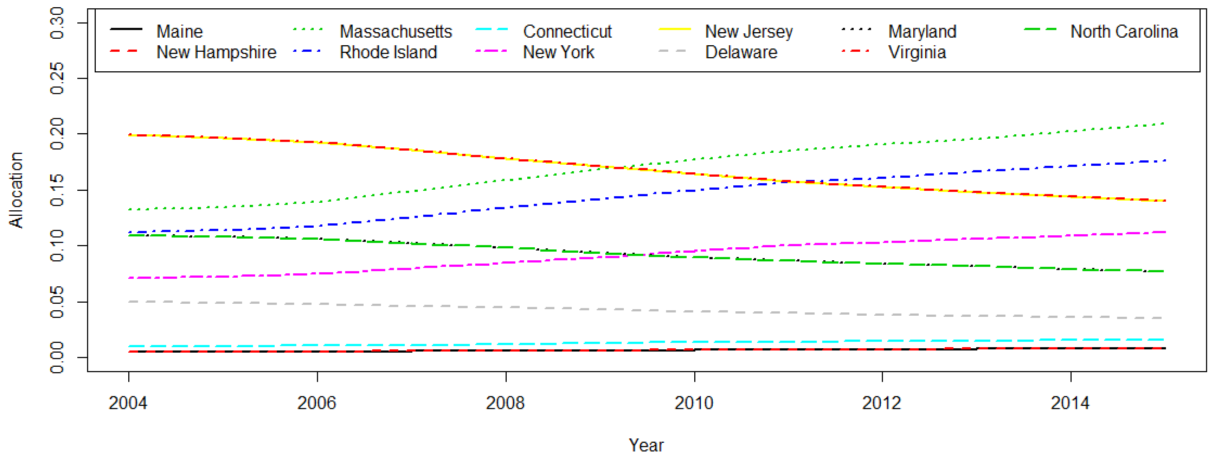

Figure 3. Allocation trajectory for all states under the parameters outlined in example 2 above. The control rule is triggered in each year from 2012 through 2015 in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

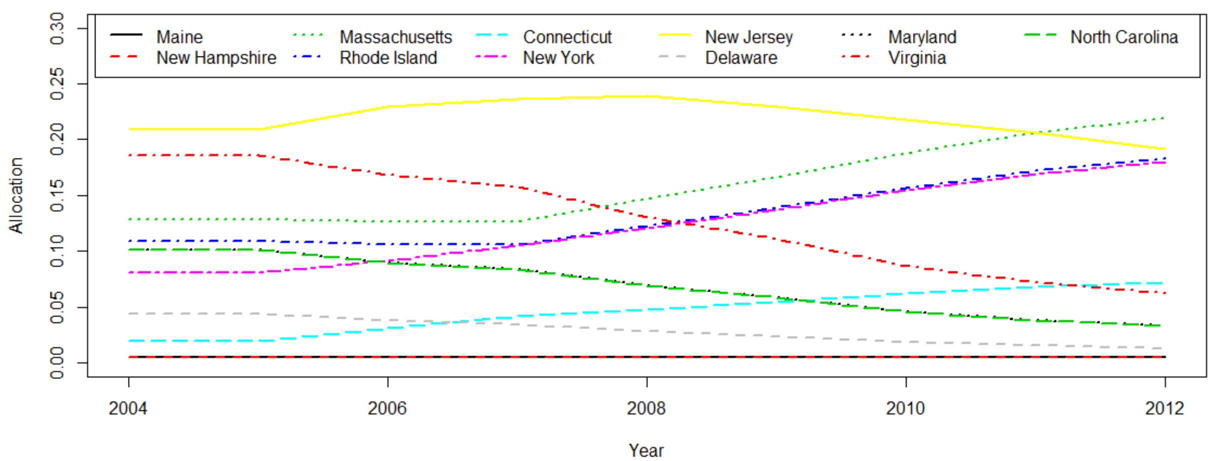

Figure 4. Allocation trajectory for all states under the parameters outlined in example 3 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

2. TMGC Considerations

There are two options for calculating the resource distribution. The first option is to use the spatial stock assessment to determine the amount of resource in each region (north = NY, CT, RI, MA, NH, ME; south = NJ, DE, MD, VA, NC). The spatial stock assessment calculates north and south spawning stock biomass values, which can then be turned in to a proportion. The benefit of this approach is the regional biomass values are calculated through a synthesis of many biological parameters and represent the best available science for the population. The drawback is that the assessment is updated periodically (not every year); thus updated resource distribution could not be produced annually but would depend on the assessment cycle[1]. Additionally, if the spatial stock assessment were to fail at some point in the future, this could impact the ability to implement the dynamic allocation calculations.

As an alternative to using the stock assessment information, values for resource distribution could be obtained and calculated using scientific surveys, with results apportioned into regions. Since surveys are undertaken annually, the values for regional resource distribution could be recalculated and updated annually, biannually, or upon whatever timeframe is deemed most appropriate, affording an opportunity to regularly adjust allocations in sync with shifts in resource distribution. Such shifts may, or may not, follow consistent trends. Accordingly, the technique affords a dynamic approach, consistent with actual changes in resource distribution as defined by the survey information. There are more options with regard to the regional configurations that could be established with this approach, whereas a two-region configuration is the only option with the assessment. The overall benefit of this approach is that it could be performed annually with the most contemporary data. The drawback is that survey data are prone to variability. Smoothing techniques and the proposed control rule are designed to account for some of this variability and prevent it from causing unreasonable changes in a single year.

C. Trigger Approach

The second approach the PDT discussed is a quota trigger approach. In this approach, a minimum coastwide quota would be established as a trigger for a change in allocations to the states. If the coastwide quota established by NOAA Fisheries in a given year were higher than the established quota trigger, then the quota would be distributed to the states in two steps: 1) the amount of coastwide quota up to and including the trigger is distributed to the states according to the current state-by-state allocations, as set forth in Amendment 13 in 2003; and 2) the amount of quota exceeding the established trigger is distributed equally to the states of Massachusetts through North Carolina, with Maine and New Hampshire receiving a smaller percentage based on their historically low participation in the fishery. Should the annual coastwide quota be less than or equal to the established quota trigger, allocation percentages would default to the current state-by-state allocations. This method limits fishery disruption by guaranteeing states some minimum level of quota based upon the 2003 allocations.

Two potential quota trigger options have been proposed: 3 million pounds, or 4 million pounds. The 3 million pound trigger represents approximately the average coastwide commercial quota from 2003 through 2018. Years in which specifications were set using a constant catch approach were excluded from the average (i.e., 2010-2015). Commercial quotas remained essentially the same from 2010 until 2013 when there was a slight change in the coast-wide quota established by the SSC in 2013 however, that was merely an extension of the constant catch that extended until 2016. The average commercial quota from 2003 through 2018 is 3.12 million pounds.

The 4 million pound trigger represents approximately the highest commercial quota from 2003 through 2017. The highest commercial quota was 4.12 million pounds in 2017. A 3 million pound trigger is lower than 10 out of the last 13 years (2008-2019) of coastwide commercial quotas established by the National Marine Fisheries Service. A 4 million pound trigger is higher than all but one year of coastwide

[1] The Northeast Region Coordinating Council approved an assessment prioritization process and management assessment track schedule in November 2018 that would provide management assessments for black sea bass every two years. Following the upcoming operational assessment, the next assessment would be available in 2021, with information available for management in 2022-2023.

commercial quotas in the last 13 years (Figure 5). Table 2 shows an example of the quota trigger approach using a 3 million pound trigger and the 2017 coastwide quota of 4.12 million pounds. Additional quota trigger examples are provided in Appendix C.

Figure 5. Commercial BSB Quota over Time Compared to 3M Pound and 4M Pound Triggers

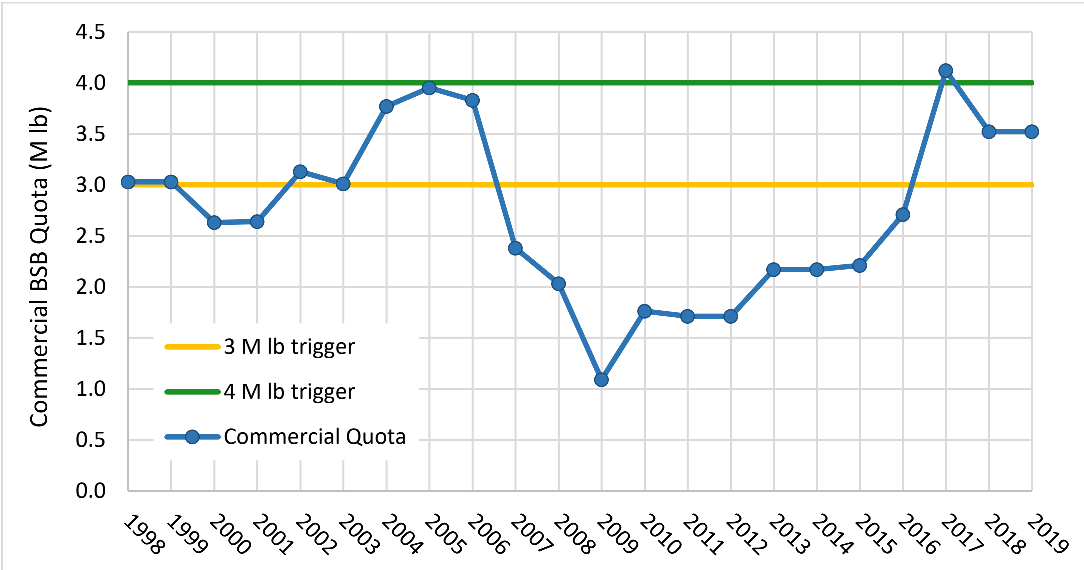

Table 2. Reallocation of black sea bass commercial quota above a 3 million pound trigger, based on the 2017 coastwide quota of 4.12 million pounds.

3 Million Pound Trigger					
State	**Current allocation (%) of quotas up to and including 3 million lbs**	**Status Quo distribution of first 3 million lbs of quota**	**Allocation (%) of additional quota beyond 3 million lb**	**Example state allocations (lbs) under a 4.12 million lb quota**	**Example state allocations (%) under a 4.12 million lb quota**
ME	0.5%	15,000	1.00%	26,200	0.64%
NH	0.5%	15,000	1.00%	26,200	0.64%
MA	13.0%	390,000	10.89%	511,956	12.43%
RI	11.0%	330,000	10.89%	451,956	10.97%
CT	1.0%	30,000	10.89%	151,956	3.69%
NY	7.0%	210,000	10.89%	331,956	8.06%
NJ	20.0%	600,000	10.89%	721,956	17.52%
DE	5.0%	150,000	10.89%	271,956	6.60%
MD	11.0%	330,000	10.89%	451,956	10.97%
VA	20.0%	600,000	10.89%	721,956	17.52%
NC	11.0%	330,000	10.89%	451,956	10.97%
Total	**100.0%**	**3,000,000**	**100%**	**4,120,000**	**100.00%**

1. Trigger Approach Variations

The PDT noted that the initial trigger approach proposals do not directly address the first problem identified in the Working Group's Report: the distribution of biomass has changed significantly since the state allocations were established in 2003, and the allocations do not reflect these changes. Changes in biomass distribution are supported by the 2016 stock assessment and peer reviewed literature.

To better address these changes within a trigger approach, the PDT discussed a modification that would distribute quota above the trigger based upon the proportion of coastwide biomass in each region, as informed either by the assessment models or fishery independent survey data. Fishery independent survey data may be required if the benchmark assessment regional model framework cannot produce valid regional results after inclusion of the updated MRIP estimates. The terminal year of the assessment can be used if retrospective bias adjustments to the assessment outputs of SSB are required, or the last three years of the assessment can be averaged if no adjustment is necessary. Tables 3-4 in Appendix C show examples of allocation above the trigger based on regional biomass, using the Rho adjusted regional model outputs from the terminal year of the 2016 benchmark assessment (2015). It should be noted that if this approach were selected, the Board would need to specify which regional biomass values to use. In the event that regional assessment outputs cannot or should not be used, a method to use fishery independent survey data must be developed – preferably one that utilizes a multi-year average or a smoothing approach (for instance, the approach described in the TMGC methods in Appendix B). The regional proportions used to distribute quota above the trigger should be updated every time appropriate new data is available.

Within the regions, quota above the trigger can also be distributed to individual states in different ways. One approach is to distribute quota above the trigger in equal shares to all states within the region (ME and NH receive a flat 1% of this additional quota from the northern region pool; this could be modified if they express increased interest in participating in the fishery) (Table 3, Appendix C). A second method would be to distribute quota above the trigger to all states within the region in proportion to their 2003 allocations (Table 4, Appendix C).

2. Trigger Approach Considerations

If a trigger-based approach is of interest, the Board would need to consider the most appropriate configuration based on the objective of reallocating black sea bass commercial quota. First, a quota trigger should be selected based on the amount of quota the Board feels should be distributed under the current allocations, versus the amount of quota that should be made available to the states using an alternative allocation scheme. The Board should also choose an allocation method for quota above the trigger that best addresses the issues facing the fishery (i.e. equal distribution of additional quota or distribution based on regional resource availability).

While the trigger approach as proposed establishes a hard quota of three or four million pounds, the PDT discussed the possibility of using a soft trigger, which would allocate a percentage of the quota using historical allocation, rather than a set number of pounds. Fluctuations in annual quota values would result in similar fluctuations in the poundage being allocated using historical values. For example, if a trigger is set at 50% of the quota, the historical allocations would apply to two million pounds of a 4 million pound quota, and 3 million pounds of a 6 million pound quota. Using a hard trigger, if the annual coastwide quota is below the trigger, then the full quota is allocated using the historic allocations. With a soft trigger, lower quotas would still allow some portion of the quota to be allocated using a distribution other than the historic allocations.

The PDT has explored several options for potential quota triggers, and allocation schemes for additional quota above the trigger. However, the Board may wish to consider alternative trigger levels or allocation schemes that are deemed more appropriate. Additionally, the size of the population and subsequent quota amounts may change due to the 2019 operational assessment for black sea bass. This should also be considered before selecting a trigger value if this method is eventually adopted.

D. Auctioned Seasonal Quota – *REMOVED per May 1, 2019 Board discussion*

E. Hybrid Approaches

In addition to the individual methods presented above, the PDT discussed hybrid approaches where the coastwide quota is allocated among the states using two or more methods. This could essentially be an extension of the trigger approach (a portion of the quota, either a fixed amount or a percentage, up to the trigger value is distributed using historic allocation, and any remaining quota is distributed using equal allocation or biomass distribution), but could incorporate other options as the Board wishes. Use of a hybrid approach may offer flexibility and compromise for different perspectives, but at the cost of increased complexity. For example, a hybrid approach that incorporates a trigger, equal allocation, and regional allocation could be developed that assigns a portion of the coastwide quota using historic allocation to account for existing markets and fishing communities, a portion distributed equally to each state, and a portion to each region based on biomass distribution. Considerations and decision points for any hybrid approach would include all the considerations and decision points of each of the individual methods being combined. Additionally, depending on how a hybrid approach is developed, the drivers behind allocation adjustments could become unclear and difficult to track. Consideration of transparency is needed if selecting a hybrid approach, and additional work by the PDT may be required to clearly identify the impacts of each element of the approach.

III. Discussion

Throughout their discussions of each management strategy described above, the PDT highlighted a number of decision points the Board may need to consider in selecting the appropriate management programs for continued development. To come to a decision on some of these issues, it may be helpful to first define the Board's intention in considering changes to the black sea bass state-by-state allocations. Agreeing on a clear intention may guide the Board in focusing on the management strategies that best align with the objectives the Board seeks to meet.

Thus, the first general decision point would be to determine what the Board's goals are with regard to considering reallocation of the state-by-state commercial quotas. The key issue identified by the Commercial Working Group is that state commercial allocations implemented in 2003 do not reflect the current distribution of the resource. If the Board's goal is to address this issue by adjusting state-by-state commercial allocations to be more reflective of the current distribution of the resource, then the Board may want to focus on those strategies that incorporate regional information on resource distribution. If the Board's primary goal is to maintain historic access to the fishery, then it could consider options that place more weight on historic landings.

When considering approaches that address changes in resource distribution, another decision point arises in both the TMGC approach and the modified trigger approach: how to distribute quota to states within regions. Two general methods were discussed: equal distribution of regional quota, or distribution based on historic allocation. Though the PDT did not explore additional methods, it may be appropriate to consider distributing quota to states within the regions in a different way, depending on the purpose of reallocation. For example, if the Board aims to create more equality within the regions with regard to state quotas, then equal allocations of additional quota to the states in each region may be more appropriate (see TMGC Example 1a, and trigger Table 3, Appendix C). Alternatively, if the Board aims to maintain state access based on historic landings, it may be preferable to distribute quota to the states within each region based on their current allocations (see TMGC Examples 1 and 2, and trigger Table 4, Appendix C). Some compromises between these two goals could be addressed through a hybrid approach.

As mentioned in the considerations for the TMGC and modified trigger approaches, the ability to use regional biomass information from the stock assessment may change. It is uncertain whether incorporation of the new MRIP data will still produce biomass estimates for the northern and southern stock subareas. If not, it may be necessary to use survey information to do any resource distribution based approach. The Board should consider the implications of using either source of information to adjust allocations according to regional biomass. If regional biomass information from the stock assessment is available, the Board may need technical guidance on the most appropriate method for calculating regional proportions.

Another decision point the PDT discussed is regional configuration. In particular the group focused on how to incorporate Maine and New Hampshire, considering their historically low participation in the fishery, and how to incorporate New Jersey, as its geographic location adjacent to Hudson Canyon makes it difficult to place it in either the northern or southern spatial subarea of the stock. The PDT analyzed options that maintain static or proportionally lower allocations for Maine and New Hampshire, but these could be modified if the states were to express an interest in increased participation. The PDT also discussed potential methods for treating New Jersey as a stand-alone region, if deemed more appropriate than including it in the Southern Region. If a regional approach is taken, the Board should determine the most appropriate regional configuration.

The PDT also discussed the issue of stability in state commercial allocations. In prior discussions at the Working Group and Board level, some states expressed concerns about abrupt allocation changes that could disrupt the fishery. To better understand what constitutes abrupt change in order to avoid such disruptions, it may be helpful to define minimum quotas, or the maximum percent change per year with which the states would be comfortable. For comparison, Table 3 shows the coastwide quotas, and magnitude of change in quotas from year to year since 2003. On average, the coastwide quotas (and therefore the state quotas) have changed by 22% per year, excluding years where the constant catch approach was applied. It is important to bear in mind that state-by-state and coastwide quotas will continue to vary depending on the status of the stock, regardless of whether state-by-state allocations are modified.

Lastly, the PDT noted it could be important to establish a better understanding of where the fishery is occurring, and whether that has changed over time. Due to time limitations, the PDT was only able to analyze estimated commercial landings by state, year, and statistical area provided by the ACCSP. Preliminary results of this analysis are provided in Appendix D. If desired, the Board may request additional analysis of spatial data on black sea bass landings and or trips.

Table 3. Magnitude of annual change in black sea bass commercial quotas.

Year	Coastwide Quota (pounds)	% Change from Previous Year (absolute value)
2003	3,024,545	-
2004	3,768,575	25%
2005	3,966,345	5%
2006	3,832,312	3%
2007	2,385,390	38%
2008	2,025,763	15%
2009	1,093,190	46%
2010	1,758,610	61%
2011	1,711,080	3%
2012	1,710,000	0%
2013	2,174,312	27%
2014	2,174,312	0%
2015	2,212,923	2%
2016	2,702,867	22%
2017	4,120,000	52%
2018	3,520,000	15%
2019	3,520,000	0%
Average (excl. constant catch years)**		**22%**
Average (2016-2019)		**22%**

* Final adjusted quota after RSA

**Constant catch approach was used from 2010 to 2015

Appendix A. Black Sea Bass Commercial Working Group Report, February 2019

Working Group Members: David Borden (Chair, RI), Nichola Meserve (MA), Matthew Gates (CT), Joe Cimino (NJ), Rob O'Reilly (VA)

ASMFC Staff: Caitlin Starks, Toni Kerns

Additional Attendees: Julia Beaty (MAFMC), Greg Wojcik (CT), Jason McNamee (RI), Tiffany Vidal (MA)

Statement of the Problem

The working group has identified two problems associated with the current FMP. First, the commercial black sea bass allocations to the states were originally implemented in 2003 as part of Amendment 13, loosely based on historical landings from 1980-2001. The state shares in Amendment 13 allocated 67% of the coast-wide commercial quota among the states of New Jersey through North Carolina (North of Cape Hatteras) and 33% among the states of New York through Maine. These state commercial allocations have been unchanged for 15 years. Meanwhile, the resource has experienced shifts in distribution and abundance, and changes in fishing effort and fishing behaviors have occurred.

There is scientific information to support these shifts. For example, according to the last black sea bass stock assessment, which modeled fish north and south of Hudson Canyon separately, the majority of the stock occurred in the south prior to the mid-2000s. Since then the biomass in the north has grown considerably and currently accounts for the majority of spawning stock biomass (Figure 1). While the region specific models created for the assessment were never intended to be stand-alone, this shift in black sea biomass distribution has been supported by peer reviewed journal articles (e.g., Bell et al., 2015).

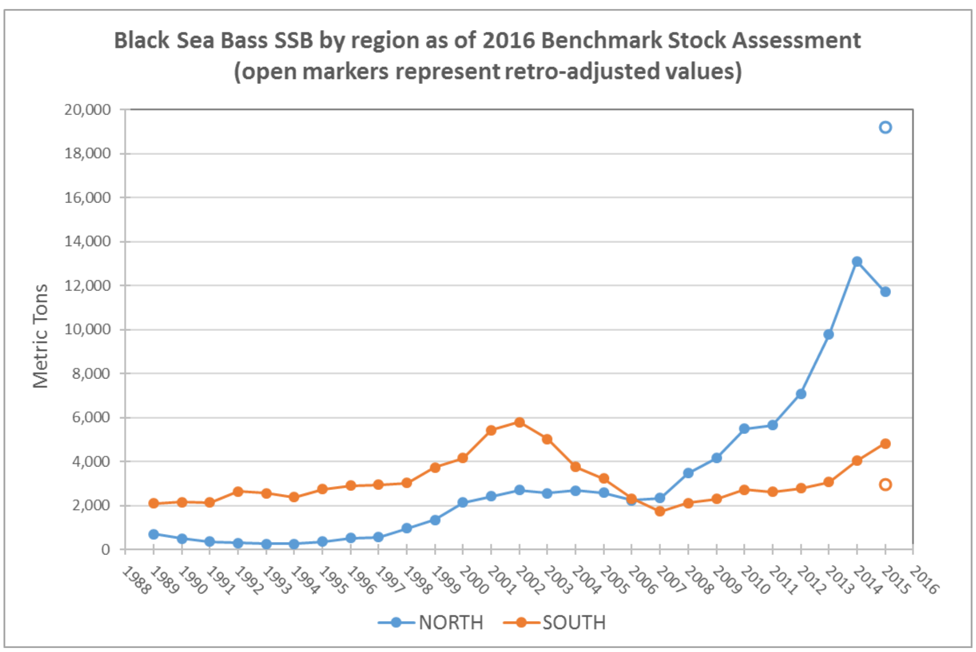

Figure 1: Black Sea Bass SSB by Region, 1989-2016. Source: 2016 Black Sea Bass Stock Assessment.

In some cases, expansion of the black sea bass stock into areas with historically minimal fishing effort has created significant disparities between state allocations and current abundance and resource availability. The most noteworthy example is Connecticut, which has experienced significant increases in black sea bass abundance and fishery availability in Long Island Sound in recent years but was only allocated 1% of the coastwide commercial quota based on landings from 1980-2001.

Any consideration of management changes by the Commission should be responsive to shifts in in black sea bass distribution, abundance, behavior, fishing effort and harvest by gear type. However, there are many additional factors requiring rigorous discussion and evaluation should reallocation be considered. Changes in allocations should take into account the following considerations and issues:

1. Allocations should be reviewed and revised on a regular basis to ensure equity of access and improve fishery efficiency (human safety, fuel use, and discards), using the latest and most appropriate data sources.
2. Changes in allocations should be linked to stock assessments to the extent practicable, or use other peer reviewed data sources. If such sources are unavailable, other scientific information such as state and federal survey indices could be used.
3. The relatively recent shift in spawning stock biomass does not mean that future abundance dynamics will proceed in the same manner, especially since a strong or weak year-class can provide an increase or decrease in abundance throughout the range or a portion of the range.
4. For states where resource availability has shifted significantly in recent years, the current allocations may provide either a disproportionate advantage or disadvantage if used as the basis for allocation adjustments (e.g. Connecticut's 1% allocation). Small changes to the original allocations may not reflect resource abundance, thus, adjustments may need to be made using a formula other than a simple percent change.
5. Participants in different areas have invested in the commercial fishery based on historic landing patterns as well as state management programs. For example, some mid-Atlantic states have adopted management through Individual Transferrable Quotas (ITQs), and the industry has invested in these fishing rights and infrastructure. To avoid unnecessary economic hardships and enhance the ability of the industry to respond and make long term business decisions, slow or gradual implementation of allocation changes should be considered.
6. Due to the high abundance relative to current allocations in the northern area, some states have lengthy closures that promote discards. Any reallocation formula should consider these factors and attempt to reduce closures and discards.
7. Review and reevaluation of commercial quota allocations should not occur in a vacuum and should take into account changes in recreational information. In particular, new recreational harvest estimates should be incorporated into the stock assessment before commercial changes are adopted.

A second problem relates to the provision in the FMP that prescribes a coastwide black sea bass quota managed by NOAA Fisheries. Under the current regulations, all states in the management unit are subject to fishery closures if a coastwide quota overage occurs, despite state-by-state quota management by the ASMFC. These closures can leave states with remaining commercial quota, especially ITQ, unable to utilize their full allocation of the resource. Management should aim to reduce impacts of state-specific commercial quota overages to other states. The working group recommends that the Mid-Atlantic Council consider actions to address this issue. For example, the working group suggested the Council consider allowing conservation equivalency for the commercial fishery, similar to what is allowed for recreational black sea bass and summer flounder.

Objectives and Goals to Address the Problem

The WG identified the following as management objectives for commercial black sea bass:

- Ensure fishing mortality and spawning stock biomass are maintained within established thresholds and targets, and the stock is not overfished nor experiencing overfishing
- Improve equity in access to the fishery among the states
- Improve fishery efficiency (e.g. use of time, fuel and other resources; reducing discards)

The WG discussed the need to determine what metric(s) would be used to evaluate equity in access to the fishery. Some ideas discussed were socioeconomic benefits or opportunities, as well as resource availability related to the distribution of exploitable biomass and abundance. The WG noted discard reductions and increased efficiency would likely result from allocations based on more current information on the resource's distribution along the coast. However it was noted that fishery efficiency may also be impacted by factors other than resource allocation (e.g., allowances to possess multiple states' limits in the same trip).

The WG proposed the following information, particularly for recent years, should guide further development of management objectives and strategies.

- Descriptions of each state's fishery including but not limited to: management program, participation, effort, landings by gear, distribution of landings and trips, commercial size distribution, and socioeconomic information
- A comprehensive review of survey data for black sea bass to inform understanding of stock biomass/abundance distribution and availability to state commercial fisheries
- Current scientific information on the geographic shifts in black sea bass biomass

Potential Management Strategies

The WG agreed a wide range of options should be considered, and that some management strategies may require coordination with the Mid-Atlantic Fishery Management Council. Some of the ideas the WG supported exploring further included:

1. Adjustments to the state-by-state allocations. Potential options include:
    a. Status quo
    b. Dynamic approach modeled after the Transboundary Management Guidance Committee (TMGC) approach (Appendix I)
2. Defined timeline or trigger for reevaluation of allocations
    a. Future consideration of a strategy similar to the scup model to increase equitability in access for federal vessels (i.e. winter coastwide quota management and summer state-by-state quota management) (Appendix II)

As indicated in the problem statement, consideration should be given to how management approaches may impact fishery stakeholders in each region, and efforts made to balance negative economic impacts with enhanced equity and efficiency of the fishery along the coast.

Appendix B. TMGC Approach

Proposed New Allocation Alternative For Black Sea Bass: Dynamic Transboundary Approach

Black Sea Bass PDT

27 September 2019

Introduction

This proposal offers a new alternative for modifying the allocation of the commercial black sea bass quota. It involves a dynamic approach for gradually adjusting state-specific allocations using a combination of resource utilization (historical allocations) and current levels of resource distribution. The alternative is modeled after the Transboundary Management Guidance Committee (TMGC) approach, which was developed and used for the management of shared Georges Bank resources between the United States and Canada.

As noted by Gulland (1980), the designation of units for management entails a compromise between the biological realities of stock structure and the practical convenience of analysis and policy making. For black sea bass, the Atlantic Coast states from North Carolina to Maine - acting through and by the MAFMC, ASMFC, and GARFO – use a single management unit encompassing the entire region occupied by the stock, from the southern border of North Carolina northward to the U.S.- Canadian border. While there is a general scientific consensus that the black sea bass population has shifted its center of biomass to the northen portion of its range (Bell et al. 2014 and NEFSC 2017), the current management structure, as reflected by current state-by-state allocations, does not recognize this new population dynamic.

This new alternative sets forth an approach that balances stability within the fishery, based on historical allocations, with gradual adjustments to the fishery, based on regional shifts in resource distribution emanating from updated stock assessments or surveys. The approach affords considerable flexibility, both with regard to initial configurization and application over time. A key feature involves the use of control rules to guard against abrupt shifts in allocations.

This new alternative draws upon established principles of resource sharing, which include consideration of access to resources occurring or produced in close spatial proximity to the states in the management unit and historical participation in the exploitation of the resources (Gavaris and Murawski 2004). The former has emerged from the changing distribution of the black sea bass resource and the effects this creates within the fishery. The latter recognizes traditional involvement and investment in the development of the fishery since the the beginning of black sea bass joint management in 1996. Both principles were incorporated in the TMGC approach; historical participation was initially afforded primary emphasis, then gradually down-weighted so that, after a nine-year phase-in period, the annual allocation was based primarily on resource distribution (Murawski and Gavaris 2004). The approach proposed here for black sea bass is similar; the proposal envisions a gradual transition, giving more weight to historical participation at first, then slowly phasing in the distributional aspects over time, and then implements changes to state specific allocations through a two-step process.

Details for the calculations used for the TMGC approach were described by Murawski and Gavaris (2004). Modifications to that approach are necessary, given key differences between the shared Georges Bank resources and the shared black sea bass resource. Those differences include the state-by-state allocation system currently in place for black sea bass, the need to translate from regional to state-specific allocations, and the need to accomodate multiple jurisdictional differences in the fishery.

This new alternative proposes use of existing state-by-state allocations to reflect initial values for historical participation (aka resource utilization) and proposes use of the 2016 benchmark stock assessment results(NEFSC 2017) to determine the values for resource distribution; the two values are then integrated in the form of regional shares. An alternative to using the stock assessment would be to use synoptic trawl survey information. This potential alternative is described in more detail below. The two regions as defined in the assessment are proposed: (1) ME - NY, (2) NJ - NC. They emanate from the spatial stratification of the stock in to units that generally align with those used for the assessment, which used the Hudson Canyon as the dividing line based on several pieces of evidence that stock dynamics had an important break in this area. These regional shares are then sub-divided into state-specific allocations.

The overall approach can be modified by the Board and Council in various ways. For example, sub-alternatives can be developed for:

- the regional configuration (e.g., other regions beyond those proposed here);
- the values for historical participation/resource utilization (e.g., current, status quo allocations, or some variant thereof);
- the percentage weighting values for Resource Utilization and Resource Distribution (90:10, or some variant thereof);
- the increment of change in these values from one year to the next (10%/year, or some variant thereof;
- the periodicity of adjustments (e.g., annually vs. biannually); and
- the overall time horizon for the transition (e.g., 9 years vs. 18 years).

The control rule can also be evaluated via two or more sub-alternatives (e.g., a cap that's higher or lower than 10%).

Data and Methods

Formula

Adapted from the TMGC application (TMGC 2002), the approach for calculating the respective regional shares, which takes historical utilization in to account and adapts to shifts in resource distribution, is as follows:

$$\%RegionalShare = (\alpha_y * \sum_r StateSpecAlloc) + (\beta_y * \%ResDistr_{r,y}) \quad (1)$$

Where α_y = percentage weighting for utilization by year; β_y = percentage weighting for resource distribution by year; $\alpha_y + \beta_y = 100\%$; $StateSpecAlloc$ = state specific allocation; $ResDistr$ = resource distribution; r = region; y = year

Proposed regions:
Two regions are proposed: (1) ME - NY, (2) NJ - NC.

Proposed values for historical participation/resource utilization:
See Resource Utilization section below.

Proposed values for resource distribution:
The current proposal is to use the distribution in the two regions based on the stock assessment biomass calculations. This could be altered to use synotpic trawl survey information, therefore resource distribution would be based on most recent trawl survey information in that case.

Proposed percentage weighting values for resource utilization and resource distribution:
The initial sharing formula is proposed to be based on the weighting of resource utilization (from historical allocations) by 90% and the weighting of resource distribution by 10%. Additional alternatives are prtesented below.

Proposed increments of change in the weighting values from one adjustment period to the next: Initially proposed at 10% per period. Thus, 90:10 to begin, then: 80:20, 70:30, 60:40, 50:50; 40:60; 30:70; 20:80, concluding at 10:90. Other alternatives are tested below.

Proposed periodicity of the adjustments:
Bi-annually based on stock assessment updates. If the survey alternative were used, this could be increased to annually.

Overall time horizon for the transition:
The initial proposal would conclude in 9 years. If commenced in 2020, it would conclude in 2028

With these - or alternative - parameters assigned, the region-specific shares then need to be prorated into the existing state-specific allocation structure. This can be accomplished by:

$$NewStateAllocation = \frac{Allocation_s}{\sum_r StateSpecAlloc} * \%RegionalShare \quad (2)$$

Where $Allocation_s$ = the specific state being calculated

Resource Utilization

Historical state-specific commercial allocations for black sea bass are codified in Amendment 13 to the Fishery Management Plan for Black Sea Bass (FMP) (MAFMC 2003) (Table 2). These allocations can serve as the basis for the resource utilization values in the allocation formula. These values, as used in the formula, would remain consistent throughout the reallocation process, even as the final state allocations change over time, based on equations 1 and 2. This is philosophically consistent with the FMP, as this portion of the allocation formula is meant to represent the historical fishing aspects of the black sea bass fishery.

However, alternative strategies (set forth in the form of sub-alternatives) could be used to set the initial allocation design. That is, the initial resource utilization portion of the allocation design could be adjusted, via revised state allocations, before transitioning into the formulaic approach to be used as the process moves forward.

One way to implement this type of approach would be the following, working from equation 2 above:

$$NewStateAllocation = \frac{Allocation_s + \lambda_s}{\sum_r StateSpecAlloc} * \%RegionalShare \quad (3)$$

Where λ = a state specific allocation additive or reduction factor and s = the state being calculated.

This formula allows for a shift in initial (status quo) allocations to account for potential discrepencies believed to be represented in the existing allocations.

Resource Distribution

This proposal offers two options for calculating the resource distribution. The first option would be to use the spatial stock assessment to determine the amount of resource in each region (north = NY, CT, RI, MA, NH, ME; south = NJ, DE, MD, VA, NC). The spatial stock assessment calculates a north and south biomass value, which can then be turned in to a proportion. The benefit of this approach is this number is calculated through a synthesis of many biological parameters and represents the best available science for the population. The drawback is that the assessment is updated periodically (not every year), therefore the information will not be evaluated every year, but would depend on the assessment cycle. Additionally, if the spatial stock assessment were to fail at some point in the future, this would impact the ability to do the dynamic allocation calculations. The current estimated allocation from the benchmark assessment would be 6,800 MT (January 1 biomass) in the south, 17,000 MT (January 1 biomass) in the north, equating to 29% of the biomass in the south and 71% of the biomass in the north (NEFSC 2017). It is important to note that these are the unadjusted biomass amounts from the assessment. Since data are readily available for this option, an example calculation and projection has been developed below. The process set forth below addresses total biomass, but it could be modified (and presented as a sub-alternative) to address exploitable biomass.

As an alternative, values for resource distribution can be obtained and calculated using scientific surveys, with results apportioned into regions. Since surveys are undertaken annually, the values for resource distribution, by region, can be recalculated and updated annually, biannually, or upon whatever timeframe is deemed most appropriate, affording an opportunity to regularly adjust allocations in sync with shifts in resource distribution. Such shifts may, or may not, follow consistent trends. Accordingly, the technique affords a dynamic approach, consistent with actual changes in resource distribution. Drawing upon the TMGC approach, a swept area biomass, considered a relative index of abundance, can be computed in each stratum, then summed to derive the biomass index for each region. The biomass index estimate derived from each survey would represent a synoptic snapshot of resource distribution at a specific time during a year. Combining the results of multiple surveys requires an understanding of seasonal movement patterns and how much of the biological year each survey represents. For this reason, it is proposed to use the National Marine Fisheries Service (NMFS) Trawl Survey in combination with the North East Area Monitoring and Assessment Program (NEAMAP) Survey. These are both well-established surveys, currently used in the stock assessment, and are synoptic, covering both offshore and inshore strata. As proposed in this alternative, the existing survey strata could be used to partition the survey information into two stock regions: (1) ME - NY, and (2) NJ - NC. The strata do not align perfectly with these two spatial configurations, but they are relatively close (Figures 1 and 2). Table 1 provides an example of how the strata could be applied for each region.

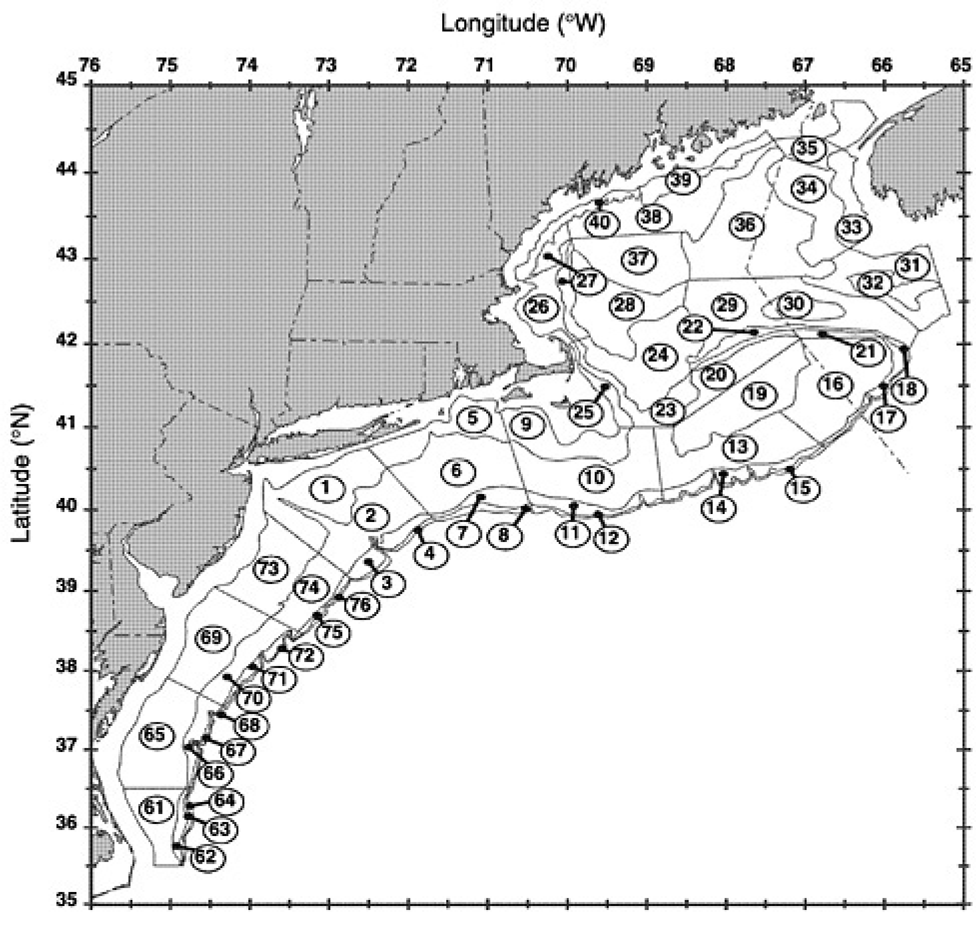

Figure 1: Map of National Marine Fisheries Service trawl survey strata.

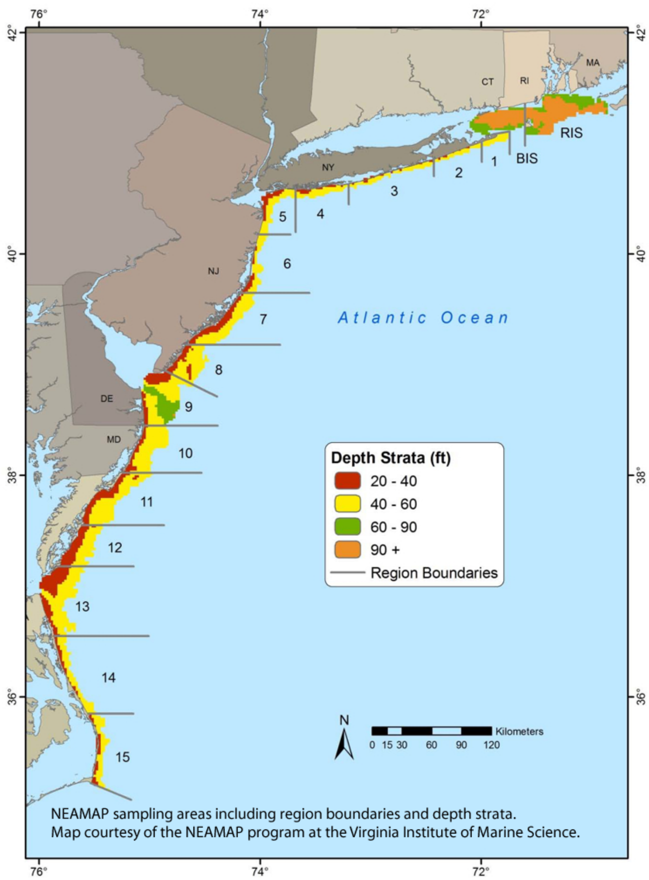

Figure 2: Map of North East Area Monitoring and Assessment Program trawl survey strata.

Table 1 - Strata or Region assigned to each region for resource distribution calculations.

Regions	NMFS Strata	NEAMAP Regions
Region 1: ME - NY	1 - 40	1 - 5, BIS, RIS
Region 2: NJ - NC	3, 61 - 76	6 - 15

*Note: This is a first cut, these should be finalized through discussions between the TC and survey staff.

This approach could be refined over time by developing area polygons that better align with the boards desired regional configuration. Then, using the spatial information from the surveys, the survey information could be partitioned into the polygons.

Additionally, there may be ways to use state survey information within the analysis – either directly by averaging those surveys into the swept area biomass calculations, or indirectly such as using them to verify or corroborate the information from the surveys used in the calculations. Such use of state survey information could be developed and integrated into the process over time via analysis and recommendations from the monitoring and technical committees.

A robust, locally weighted regression algorithm (Cleveland 1979), referred to as LOESS, could then be used to mitigate excessive variations in sampling results. Per the TMGC approach, a 30% smoothing parameter could be used. That level of smoothing was chosen because it reflected current trends, was responsive to changes, and provided the most appropriate results for contemporary resource sharing. The recommended default of two robustness iterations also was adopted (Cleveland 1979) in the TMGC approach and could also be adopted here. Resource distributions could then be updated annually by incorporating data from the latest survey year available and dropping data from the earliest survey used in the previous year so that a consistent window of data is maintained. After the surveys are combined, the LOESS smoother would be applied to the survey data. The fixed resource utilization (90% weighting in year 1) and the most recent resource distributions as calculated by the surveys (10% weighting in year 1) can then be applied to the sharing formula to determine regional allocation shares for the upcoming fishing year.

The benefit of this approach is that it could be performed annually with the most contemporary data. The drawback is that survey data are prone to variability. The LOESS smoothing and the control rule set forth below are designed to account for some of this variability to keep it from causing unreasonable changes in a single year.

As a final nuance to the survey alternative, a sophisticated modeling approach could be developed to achieve the same information as above. Techniques like the use of the VAST model (Thorson 2015) have been shown to be appropriate for this type of an analysis and could be adopted, in lieu of the swept area biomass technique, as a method for calculating resource distribution by region.

For this proposal, the assessment technique will be used as there is actual data that can be used to examine an example. With additional work, a retrospective analysis using trawl survey information could be developed.

Control Rule

In addition to the formula for calculating the regional allocations and then translating into the state specific allocations, additional measures could be added by way of a control rule. Such measures would enable various checks and balances to be incorporated into the process to guard against unintended consequences.

One such control rule, proposed here, is to guard against any abrupt change occurring to any regional allocation in any given year (or other time frame), and thus minimize short-term impacts, by capping the amount of any annual or bi-annual change to the regional shares at 10%. This can be shown as:

$$\%RegionalShare = \begin{cases} 10\%, & \text{if } \Delta AnnualChange > 10\% \\ \%RegionalShare, & \text{if } \Delta AnnualChange \leq 10\% \end{cases} \tag{1}$$

The effect would be to ensure that any changes to allocations occur incrementally, even in a case of large shifts in resource distribution in any given year or period. This control rule serves as an additional layer of protection against large changes, in addition to the other factors outlined above that are also built in to contend with uncertainty and variability.

Flexibility

A key attribute of this proposed new approach for modifying the allocation system is its flexibility. All of the decision points set forth in this proposal, once agreed to, can be adjusted as the process moves forward. Such adjustments, emanating from routine reviews by the Board and Council, can address any of the range of parameters initially set by the Board and Council. The Board and Council could define how changes to the system would be considered and enacted moving forward - e.g., via Addenda and Frameworks, the specifications process, or some other mechanism. The ranges of parameters/issues that readily lend themselves to such adjustment include:

- The α and β parameters can be adjusted to change the way the utilization and distribution are weighted in the equation;
- The increment of change in the α and β parameters can be adjusted to increase or decrease the transition speed;

- The time horizon for the transition can be changed;
- The initial state allocations can be set at status quo, or shifted to accommodate various objectives; and
- The control rule can be adjusted to be more or less protective of incremental changes.

Given such flexibility, the Board and Council could decide to implement a transition program that begins in 2020, with either current, status quo allocations, or some variant thereof, and based on assessment information through 2018 (same information used for the proposed 2019 operational stock assessment update), establish resource distribution values for each of the two regions. Using those parameters, and a weighting of allocations by 90% and resource distribution by 10%, enact new, slightly revised state-specific allocations for 2020. If the Board and Council opted for a transitional program involving 10% annual increments, until the weightings reached 10% utilization from historical allocations and 90% resource distribution, this sharing formula would transition from a 90:10 resource utilization-to-resource distribution weighting in 2020 to a 10:90 weighting by 2028. During every transitional period, the trawl survey information would be updated and factored into the resource distribution values. As such, each regional and associated state-specific adjustment would not necessarily be the same, whether in magnitude or direction.

Alternatively, the Board and Council could opt for a transitional program involving 10% increments every two years, or 5% annual increments, or 5% increments every two years, etc. Those alternatives would significantly slow the transition. Some of these variants are illustrated below as examples.

Example

The following are examples of how the new approach can be applied; it incorporates various proposed or strawman parameters, all of which can be modified upon review and consideration by the Board and Council:

- The assessment information is used to calculate the Resource Distribution values.
- Step 1: Apply the state-specific allocations and resource distribution information to equation 1.
  - Summed state allocations for Region 1 (sum of ME-NY)

```
sum.reg1
```

```
## [1] 0.33
```

  - Summed state allocation for Region 2 (NJ - NC)

```
sum.reg2
```

```
## [1] 0.67
```

- Step 2: Apply the Resource Distribution information to equation 1.
  - Strawman values:

```
dist.reg1 = 0.71
dist.reg2 = 0.29
```

- Step 3: Select α and β parameters for equation 1 for year 1:
  - The initial sharing formula is proposed to be based on the weighting of resource utilization (from historical allocations) by 90% and the weighting of resource distribution by 10%. Thus:

```
alpha = 0.9
beta = 0.1
```

- Step 4: Calculate the results, in the form of proportional regional shares, from equation 1:

```
# Region 1 equation and result
Reg1.Share = (alpha*sum.reg1) + (beta*dist.reg1)
Reg1.Share
```

```
## [1] 0.368
```

```
# Region 2 equation and result
Reg2.Share = (alpha*sum.reg2) + (beta*dist.reg2)
Reg2.Share
```

```
## [1] 0.632
```

  - This does not account for any change to the original allocations, see step 6 below.

- Step 5: Determine need to apply the control rule

```
# Control Rule
if (abs(Reg1.Share-sum.reg1) > 0.1 | abs(Reg2.Share-sum.reg2) > 0.1 ) {
  if (Reg1.Share-sum.reg1 > 0) {
    Reg1.Share = (sum.reg1*(0.1))+sum.reg1
    Reg2.Share = (sum.reg2*(-0.1))+sum.reg2

  }
  if (Reg2.Share-sum.reg2 > 0) {
    Reg1.Share = (sum.reg1*(-.1))+sum.reg1
  Reg2.Share = (sum.reg2*(0.1))+sum.reg2

  }

}
```

  - As proposed, the rule would cap any change at 10%. Since none of the resulting shares change by more than 10%, the control rule would not apply in this case.

- Step 6: Establish the state-specific allocation structure to be pro-rated by the regional shares. This example **does not** apply a λ value to alter the allocations per equation 3.
  - The state-specific allocations could be the current, status quo allocations; or they could be variants, established via equation 3.

Table 2 - Current state by state allocations.

State	Current Allocation
Maine	0.005
New Hampshire	0.005
Massachusetts	0.130
Rhode Island	0.110
Connecticut	0.010
New York	0.070
New Jersey	0.200
Delaware	0.050
Maryland	0.110
Virginia	0.200
North Carolina	0.110

Four hypothetical examples of state-specific allocations under the new program were performed and are presented below (Tables 3, 4, 5, and 6; Figures 3, 4, 5, and 6).

Example 1: The first example represents a configuration resulting in more liberal change in state allocations. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); resource utilization = status quo allocations ; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 90% weight on the resource distribution is 9 years; 10% control rule; distribution assumption is based on the biomass by region from the assessment for the time period of 2004 - 2012; distribution of adjustments to states within a region are based on historic allocations.

Example 2: Any TMGC configuration could also be modified to distribute the allocation adjustments equally to the states within each region, instead of distributing those adjustments proportionally to the historic state allocations. This example represents a configuration resulting in more liberal change in state allocations as noted in example 1. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); resource utilization = equal allocations to each state within the region; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 90% weight on the resource distribution is 9 years; 10% control rule; distribution assumption is based on the biomass by region from the assessment for the time period of 2004 - 2012; distribution of adjustments to states within a region are based equal distribution.

Example 3: The third example represents a more conservative configuration, with more limited changes to state allocations. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); resource utilization = status quo allocations; transition from 90:10 to 30:70; 5% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 70% weight on the resource distribution is 12 years; 3% control rule; distribution assumption is based on the biomass by region from the assessment for the time period of 2004 - 2015; distribution of adjustments to states within a region are based on historic allocations.

Example 4: The final example is intended to showcase a number of additional modifications that could be made to the approach to achieve certain objectives. In discussions amongst the PDT (and previously the Board regarding recreational black sea bass) it has been noted that it may be appropriate to treat New Jersey as an individual region due to its geographic position straddling the division of the Northern and Southern regions adjacent to Hudson Canyon. Additionally, some Board members have suggested modifying the "resource utilization" part of the equation to increase the allocations for Connecticut and New York due to their allocations being disproportionate to their current resource availability. Lastly, the PDT discussed the option of holding Maine and New Hampshire's current allocations static throughout the transaction. To demonstrate these modifications, the parameters are set as follows: 4 regions (ME and NH remaining as a non-dynamic region with static allocations; MA - NY; NJ as a stand-alone region; and DE - NC); resource utilization = CT and NY base allocations increased by 1% in each of the first three years; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments;

the transition time to 90% weight on the resource distribution is 9 years; 10% control rule; distribution assumption is based on the biomass by region from the assessment for the time period of 2004 - 2012, and assumes NJ is consistently 60% of the southern region distribution; distribution of adjustments to states within a region are based on historic allocations plus the incremental change as noted above.

The allocations presented in these tables would be different if any of the parameters were changed. Additionally, note that these examples are based on a scenario where the approach was implemented in 2004. The example shows how the system would work and the effects to the states over the initial period of adjustment from Resource Utilization having the highest weight in the equation to Resource Distribution having the highest weight during a period of time where the biomass was rapidly changing.

Table 3 - Allocation trajectory for all states under the parameters outlined in example 1 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012
Maine	0.005	0.005	0.006	0.006	0.007	0.008	0.009	0.009	0.010
New Hampshire	0.005	0.005	0.006	0.006	0.007	0.008	0.009	0.009	0.010
Massachusetts	0.134	0.139	0.149	0.168	0.187	0.206	0.224	0.240	0.268
Rhode Island	0.113	0.117	0.126	0.142	0.158	0.174	0.189	0.203	0.227
Connecticut	0.010	0.011	0.011	0.013	0.014	0.016	0.017	0.018	0.021
New York	0.072	0.075	0.080	0.090	0.101	0.111	0.120	0.129	0.144
New Jersey	0.197	0.193	0.186	0.171	0.157	0.143	0.129	0.116	0.095
Delaware	0.049	0.048	0.046	0.043	0.039	0.036	0.032	0.029	0.024
Maryland	0.109	0.106	0.102	0.094	0.086	0.078	0.071	0.064	0.052
Virginia	0.197	0.193	0.186	0.171	0.157	0.143	0.129	0.116	0.095
North Carolina	0.109	0.106	0.102	0.094	0.086	0.078	0.071	0.064	0.052

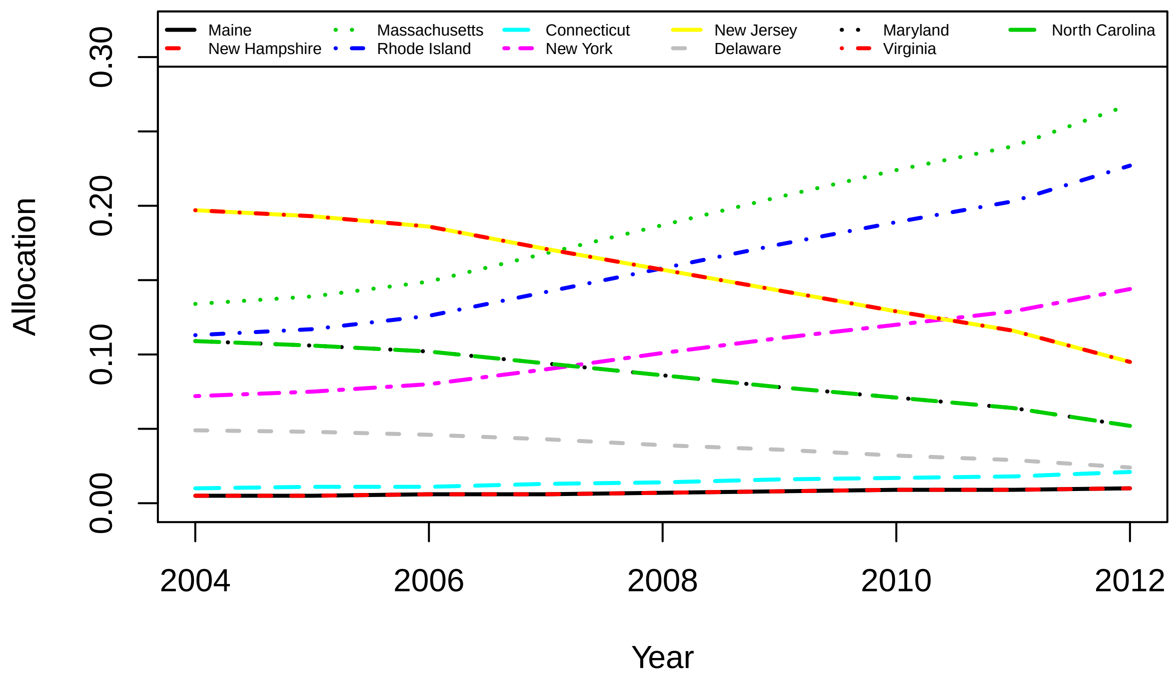

Figure 3: Allocation trajectory for all states under the parameters outlined in example 1 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

Table 4 - Allocation trajectory for all states under the parameters outlined in example 2 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012
Maine	0.012	0.024	0.041	0.063	0.083	0.098	0.108	0.112	0.119
New Hampshire	0.012	0.024	0.041	0.063	0.083	0.098	0.108	0.112	0.119
Massachusetts	0.124	0.114	0.104	0.101	0.102	0.106	0.110	0.113	0.119
Rhode Island	0.106	0.099	0.094	0.094	0.099	0.105	0.110	0.113	0.119
Connecticut	0.016	0.027	0.044	0.064	0.084	0.099	0.108	0.112	0.119
New York	0.070	0.071	0.074	0.082	0.093	0.102	0.109	0.112	0.119
New Jersey	0.192	0.176	0.154	0.127	0.101	0.083	0.071	0.065	0.057
Delaware	0.057	0.068	0.078	0.081	0.079	0.073	0.068	0.065	0.057
Maryland	0.111	0.111	0.108	0.099	0.088	0.077	0.069	0.065	0.057
Virginia	0.192	0.176	0.154	0.127	0.101	0.083	0.071	0.065	0.057
North Carolina	0.111	0.111	0.108	0.099	0.088	0.077	0.069	0.065	0.057

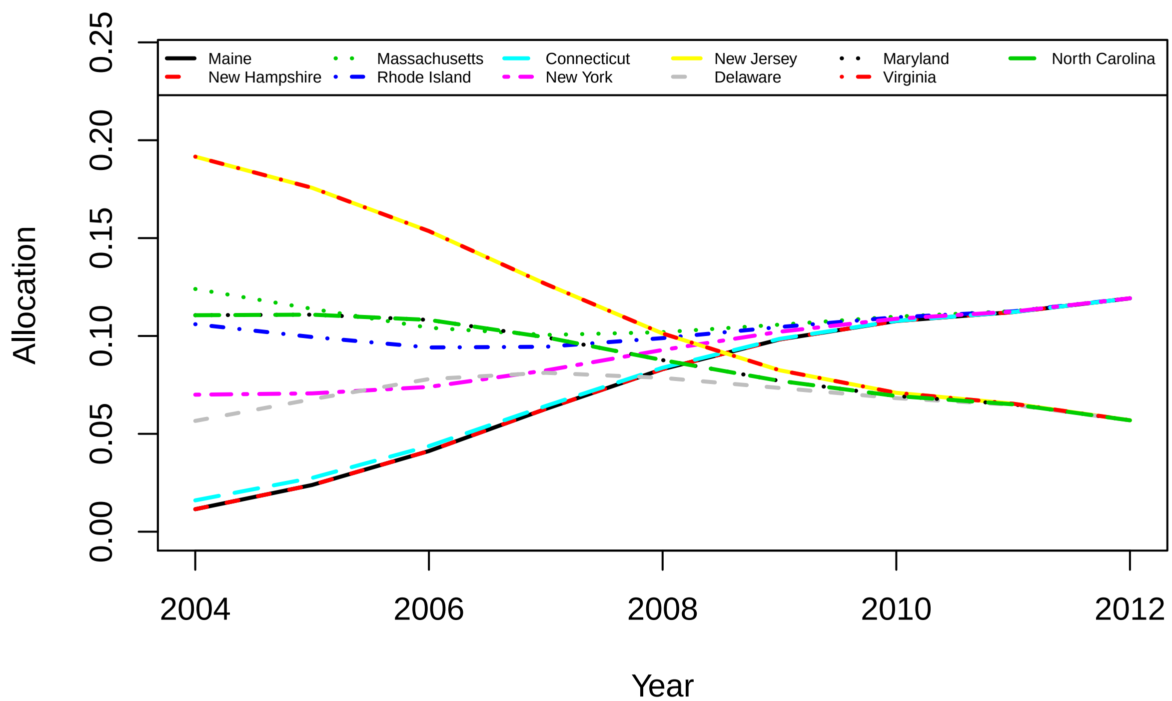

Figure 4: Allocation trajectory for all states under the parameters outlined in example 2 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

Table 5 - Allocation trajectory for all states under the parameters outlined in example 3 above. The control rule is triggered in each year from 2012 through 2015 in this example. This is a retrospective analysis as if this method were in place beginning in 2004. The control rule is triggered in 2012 - 2015 in this example.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Maine	0.005	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.008	0.008	0.008
New Hampshire	0.005	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.008	0.008	0.008
Massachusetts	0.132	0.134	0.139	0.149	0.159	0.168	0.177	0.185	0.191	0.196	0.202	0.209
Rhode Island	0.112	0.114	0.118	0.126	0.134	0.142	0.150	0.157	0.161	0.166	0.171	0.176
Connecticut	0.010	0.010	0.011	0.011	0.012	0.013	0.014	0.014	0.015	0.015	0.016	0.016
New York	0.071	0.072	0.075	0.080	0.085	0.090	0.095	0.100	0.103	0.106	0.109	0.112
New Jersey	0.199	0.197	0.193	0.186	0.178	0.171	0.164	0.158	0.153	0.148	0.144	0.140
Delaware	0.050	0.049	0.048	0.046	0.045	0.043	0.041	0.040	0.038	0.037	0.036	0.035
Maryland	0.109	0.108	0.106	0.102	0.098	0.094	0.090	0.087	0.084	0.082	0.079	0.077
Virginia	0.199	0.197	0.193	0.186	0.178	0.171	0.164	0.158	0.153	0.148	0.144	0.140
North Carolina	0.109	0.108	0.106	0.102	0.098	0.094	0.090	0.087	0.084	0.082	0.079	0.077

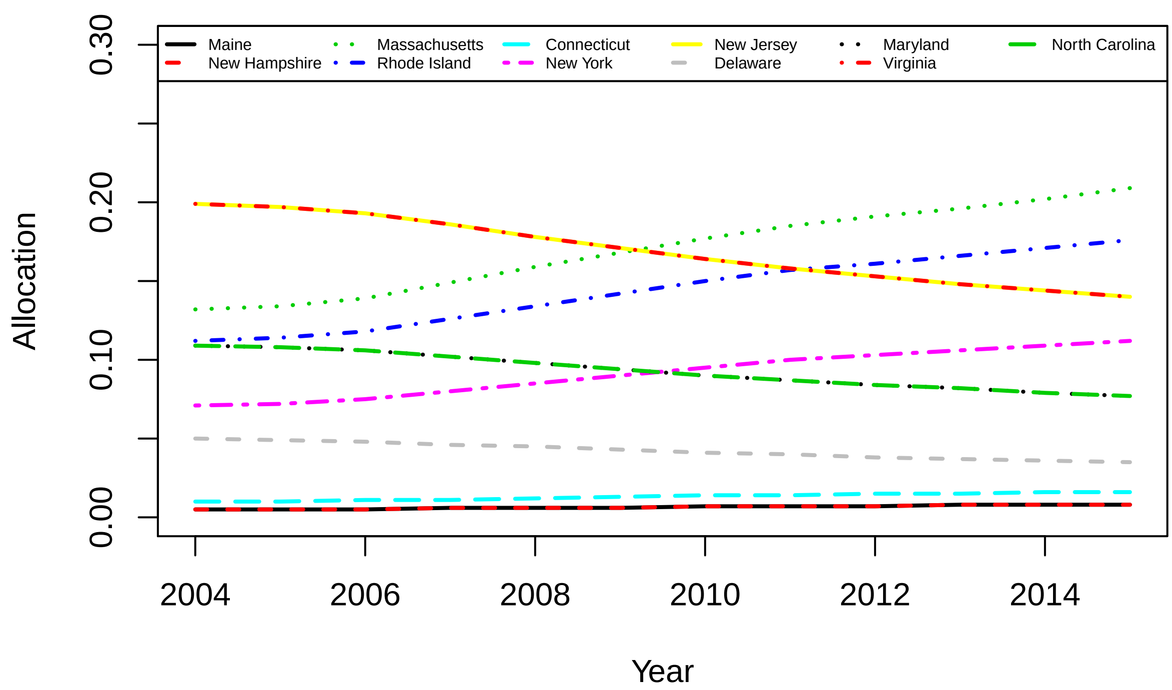

Figure 5: Allocation trajectory for all states under the parameters outlined in example 3 above. The control rule is triggered in each year from 2012 through 2015 in this example. This is a retrospective analysis as if this method were in place beginning in 2004. The control rule is triggered in 2012 - 2015 in this example.

Table 6 - Allocation trajectory for all states under the parameters outlined in example 4 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012	NA
Maine	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
New Hampshire	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Massachusetts	0.129	0.129	0.127	0.127	0.147	0.166	0.188	0.206	0.219	0.236
Rhode Island	0.109	0.109	0.106	0.106	0.123	0.139	0.157	0.172	0.183	0.197
Connecticut	0.020	0.020	0.031	0.042	0.048	0.055	0.062	0.068	0.072	0.078
New York	0.081	0.081	0.092	0.105	0.121	0.137	0.155	0.169	0.180	0.195
New Jersey	0.209	0.209	0.230	0.236	0.239	0.230	0.218	0.206	0.192	0.170
Delaware	0.044	0.044	0.038	0.034	0.028	0.024	0.019	0.016	0.013	0.011
Maryland	0.101	0.101	0.090	0.084	0.069	0.059	0.046	0.038	0.033	0.026
Virginia	0.186	0.186	0.168	0.158	0.130	0.111	0.087	0.072	0.062	0.049
North Carolina	0.101	0.101	0.090	0.084	0.069	0.059	0.046	0.038	0.033	0.026

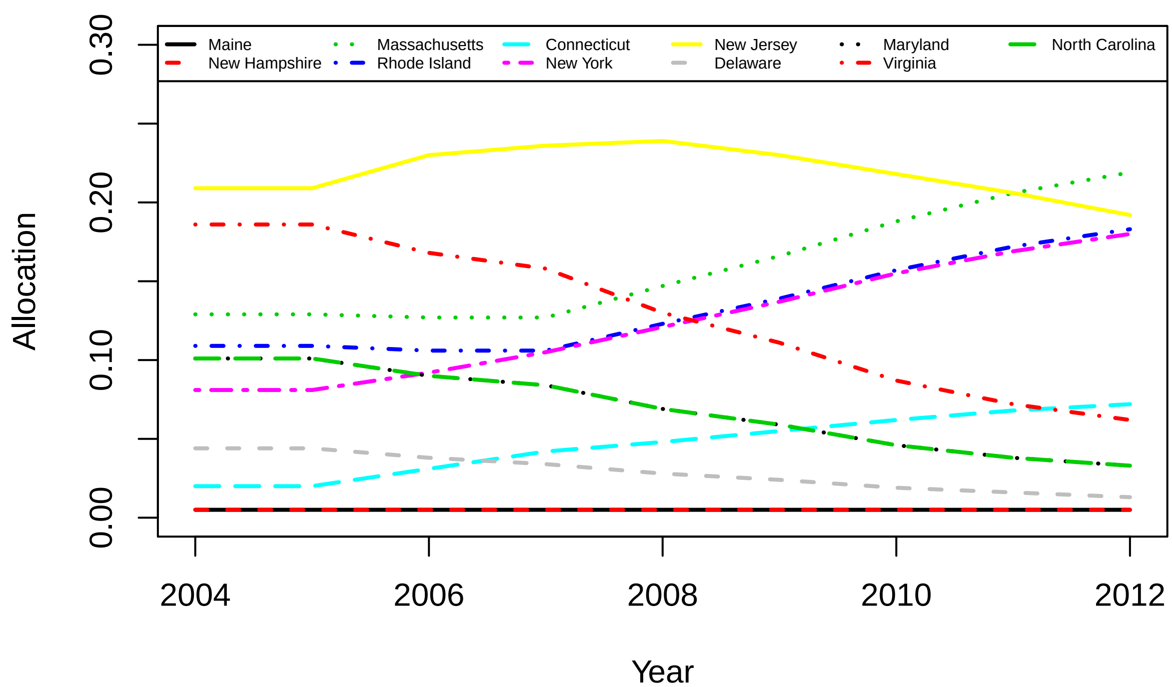

Figure 6: Allocation trajectory for all states under the parameters outlined in example 4 above. The control rule is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

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Appendix C. Trigger Approach

Table 1. Reallocation of black sea bass commercial quota above a 3 million pound trigger, based on the 2017 coastwide quota of 4.12 million pounds. Quota up to and including 3 million pounds is distributed according to the status quo state allocations. Quota above the trigger is distributed equally to the states of Massachusetts through North Carolina, while Maine and New Hampshire are each allocated 1% of the quota above the trigger.

3 Million Pound Trigger					
State	**Current Allocation (%) of quotas up to and including 3 million lbs**	**Status Quo distribution of first 3 million lbs of quota**	**Allocation (%) of additional quota above 3 million lb**	**Example state allocations (lbs) under a 4.12 million lb quota**	**Example state allocations (%) under a 4.12 million lb quota**
ME	0.5%	15,000	1.00%	26,200	0.64%
NH	0.5%	15,000	1.00%	26,200	0.64%
MA	13.0%	390,000	10.89%	511,956	12.43%
RI	11.0%	330,000	10.89%	451,956	10.97%
CT	1.0%	30,000	10.89%	151,956	3.69%
NY	7.0%	210,000	10.89%	331,956	8.06%
NJ	20.0%	600,000	10.89%	721,956	17.52%
DE	5.0%	150,000	10.89%	271,956	6.60%
MD	11.0%	330,000	10.89%	451,956	10.97%
VA	20.0%	600,000	10.89%	721,956	17.52%
NC	11.0%	330,000	10.89%	451,956	10.97%
Total	100.0%	3,000,000	100%	4,120,000	100.00%

Note: Should an annual coastwide quota be equal to or less than 3 million pounds, allocation percentage defaults to current allocation percentage.

Table 2. Reallocation of black sea bass commercial quota above a 4 million pound trigger, based on the 2017 coastwide quota of 4.12 million pounds. Quota up to and including 3 million pounds is distributed according to the status quo state allocations. Quota above the trigger is distributed equally to the states of Massachusetts through North Carolina, while Maine and New Hampshire are each allocated 1% of the quota above the trigger.

4 Million Pound Trigger					
State	**Current Allocation (%) of quotas up to and including 4 million lbs**	**Status Quo distribution of first 4 million lbs of quota**	**Allocation (%) of additional quota above 4 million lb**	**Example state allocations (lbs) under a 4.12 million lb quota**	**Example state allocations (%) under a 4.12 million lb quota**
ME	0.5%	20,000	1.00%	21,200	0.51%
NH	0.5%	20,000	1.00%	21,200	0.51%
MA	13.0%	520,000	10.89%	533,067	12.94%
RI	11.0%	440,000	10.89%	453,067	11.00%
CT	1.0%	40,000	10.89%	53,067	1.29%
NY	7.0%	280,000	10.89%	293,067	7.11%
NJ	20.0%	800,000	10.89%	813,067	19.73%
DE	5.0%	200,000	10.89%	213,067	5.17%
MD	11.0%	440,000	10.89%	453,067	11.00%
VA	20.0%	800,000	10.89%	813,067	19.73%
NC	11.0%	440,000	10.89%	453,067	11.00%
Total	100.0%	4,000,000	100%	4,120,000	100.00%

Note: Should an annual coastwide quota be equal to or less than 4 million pounds, allocation percentage defaults to current allocation percentage.

Table 3. Reallocation of black sea bass commercial quota above a 3 million pound trigger according to the Rho adjusted regional biomass proportions produced by the 2015 stock assessment, applied to the 2017 coastwide quota of 4.12 million pounds. Quota up to and including 3 million pounds is distributed according to the status quo state allocations**. Quota above the trigger is distributed to the northern and southern regions according to their respective biomass proportions, and then equally to the states within each region, except Maine and New Hampshire which are each allocated 1% of the quota allocated to the northern region.**

3 Million Pound Trigger – Allocations of Additional Quota Based on Regional Biomass Proportions						
State	**Current Allocation (%) of quotas up to and including 3 million lbs**	**Status Quo distribution of first 3 million lbs of quota**	**2015 Assessment Rho Adjusted Regional Biomass Proportion**	**Allocation (%) of additional quota above 3 million lb**	**Example state allocations (lbs) under a 4.12 million lb quota**	**Example state allocations (%) under a 4.12 million lb quota**
ME	0.5%	15,000	0.86	1.0%	26,200	0.64%
NH	0.5%	15,000		1.0%	26,200	0.64%
MA	13.0%	390,000		21.0%	625,200	15.17%
RI	11.0%	330,000		21.0%	565,200	13.72%
CT	1.0%	30,000		21.0%	265,200	6.44%
NY	7.0%	210,000		21.0%	445,200	10.81%
NJ	20.0%	600,000	0.14	2.8%	631,360	15.32%
DE	5.0%	150,000		2.8%	181,360	4.40%
MD	11.0%	330,000		2.8%	361,360	8.77%
VA	20.0%	600,000		2.8%	631,360	15.32%
NC	11.0%	330,000		2.8%	361,360	8.77%
Total	100.0%	3,000,000	100.0%	100.0%	4,120,000	100.0%

Note: Should an annual coastwide quota be equal to or less than 3 million pounds, allocation percentage defaults to current allocation percentage.

Table 4. Reallocation of black sea bass commercial quota above a 3 million pound trigger according to the Rho adjusted regional biomass proportions produced by the 2015 stock assessment, applied to the 2017 coastwide quota of 4.12 million pounds. Quota up to and including 3 million pounds is distributed according to the status quo state allocations. **Quota above the trigger is distributed to the northern and southern regions according to their respective biomass proportions, and then distributed to the states within each region based on their current allocation proportions.** The highlighted state allocations for quota above the trigger are the product of multiplying each state's share of the regional biomass proportion by the regional biomass proportion.

3 Million Pound Trigger – Allocations of Additional Quota Based on Regional Biomass Proportions							
State	**Current Allocation (%) of quotas up to and including 3 million lbs**	**Status Quo distribution of first 3 million lbs of quota**	**2015 Assessment Rho Adjusted Regional Biomass Proportion**	**State Share of Regional Biomass Proportion Based on current allocations**	**Allocation (%) of additional quota above 3 million lb**	**Example state allocations (lbs) under a 4.12 million lb quota**	**Example state allocations (%) under a 4.12 million lb quota**
ME	0.5%	15,000	0.86	1.52%	1.30%	29,594	0.72%
NH	0.5%	15,000		1.52%	1.30%	29,594	0.72%
MA	13.0%	390,000		39.39%	33.88%	769,442	18.68%
RI	11.0%	330,000		33.33%	28.67%	651,067	15.80%
CT	1.0%	30,000		3.03%	2.61%	59,188	1.44%
NY	7.0%	210,000		21.21%	18.24%	414,315	10.06%
NJ	20.0%	600,000	0.14	29.85%	4.18%	646,806	15.70%
DE	5.0%	150,000		7.46%	1.04%	161,701	3.92%
MD	11.0%	330,000		16.42%	2.30%	355,743	8.63%
VA	20.0%	600,000		29.85%	4.18%	646,806	15.70%
NC	11.0%	330,000		16.42%	2.30%	355,743	8.63%
Total	100.0%	3,000,000	100.0%	100.0%	100.0%	4,120,000	100%

Note: Should an annual coastwide quota be equal to or less than 3 million pounds, allocation percentage defaults to current allocation percentage.

Appendix D. Spatial Distribution of Black Sea Bass Harvest, 2010-2017

The PDT examined data on the location of commercial black sea bass harvest during 2010-2017. Commercial landings by state, year, and statistical area were provided by the ACCSP. Landings by area were estimated based on a combination of state and federal VTR and dealer data.

Black Sea Bass landings in pounds prepared by year, state, and gear were validated with the states, with the exception of CT. Reported quantity of landings from the federal VTR data and state fishermen reports was queried and proportions by gear type and statistical area by year and state were calculated. These proportions were applied to the validated landings for all states with the exception of NY and NC, as these two states provided validated landings by gear and area. The PDT was provided with the original landings, the VTR and fishermen data, the calculated proportions, final landings with proportions applied, and a comparison of pounds by year and state.

In the most recent benchmark stock assessment, the NEFSC commercial statistical areas were partitioned into northern and southern spatial subunits, as defined in Table 1. The data suggest the proportion of total coastwide (i.e., ME-NC) commercial black sea bass landings caught in northern region statistical areas increased by about 11% between 2010-2013 and 2014-2017 (Figures 1-3, Table 2). This proportional increase was greater when considering just landings in the southern region (i.e., 19.56% if the southern region is defined as NJ-NC and 13.22% if the southern region is defined as DE-NC; Tables 5-6). Although the proportion of southern region landings caught in northern region statistical areas increased from 2010-2013 to 2014-2017, the pounds of southern region landings from southern region statistical areas increased over that time period.

New Jersey commercial harvest was close to evenly distributed between northern and southern region statistical areas during 2010-2017. A greater proportion of New Jersey harvest occurred in southern region statistical areas compared to northern region statistical areas during 2010-2013. Northern region statistical areas accounted for a greater proportion of New Jersey harvest, compared to southern region statistical areas, during 2014-2017 (Table 3).

Figures

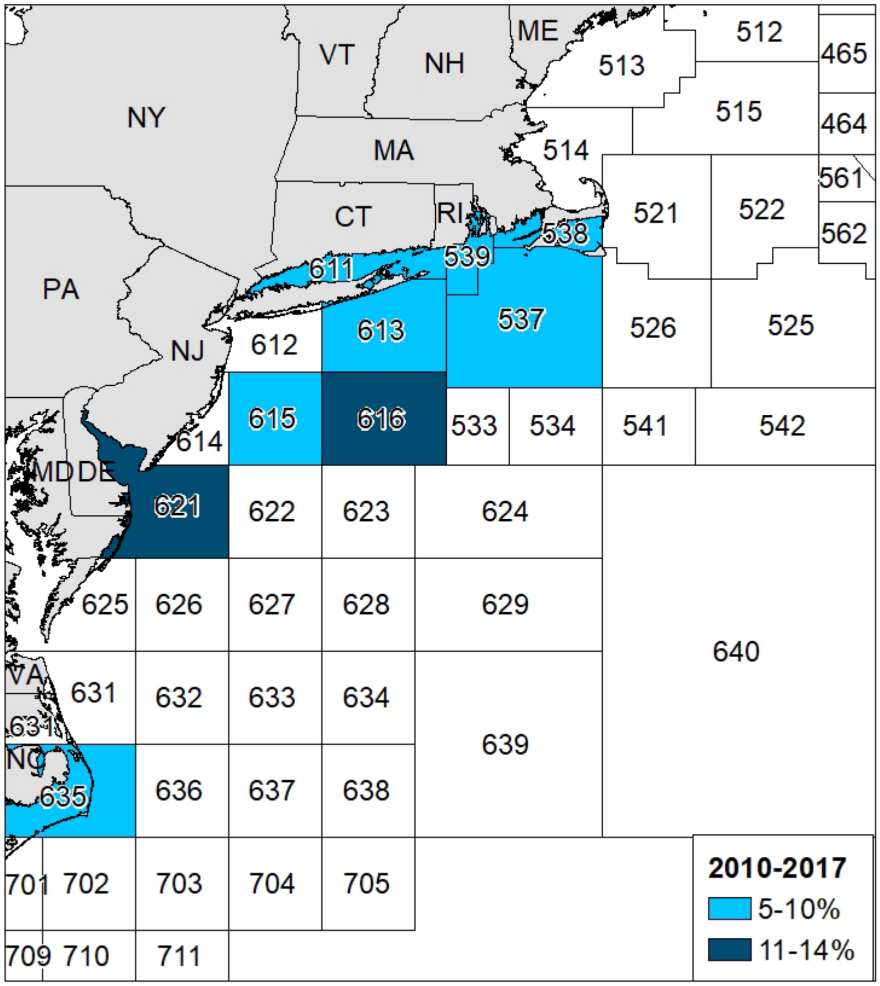

Figure 2. Proportion of commercial black sea bass landings, MA-NC, by statistical area, 2010-2017. Statistical areas accounting for less than 5% of total landings are not shown and collectively accounted for 22.79% of total landings. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

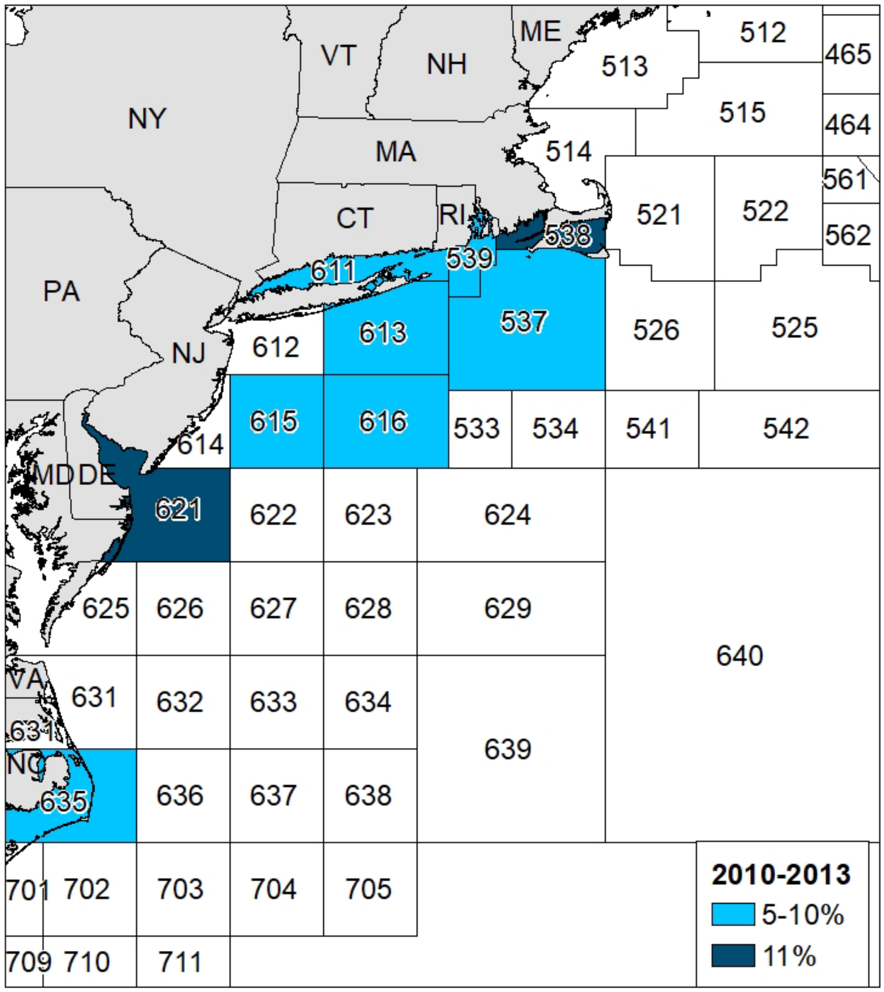

Figure 3. Proportion of commercial black sea bass landings, MA-NC, by statistical area, 2010-2013. Statistical areas accounting for less than 5% of total landings are not shown and collectively accounted for 17.20% of total landings. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

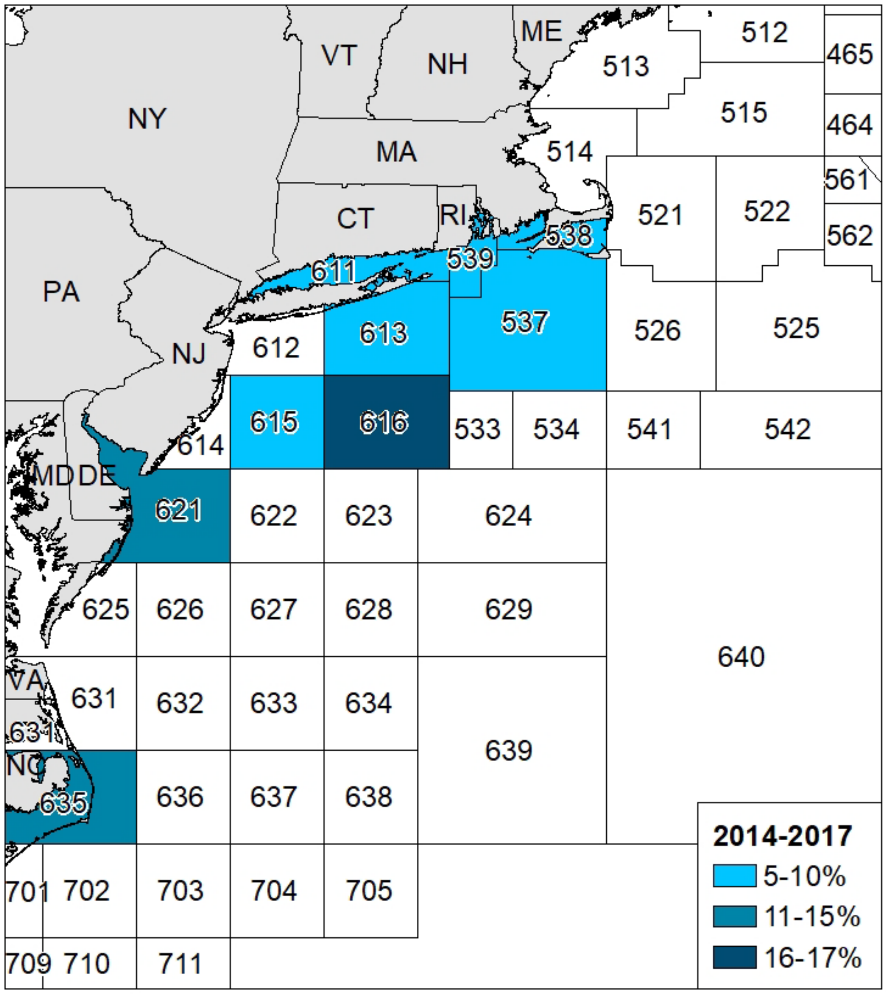

Figure 4. Proportion of commercial black sea bass landings, MA-NC, by statistical area, 2014-2017. Statistical areas accounting for less than 5% of total landings are not shown and collectively accounted for 12.87% of total landings. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

Tables

Table 1. Regional partitioning of statistical areas for the black sea bass spatial stock assessment.

Statistical Areas in Northern Region	511, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 616
Statistical Areas in Southern Region	614, 615, 621, 622, 623, 624, 625, 626, 627, 628, 631, 632, 633, 634, 635, 636

Table 2. Proportion of black sea bass commercial harvest, MA-NC, from northern and southern region statistical areas. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

MA-NC Landings by Statistical Area						
	2010-2017		2010-2013		2014-2017	
	Proportion	Pounds	Proportion	Pounds	Proportion	Pounds
Total N areas	57.82%	9,805,213	51.54%	3,554,769	62.13%	6,250,444
Total S areas	42.18%	7,152,885	48.46%	3,342,576	37.87%	3,810,309
Total	100%	16,958,098	100%	6,897,345	100%	10,060,753

Table 3. Proportion of New Jersey black sea bass commercial harvest from northern and southern region statistical areas. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

NJ Landings by Statistical Area			
	2010-2017	2010-2013	2014-2017
Total N areas	52.04%	34.40%	61.87%
Total S areas	47.96%	65.59%	38.13%
Total	100%	100%	100%

Table 4. Proportion of black sea bass commercial harvest, MA-NY, from northern and southern region statistical areas. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

MA-NY Landings by Statistical Area						
	2010-2017		2010-2013		2014-2017	
	Proportion	Pounds	Proportion	Pounds	Proportion	Pounds
Total N areas	98.94%	6,270,079	98.66%	2,650,281	99.15%	3,619,799
Total S areas	1.06%	67,062	1.34%	35,970	0.85%	31,093
Total	100%	6,337,142	100%	2,686,251	100%	3,650,891

Table 5. Proportion of black sea bass commercial harvest, NJ-NC, from northern and southern region statistical areas. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

NJ-NC Landings by Statistical Area						
	2010-2017		2010-2013		2014-2017	
	Proportion	Pounds	Proportion	Pounds	Proportion	Pounds
Total N areas	33.28%	3,535,133	21.48%	904,488	41.04%	2,630,645
Total S areas	66.72%	7,085,823	78.52%	3,306,606	58.96%	3,779,217
Total	100%	10,620,956	100%	4,211,094	100%	6,409,862

Table 6. Proportion of black sea bass commercial harvest, DE-NC, from northern and southern region statistical areas. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

DE-NC Landings by Statistical Area						
	2010-2017		2010-2013		2014-2017	
	Proportion	Pounds	Proportion	Pounds	Proportion	Pounds
Total N areas	23.24%	1,606,816	15.53%	448,024	28.75%	1,158,791
Total S areas	76.76%	5,308,566	84.47%	2,436,253	71.25%	2,872,314
Total	100%	6,915,382	100%	2,884,277	100%	4,031,105

Options for consideration by Black Sea Bass Commercial PDT

CT DEEP
5/13/2019

Updated 7/28/2019 Table 1

Option 1: Address Connecticut's disproportionately small allocation of the coastal quota

Connecticut has experienced a substantial increase in abundance of black sea bass in state waters over the last seven years (see Fig. 1 below). This increased resource availability has rendered Connecticut particularly disadvantaged by its current low allocation of the coastal quota (1%). This option addresses the disparity between abundance of black sea bass in Connecticut waters and Connecticut's quota allocation by increasing Connecticut's allocation to 5%, using the following approach:

1) Hold NY and DE allocations constant
    a. NY has experienced a similar substantial increase in black sea bass abundance in state waters; therefore, it would not be appropriate to reduce their allocation.
    b. DE current allocation is 5 %. As a "control rule", this option does not seek to make CT percent allocation larger than any other state.
2) Move 1/2 of ME and NH quotas to CT.
3) Move MA, RI, NJ, MD, VA, and NC allocation to CT. The amount moved from each state is proportional to that state's current percent allocation.

Figure 1 CT Long Island Sound Trawl Survey Spring Black Sea Bass Index.

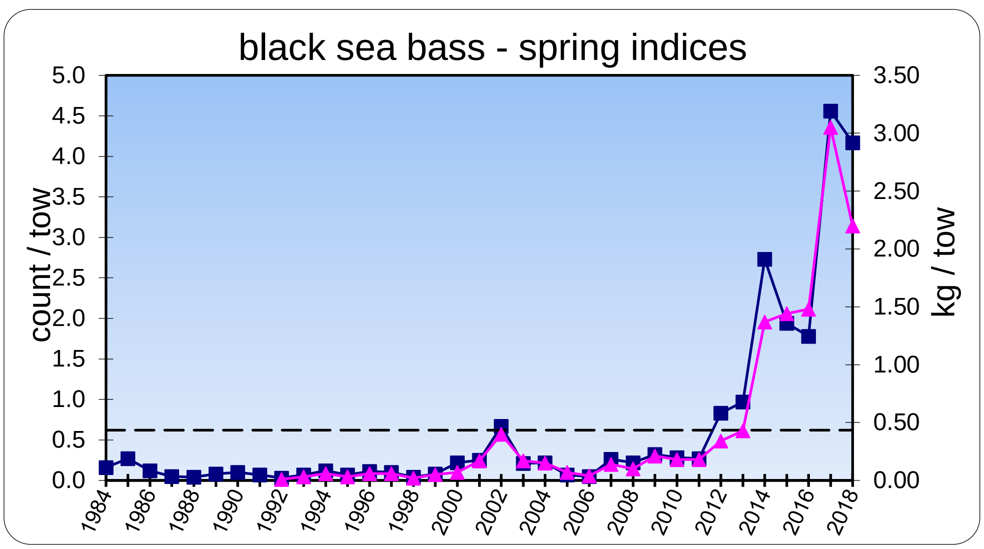

Table 1. Proposed changes in base allocations

State	Current % Allocation	Change in % Allocation	New % Allocation
ME	0.5%	-0.2500%	0.2500%
NH	0.5%	-0.2500%	0.2500%
MA	13.0%	-0.5291%	12.4709%
RI	11.0%	-0.4477%	10.5523%
CT	1.0%	4.0000%	5.0000%
NY	7.0%	0.0000%	7.0000%
NJ	20.0%	-0.8140%	19.1860%
DE	5.0%	0.0000%	5.0000%
MD	11.0%	-0.4477%	10.5523%
VA	20.0%	-0.8140%	19.1860%
NC	11.0%	-0.4477%	10.5523%

<u>Option 2</u>: Trigger option with adjustment of "base" allocations on an annual basis

This option uses a 3 million pound "trigger" while also incorporating the spirit of the TMGC approach (dynamic adjustment of allocations over time with consideration of resource availability and previous allocation regime). This option uses the following decision tree to allocate quota within a given year:

1) If the coastal quota is <u>less than or equal to 3 million pounds</u>:
    a. Allocate quota using the previous year's state allocation percentages.
2) If the coastal quota is <u>greater than 3 million pounds</u>:
    a. Allocate 3 million pounds of quota or "base" quota using the previous year's state allocation percentages.
    b. Allocate the remaining quota or "surplus" (amount above 3 million pounds) as follows:
        i. Split surplus quota to north vs. south region according to proportion of available biomass in each region (ME-NY = north region; NJ-NC = south region).
        ii. Further sub-divide surplus quota within each region according to existing intra-regional proportional allocation.

<u>This option provides the following benefits</u>:

1) By employing a 3 million pound trigger approach, ensures that there will not be substantial decrease to southern region state-by-state allocations in immediate future.
2) This option directly incorporates data on distribution of the resource. The proportions of available biomass in each region could be obtained from a periodic stock assessment, or could be determined annually using fishery-independent survey data.
3) This option allows state-by-state allocations to evolve over time as resource availability shifts (either north to south, or south to north). The rate of allocation shift is accelerated during periods of high resource availability (high quotas), and effectively "pauses" during periods of low resource availability (quotas below 3 million pounds).
4) Overall, year-year changes in state allocations will be moderate – only the "surplus" quota above 3 million pounds will be "shifted" in any one year. The allocation of the "base" quota of 3 million pounds will be the same as the previous year.

The attached Excel spreadsheet can be used to model outcomes during 2021-25 under various scenarios of regional resource distribution, coastal quota, and trigger points. The spreadsheet assumes 2021 implementation of the new regime; the 2020 quota is allocated according the existing state-by-state allocations.

- Use cells I3 through I7 to adjust annual north vs south biomass distribution.
- Use cells K3 through K7 to adjust annual coastwide commercial quota.
- Use cells L3 through L7 to adjust the trigger.

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

MEMORANDUM

Date: September 27, 2019

To: Council and Board

From: Julia Beaty, staff

Subject: Recreational Reform Initiative

Summary

In March 2019, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (ASMFC's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) established a joint initiative to develop strategies to increase management flexibility and stability for jointly managed recreational fisheries. The initiative is currently focused on black sea bass, but also considers implications for summer flounder, scup, and bluefish.

A steering committee was formed and has met several times. Steering committee membership includes staff from the Council, ASMFC, and NOAA Fisheries, as well as the Council chair, the Council's Demersal Committee chair and vice chair, and the Board chair and vice chair. To date, the steering committee has focused on the concept of pre-determined guidelines to determine when recreational measures (i.e., possession limits, minimum fish sizes, and open and closed seasons) should remain unchanged and potential alternative timelines for annual decision making. Both topics are described in more detail below.

The steering committee recommended the following draft mission statement:

> *Allow for more regulatory stability and flexibility in the recreational management programs for summer flounder, scup, black sea bass, and bluefish by revising the current annual timeframe for evaluating fishery performance and setting recreational specifications to a new multi-year process.*

At their October 2019 joint meeting, the Council and Board will be asked to provide feedback on the concepts developed by the steering committee.

Guidelines for Maintaining *Status Quo* Management Measures

In recent years, *status quo* recreational measures despite projected harvest exceeding the recreational harvest limit (RHL) have been justified on an *ad hoc* basis. The steering committee is exploring development of pre-determined guidelines that could be followed to determine if measures could remain *status quo* in the future. These guidelines would involve consideration of available data on stock status and recreational harvest. For example, biomass above the target level, fishing mortality below the target, and/or above average or increasing recruitment could suggest that negative impacts on the stock may not result from maintaining *status quo* management measures when a moderate reduction in harvest would otherwise appear to be needed. Maintaining *status quo* may not be appropriate when available data suggest that notable reductions in harvest are needed to prevent RHL overages, when poor stock health is indicated, or if stock rebuilding is required. In years when updated biomass, fishing mortality, and recruitment estimates are not available, other data sources such as state and federal trawl survey indices could be used to evaluate potential changes in stock status; however, the limitations of these data sets should be carefully considered.

In addition, the working group wants to explore and test guidelines that would define the process used to compare projected harvest to the RHL to determine if harvest should be reduced, should remain unchanged, or can be liberalized. The steering committee agreed that guidelines for incorporating uncertainty in the recreational harvest data should be developed. This could include greater consideration of the percent standard error values associated with the recreational estimates and smoothing of outlier estimates as developed by the Monitoring and Technical Committees. In addition, further consideration should be given to the benefits and challenges associated with using preliminary and/or projected recreational data for the current year in this process.

The working group intends to test how harvest projections within a pre-defined percentage of the RHL after accounting for uncertainty (e.g., smoothing outliers) would perform if *status quo* management measures were maintained. This approach would need to be adopted both when restrictions would otherwise be required and when liberalizations would otherwise be allowed. The objective is to develop a standard, repeatable methodology that can be applied to the recreational data each year.

The steering committee agreed that these guidelines should only be applied when stock status is positive (i.e., not overfished and overfishing not occurring). This type of flexibility may not be appropriate for stocks under a rebuilding plan or stocks that are experiencing overfishing.

<u>Two Year Specifications Cycle</u>

The steering committee also discussed the potential of using a two-year specifications cycle to provide greater stability in recreational management measures. The Council and Board currently have the ability to set specifications for multiple years at a time; however, the approach discussed by the steering committee involves setting specifications for two years with a commitment to make no changes in interim years if stock status remains positive (i.e., not overfished and overfishing not occurring). This approach is likely not appropriate if the stock is overfished or experiencing overfishing.

An example timeline for a two-year specifications cycle, with or without conservation equivalency, is shown below. This timeline aligns with the new stock assessment process in the northeast. Under the new process, the Council and Board will receive a black sea bass management track assessment, including estimates of spawning stock biomass, fishing mortality, and recruitment, every other year starting in 2021.

- August of year 0
  - Consider assessment information, Scientific and Statistical Committee, Monitoring Committee, and Advisory Panel recommendations.
  - Adopt RHLs for years 1 and 2.
- November of year 0
  - NOAA Fisheries publishes proposed rule for the RHL in years 1 and 2.
- December of year 0
  - NOAA Fisheries publishes final rule for the RHL in years 1 and 2.
  - Council and Board consider the RHL in years 1 and 2, as well as the pre-defined guidelines described on pages 1-2 to determine if federal and state waters recreational management measures should remain *status quo* or should be modified.
  - Council and Board decide if federal waters recreational measures should be waived in favor of state waters measures through conservation equivalency during years 1 and 2. If conservation equivalency is recommended, then non-preferred coastwide and precautionary default measures for years 1 and 2 should also be recommended. If conservation equivalency is not recommended, then federal recreational management measures for years 1 and 2 should be recommended.
- February of year 1
  - Board approves state management measures and certifies that the suite of measures is expected to constrain harvest to the RHL. Unlike the current process, the Board would not respond to preliminary wave 5-6 or final wave 1-6 data for year 0.
  - Council staff submits federal recreational measure package to NOAA Fisheries. If conservation equivalency is recommended, the package includes the non-preferred coastwide and precautionary default measures for years 1 and 2. If conservation equivalency is not recommended, the package includes the federal waters recreational possession limit, minimum fish size, and open season for years 1 and 2.
- March/April of year 1
  - NOAA Fisheries publishes proposed rule for year 1 and 2 recreational measures.
- April/May of year 1
  - NOAA Fisheries publishes proposed rule for year 1 and 2 recreational measures.
- Summer of year 1
  - Northeast Fisheries Science Center (NEFSC) provides catch and landings information for year 0 (i.e., a data update). This information is used to determine if an annual catch limit (ACL) overage occurred and if a response is needed.
- January of year 2
  - Year 2 RHL and recreational management measures as previously approved would remain in place.
- Summer of year 2
  - NEFSC provides a management track assessment which is used to develop specifications for years 3 and 4 following the process described above for years 1 and 2.

Further consideration is needed regarding how accountability measures will factor into this process, including the appropriate response to an ACL overage identified in an interim year and if changes to the current ACL overage evaluation methodology are needed.

Next Steps

It is anticipated that a technical working group will be formed at a later date to carry out technical and policy analyses of any potential strategies supported by the Council and Board. Depending on the changes recommended for consideration, a joint amendment or framework action may be required.

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

MEMORANDUM

Date: September 24, 2019

To: Council

From: Mary Sabo and Michelle Duval

Subject: Draft 2020-2024 Strategic Plan

At the October 2019 meeting, the Council will review and provide feedback on a draft 2020-2024 Strategic Plan (enclosed behind this memo). This draft plan was developed around the framework approved by the Council at the August 2019 meeting, which included proposed Vision, Mission, and Goal statements. The complete draft plan includes a suite of objectives and strategies for each of five goal areas: Communication, Science, Management, Ecosystem, and Governance.

Development of the draft plan was guided and informed by input from stakeholders, the public, the Council's advisory bodies and SSC, and the Council's science and management partners. These perspectives are summarized in the *Stakeholder Input Report (2019)* which is available at http://www.mafmc.org/s/2019-Stakeholder-Input-Report.pdf. The progress made under the 2014-2018 Strategic Plan also provided an important foundation for this effort.

Council members are encouraged to provide comments on, and suggest modifications to, the draft 2020-2024 Strategic Plan during the discussion on Wednesday, October 9th. After Council review and feedback, recommended changes and additions will be incorporated, and a revised draft will be posted for public input and comment. In December, the Council will review public feedback and consider a final version of the 2020-2024 Strategic Plan for approval.

Suggested modifications to the Council-approved framework

Staff is recommending minor changes to the draft Vision and Management goal statements approved by the Council in August (suggested additions are underlined; deletions are in ~~strikethrough~~ text):

> **Vision:** *Healthy marine ecosystems and thriving, sustainable ~~marine ecosystems,~~ fisheries and fishing communities that provide the greatest overall benefit to the nation.*
>
> **Management Goal:** *Develop effective management strategies that provide for sustainable fisheries and healthy marine ecosystems ~~and~~ while considering the ~~social and economic~~ needs of fishing communities and other resources users.*

The rationale for the suggested modifications is that "healthy" may be a more appropriate modifier of marine ecosystems than "sustainable" and that the Council is unlikely to *only* consider social and economic needs to the exclusion of other fishing community and resources user needs. The recommendation to modify "and consider" to "while considering" is for readability.

Mid-Atlantic Fishery Management Council DRAFT 2020-2024 Strategic Plan

October 2019

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Acronyms

ASMFC	Atlantic States Marine Fisheries Commission
ACCSP	Atlantic Coastal Cooperative Statistics Program
BREP	Bycatch Reduction Engineering Program
EFH	Essential Fish Habitat
EEZ	Exclusive Economic Zone
HAPC	Habitat Area of Particular Concern
GARFO	Greater Atlantic Regional Fisheries Office
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSE	Management Strategy Evaluation
NCRP	Northeast Cooperative Research Program
NEAMAP	Northeast Area Monitoring and Assessment Program
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NOAA	National Oceanic and Atmospheric Administration
NRCC	Northeast Region Coordinating Council
OLE	Office of Law Enforcement
RSA	Research Set-Aside
SSC	Scientific and Statistical Committee
S-K	Saltonstall-Kennedy Grant Program

Introduction

The Mid-Atlantic Fishery Management Council (also referred to as the Council, Mid-Atlantic Council, or MAFMC) is responsible for the conservation and management of fish stocks within the federal 200-mile limit of the mid-Atlantic region (North Carolina through New York).

The Mid-Atlantic Council was established in 1976 by the Fishery Conservation and Management Act (later renamed the Magnuson-Stevens Fishery Conservation and Management Act, or MSA). The law created a 200-mile Exclusive Economic Zone (EEZ), eliminated foreign fishing effort within the EEZ, and charged eight regional councils with management of fishery resources in the newly expanded federal waters.

The Council develops fishery management recommendations which must be approved by the Secretary of Commerce before they become final. All of the Council's fishery management recommendations must be consistent with the ten national standards as defined by the MSA and developed in an open, public process prescribed by law.

The Mid-Atlantic Fishery Management Council manages more than 64 species of fish and shellfish with seven fishery management plans (FMPs). Fourteen species are directly managed with specific FMPs. These include summer flounder, scup, black sea bass, Atlantic bluefish, Atlantic mackerel, Illex and longfin squids, butterfish, Atlantic surfclams, ocean quahogs, golden and blueline tilefish, spiny dogfish (joint with the New England Council), and monkfish (joint with the New England Council). In addition, more than 50 forage species are managed as "ecosystem components" in all seven FMPs. The Council partners with other fishery management organizations, including the states and NOAA Fisheries, in the development of effective management plans. For instance, spiny dogfish and monkfish are managed under joint fishery management plans developed in coordination with the New England Fishery Management Council (NEFMC). The Council also coordinates the management of summer flounder, scup, black sea bass, bluefish, and spiny dogfish with the Atlantic States Marine Fisheries Commission (ASMFC).

The Council is made up of 21 voting members and four non-voting members. Eight of the voting members represent the constituent states' fish and wildlife agencies and the NOAA Fisheries regional office, and 13 are private citizens who are knowledgeable about recreational fishing, commercial fishing, or marine conservation. The four non-voting members represent the ASMFC, the U.S. Fish and Wildlife Service, the U.S. Department of State, and the U.S. Coast Guard. The Council also has a full-time staff which is based in Dover, Delaware. The staff assists with planning and facilitation of meetings, development of fishery management plans, coordination with other management agencies, and performing other tasks as needed by the Council. The Council also has a number of advisory bodies, including a Scientific and Statistical Committee (SSC) and advisory panels for each fishery management plan.

Over the last 43 years the Council has made significant progress toward its goals of establishing effective management programs for Mid-Atlantic fisheries and rebuilding stocks that were once overfished. However, the Council still faces social, economic, and ecological challenges that impact the stability and sustainability of Mid-Atlantic fisheries. The strategic planning process is critical for defining the Council's future and will enable proactive, efficient, and effective responses to the challenges that lie ahead.

This strategic plan will guide the Council's activities and priorities for the years 2020 through 2024. The goals and objectives described in this plan have been informed by the foundation created and progress achieved under the Council's previous strategic plan, as well as stakeholder and public input and management partner outreach.

The Council's 2020-2024 Strategic Plan was developed to meet the following overarching objectives:

- Maintain sustainable fisheries, ecosystems, and habitats in the Mid-Atlantic;
- Address specific issues identified by the Council and its constituents;
- Improve communication with constituents and other organizations;
- Improve the Councils ability to collect and use input from constituents and management partners;
- Increase efficiency in the management process;
- Promote stability in Mid-Atlantic fisheries; and
- Establish a more proactive process for addressing management challenges.

The Strategic Landscape

The Council is operating in a rapidly changing world and faces increasing and competing demands on its time and resources. Over the next five years, the Council will confront new challenges that will require it to prioritize management activities and make difficult decisions. A number of factors will potentially impact the Council's activities and ability to progress towards its goals. Some may provide incentive for creative solutions, while others are uncertainties to be acknowledged.

Challenges the Council may face include:

- Limited staff resources and capacity to respond to unforeseen circumstances.
- Competing constituent interests.
- Changing ocean conditions that impact the distribution, productivity, and sustainability of managed species.
- Competing ocean uses and their potential impacts on the Council's fisheries.
- Habitat loss and degradation.
- Interactions between protected resources and managed species.
- Availability of management partner resources to address the Council's needs/priorities.

Within this context, the 2020-2024 Strategic Plan is designed to provide a framework to guide progress towards the Council's long-term goals while remaining responsive to changing circumstances.

Vision, Mission, Core Values, and Goals

Vision

Healthy marine ecosystems and thriving, sustainable fisheries and fishing communities that provide the greatest overall benefit to the nation.

Mission

The Council manages fisheries in federal waters of the Mid-Atlantic region for their long-term sustainability and productivity consistent with the national standards of the Magnuson-Stevens Fishery Conservation and Management Act. The Council is committed to the stewardship of these fisheries, and associated ecosystems and communities, through the collaborative development of effective, science-based fishery management plans and policies.

Core Values

The Council's activities, operations, and decisions are guided by the following core values.

- Stewardship
- Integrity
- Effectiveness
- Fairness
- Competence
- Transparency

Strategic Goals

The following goals have been identified to help the Council advance towards its Vision during the years 2020 through 2024.

Communication: *Engage stakeholders and the public through education and outreach that foster sustained participation in, and awareness of, the Council process.*

Science: *Ensure that the Council's management decisions are based on timely and accurate scientific information and methods.*

Management: *Develop effective management strategies that provide for sustainable fisheries and healthy marine ecosystems and consider the needs of fishing communities and other resource users.*

Ecosystem: *Support the ecologically sustainable utilization of living marine resources in a manner that maintains ecosystem productivity, structure, and function.*

Governance: *Ensure that the Council's practices accurately represent and consider fishery, community, and public interests through a transparent and inclusive decision-making process.*

For each of these goals, the Council has developed a suite of objectives and associated strategies to guide its progress over the next five years.

Communication

***GOAL**: Engage stakeholders and the public through education and outreach that foster sustained participation in, and awareness of, the Council process.*

Objective 1. Use a wide range of communication tools and methods tailored to engage target audiences.

- Employ a variety of traditional, web-based, and social media tools to disseminate relevant information, updates, and communication materials.
- Upgrade the content and organization of the Council website to enhance usability for target audiences.
- Coordinate communication efforts with management partners and other organizations to expand the distribution of messages to a broader audience.
- Seek opportunities to expand media coverage of Council actions, managed fisheries, and opportunities for stakeholder participation.
- Expand the use of "interested-parties" email lists to deliver fishery- and action-specific information and updates to interested stakeholders.
- Maintain the online calendar of meetings and events with links to meeting materials and supplemental information.
- Establish a Communication/Outreach Advisory Panel to assist in the review and development of communication and outreach tools and approaches.

Objective 2. Increase stakeholder participation in the Council process.

- Hold workshops to facilitate collaborative development of innovative management approaches among fishermen, managers, scientists, and other interested stakeholders.
- Develop outreach materials to facilitate constructive stakeholder input on proposed management actions (e.g. scoping guides, fact sheets, etc.)
- Schedule, advertise, and conduct meetings and public hearings in a manner that encourages and enables stakeholder attendance and participation.
- Maintain action-specific web pages to inform stakeholders about opportunities to participate in the development of amendments and frameworks.
- Expand the use of online comment forms to gather public input.
- Utilize webinars to provide opportunities for remote access and participation.

Objective 3. Broaden the public's understanding and awareness of the Council and its managed fisheries.

- Develop and distribute general outreach and education materials to increase awareness and understanding of Council-managed fisheries and the Council process.
- Partner with external organizations to develop and promote workshops and other interactive educational opportunities for stakeholders.
- Collaborate with science and management partners and other academic or research institutions to develop outreach materials that explain fisheries science and data collection.

Science

GOAL: *Ensure that the Council's management decisions are based on timely and accurate scientific information and methods.*

Objective 4. Collaborate with science partners and research institutions to ensure that the Council's science priorities are addressed.

- Engage science and management partners to leverage opportunities for inclusion of the Council's research priorities in external funding programs (e.g. S-K, NCRP, BREP, ACCSP, regional Sea Grant, etc.).
- Collaborate with management partners and the Northeast Fisheries Science Center (NEFSC) to identify common research priorities and strategically address science, data, and information needs.
- Support implementation and continued development of the new Northeast Region Coordinating Council (NRCC) stock assessment process to improve assessment efficiency.
- Develop a process for cross-communication between the Council's Scientific and Statistical Committee (SSC) and other council SSCs to promote sharing of scientific approaches, methods, and information.
- Develop and implement a comprehensive research plan to address the research needs identified in the Five-Year Research Priorities document.

Objective 5. Support the use of collaborative research to meet the Council's science, data, and information needs.

- Collaborate with the NEFSC to expand and enhance existing cooperative research initiatives carried out under the umbrella of the NEFSC's Northeast Cooperative Research Program (NCRP)
- Identify research needs that can be addressed using collaborative approaches with commercial, for-hire, and recreational fishery participants.
- Cooperate with management partners to support and identify funding for science priorities identified by the Northeast Area Monitoring and Assessment Program (NEAMAP) Operations Committee.
- Support development of programs that use "vessels of opportunity" from all sectors to address science and research needs.
- Support innovations in gear development and configuration that increase efficiency and reduce catch of non-target species in commercial and recreational fisheries.
- Evaluate options for future research set-aside (RSA) program.

Objective 6. Promote efficient and accurate data collection, monitoring, and reporting systems.

- Support implementation of improvements in fishery data accuracy, efficiency, and timeliness as identified in the Greater Atlantic Regional Fisheries Office (GARFO)/NEFSC Fishery Dependent Data Initiative.
- Work with science and management partners to develop and implement a unique trip identifier.
- Collaborate with science and management partners to eliminate duplicative or unnecessary reporting.
- Address inconsistencies in permitting, reporting, and vessel inspection requirements across commercial and for-hire fisheries.
- Determine the utility of electronic reporting phone apps to improve recreational harvest estimates in the Mid-Atlantic region.

Objective 7. Support the collection of relevant social and economic data and on-the-water observations.

- Engage the Council's SSC to identify existing sources of social and economic information or studies that could be used to inform management decisions.
- Support efforts to incorporate fishermen's knowledge in the stock assessment process.
- Identify data/information gaps that can be addressed with on-the-water observations.
- Continue to support data collection efforts for improved social and economic impact analyses, such as cost-benefit analysis, for all fisheries.

Objective 8. Identify and prioritize the Council's research needs.

- Conduct an annual or biennial review of the Council's Five-Year Research Priorities by the advisory panels, monitoring committees, and SSC to ensure the document is reflective of the current state of scientific knowledge and Council priorities.
- Review research needs identified in stock assessments for inclusion in the Council's Five-Year Research Priorities.
- Develop a process to track progress toward addressing the Council's research priorities.

Management

GOAL: *Develop effective management strategies that provide for sustainable fisheries and healthy marine ecosystems while considering the needs of fishing communities and other resource users.*

Objective 9. Strengthen state, federal, and interstate partnerships to promote coordinated, efficient management of fishery resources.

- Continue to use the NRCC process as a forum for Atlantic coast management entities to enhance communication, coordinate management approaches, and pursue shared objectives.
- Coordinate with management partners to ensure efficient allocation of staff resources for jointly managed species and issues of common interest.
- Collaborate with management partners to address inconsistencies in regulations across state, federal, and regional boundaries.

Objective 10. Adapt management approaches and priorities to address emerging issues and changing fishery conditions.

- Monitor variability in species distribution, abundance, and availability and associated impacts on Council-managed fisheries.
- Use fishery performance reports and State of the Ecosystem reports as tools to develop management responses to changing fishery conditions.
- Regularly review the performance of existing management measures.

Objective 11. Ensure that management decisions consider social, economic, and community impacts and opportunities.

- Expand the use of Management Strategy Evaluation (MSE) to determine/evaluate the impacts of management decisions on fishing communities and other resource users.
- Evaluate the impacts of current management approaches on recreational angler fishery participation and satisfaction through the use of focus groups or workshops.
- Continue and expand the use of multi-year management approaches to increase fishery stability and predictability to the extent practicable.
- Evaluate the impacts of management decisions on the economic efficiency and sustainability of commercial and for-hire businesses and associated shoreside operations.

Ecosystem

GOAL: *Support the ecologically sustainable utilization of living marine resources in a manner that maintains ecosystem productivity, structure, and function.*

Objective 12. Implement the Council's Ecosystem Approach to Fisheries Management (EAFM) as described in the EAFM Guidance Document.

- Establish a process to track implementation of the Council's EAFM Guidance Document and ensure that progress is effectively communicated to the public.
- Use the structured framework process, as described in the EAFM Guidance Document, as a tool to implement the Council's EAFM policy and incorporate ecosystem considerations into the Council's science and management programs.
- Collaborate with the Council's science partners to increase the collection, utilization, and consideration of ecosystem-level biological, social, and economic information.

Objective 13. Collaborate with management partners to develop ecosystem approaches that are responsive to the impacts of climate change.

- Determine the data and information necessary to evaluate and respond to climate-induced species and habitat changes for both managed and unmanaged species.
- Work with Atlantic coast management partners to evaluate potential management and governance responses to shifting species distributions through scenario planning workshops and/or other exercises.
- Evaluate the flexibility/ability of current management approaches, including the NOAA Fisheries climate-ready fisheries management process, to respond to shifting species distributions.
- Consider management strategies that are responsive to the impacts of climate change on current fishery allocations.

Objective 14. Identify, designate, and protect habitat using an ecosystem approach.

- Identify and document the contributions of inshore habitats to offshore productivity.
- Review and strengthen essential fish habitat (EFH) designations to account for species interactions, connectivity, and changing ocean conditions.
- Develop the linkages between habitat science and conservation and fishery outcomes with a focus on ecosystem resiliency and productivity.
- Participate with management partners in the Northeast Regional Marine Fish Habitat Assessment Project, Atlantic Coastal Fish Habitat Partnership (ACFHP), and other regional habitat partnerships.
- Ensure that the Council's habitat policies regarding both fishing and non-fishing activities reflect current scientific information and best management practices.
- Examine the use of the Council's existing EFH/Habitat Area of Particular Concern (HAPC) authorities and designations to ensure ecosystem integrity and services are maintained.

Objective 15. Engage in the offshore energy development process to address impacts to Council-managed species and associated habitats.

- Collaborate on offshore energy issues with state and federal management partners and other relevant organizations to identify information needs and evaluate potential impacts of offshore energy development on marine resources.
- Comment on proposed offshore energy projects to ensure developers and permitting agencies are aware of natural resource concerns and Council priorities.

Objective 16. Support the maintenance of an adequate forage base to ensure ecosystem productivity, structure, and function.

- Consider and account for, to the extent practicable, the role of Council-managed species in the ecosystem, including roles as prey, predator, and food for humans.
- Consider and account for, to the extent practicable, the impact of Council-managed fisheries on the forage base.
- Monitor landings of currently unmanaged forage species and respond to changes if necessary.

Objective 17. Develop management approaches that minimize adverse ecosystem impacts.

- Incorporate information from the NEFSC's annual State of the Ecosystem reports to identify potential ecosystem impacts of the Council's management approaches.
- Develop management measures that consider ecological interactions to promote fewer regulatory discards and greater utilization of catch.
- Consider fishery management approaches that avoid or reduce negative impacts on protected resources.

Governance

GOAL: *Ensure that the Council's practices accurately represent and consider fishery, community, and public interests through a transparent and inclusive decision-making process.*

Objective 18. Maintain an open, accessible, and clearly defined process.

- Develop, refine, and communicate policies regarding operations of committees and advisory and technical bodies, including the SSC.
- Provide annual updates on Council activities and progress towards implementation of the Strategic Plan.
- Ensure that the Council's Statement of Organization Processes and Procedures (SOPP) are regularly reviewed, updated as needed, and made available on the Council's website.
- Provide conference lines or Webinar access to Council and advisory body meetings whenever feasible.

Objective 19. Engage management partners to promote effective collaboration and coordination.

- Review regional operating agreement with GARFO, the NEFSC, and Office of Law Enforcement (OLE) and revise if necessary.
- Collaborate with the ASMFC to define roles, responsibilities, and procedures for joint meetings and joint action development.
- Consider development of agreements with the New England and/or South Atlantic Councils to define management roles and processes for joint and/or cross-jurisdictional species management.
- Review the composition and operation of Council committees to ensure that the concerns of management partners are effectively understood and addressed.

Objective 20. Ensure that stakeholder interests are understood and addressed.

- Consider incorporating additional opportunities for general public comment (i.e. not related to specific agenda items) during Council meetings.
- Expand opportunities for stakeholders to provide input during the development of annual Implementation Plans.
- Regularly evaluate the composition of advisory bodies to ensure effective representation of diverse interests.
- Explore options to better communicate how public input was used in management decisions.

Objective 21. Provide training and development opportunities for Council members and staff to enhance organizational performance.

- Provide opportunities for Council member training and development on topics such as parliamentary procedure and best practices for effective meetings.
- Support the ongoing professional development of Council staff.
- Continue to promote collaboration with GARFO, NEFSC, and ASMFC staff through staff-to-staff meetings.

Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: 18 September 2019

To: Michael P. Luisi, Chairman, MAFMC

From: John Boreman, Ph.D., Chair, MAFMC Scientific and Statistical Committee

Subject: Report of the September 2019 SSC Meeting

The SSC met in Baltimore on the 9th, 10th, and 11th of September 2019 primarily to review (and perhaps modify) 2020 ABC recommendations previously developed for Summer Flounder and Spiny Dogfish, and to develop new ABC recommendations for Bluefish, Scup, and Black Sea Bass based on recently-completed and peer-reviewed operational assessments (Attachment 1). The SSC also discussed progress being made by the *Illex* Working Group, MAFMC research priorities, and SSC membership needs.

The SSC had at least 13 members present for the ABC recommendations, which constituted a quorum (Attachment 2). Also participating were Council members and staff, NEFSC staff, and representatives from the fishing industry. All documents referenced in this report can be accessed via the SSC's meeting website (http://www.mafmc.org/ssc-meetings/2019/september-9-11).

New OFL CV Decision Process

For the three species requiring new ABC specifications, the SSC followed the Council-approved guidance document developed by the SSC for assigning a coefficient of variation (CV) level to the estimate of the overfishing limit (OFL); the guidance document can be found at: http://www.mafmc.org/s/Tab06_SSC-OFL-CV-Guidelines_2019-06.pdf. This document describes the guidelines and process the SSC will use from now on when assigning an OFL CV value when the SSC makes ABC recommendations for Council-managed species. The intent of the document is to provide a clear, consistent, and transparent process that summarizes the SSC conclusions regarding the scientific uncertainty of the OFL estimate.

As part of the process outlined in the guidance document, draft OFL CV framework tables are developed by the SSC species lead, in consultation with the NEFSC stock assessment lead and Council staff. The draft tables are then reviewed and discussed with the OFL CV workgroup. The SSC species lead and workgroup develop a narrative summarizing the key findings based on the draft framework table and provide a draft, non-binding OFL CV recommendation for SSC consideration. The draft document developed by the SSC species lead and workgroup is then provided to the full SSC and posted as meeting materials in advance of the meeting in which ABC recommendations will be made. The general, non-binding criteria for each box in the OFL CV tables are provided in Attachment 3. Completed and SSC-approved OFL CV framework tables for Bluefish, Scup, and Black Sea Bass are provided as attachments 4, 5, and 6, respectively.

Bluefish

Tony Wood (NEFSC staff) presented a summary of the recently-completed and peer-reviewed operational assessment of Bluefish, followed by Matt Seeley (MAFMC staff), who summarized the management history and the fishery performance report recently updated by the Bluefish Advisory Panel. The operational assessment concluded that Bluefish were overfished in 2018 but overfishing was not occurring. The Bluefish stock has experienced a decline in spawning stock biomass (SSB) over the past decade, coinciding with an increasing trend in the fishing mortality rate. Spawning stock biomass (SSB) was estimated to be about 46% of the updated biomass target reference point, while fishing mortality on the fully selected age 2 fish in 2018 was 80% of the updated fishing mortality threshold reference point. As a result of the very low catch in 2018, fishing mortality was estimated below the reference point for the first time in the time series, possibly a result of lower availability; anecdotal evidence suggests larger Bluefish stayed offshore and inaccessible to most of the recreational fishery. Recruitment over the last decade has been below the time series average.

The SSC's responses to the terms of reference provided by the MAFMC (in *italics*) are as follows.

For Bluefish, the SSC will provide a written report that identifies the following for the 2020-2021 fishing years:

1) *The level of uncertainty that the SSC deems most appropriate for the information content of the most recent stock assessment, based on criteria listed in the Omnibus Amendment.*

    The SSC deems the assessment uncertainty level that requires an SSC-derived coefficient of variation (CV) for the OFL as the most appropriate for the 2019 operational assessment.

2) *For the approaches identified in TOR 3 below, if possible, the level of catch (in weight) associated with the overfishing limits (OFL) based on the maximum fishing mortality rate threshold or, if appropriate, an OFL proxy.*

    The OFL for 2019 is 15,373 mt.

    The OFL projections for 2020 and 2021 assume that the ABC will be caught. Determining OFL for 2020 and 2021 requires a decision on the uncertainty in the OFL so that the ABCs can be determined.

3) *The level of catch (in weight) and the probability of overfishing associated with the acceptable biological catch (ABC) for the stock including: 1) the typical approach of varying ABCs in each year, and 2) a constant ABC approach derived from the average 2020-2021 ABCs. Specify the number of fishing years for which the ABCs apply and, if possible, interim metrics that can be examined to determine if multi-year specifications need reconsideration prior to their expiration.*

The SSC recommends that a CV of 100% be applied to the OFL estimate as appropriate for calculating ABC for Bluefish (see Attachment 3). This OFL CV is an increase from the previously applied value of 60%. The chief uncertainty for Bluefish relates to patterns in the revised MRIP estimates. Bluefish are predominantly harvested by recreational anglers, who average 80% or so of landings. The new calibrated MRIP time series for Bluefish resulted in a substantial increase in catch that approximately follows a similar pattern as seen in the old survey. For both Black Sea Bass and Scup, the original and revised MRIP catches converge in the 1980s when the telephone survey was deemed reliable. Original and revised MRIP catch estimates for Bluefish do not converge in the 1980s, and this adds to the uncertainty in the catch time series. In addition, the importance of dead discards has increased for this stock over time. Because MRIP data is an important component of input data to the ASAP model, it adds to uncertainty in model projections.

Using an OFL with a lognormal distribution with a CV = 100% and a varying ABC approach, the SSC recommends the following OFLs and ABCs, based upon projections that assume the ABC will be fully caught in each year:

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	B/B_{MSY}
2019	15,373	22,614	0.279	0.679	0.467
2020	14,956	6,603	0.078	0.163	0.516
2021	17,355	8,167	0.083	0.183	0.582

The average of the projected ABCs is 7,385 mt. These values were projected forward for 2020 and 2021, assuming the average value of the ABCs was landed. The SSC recommends the following OFLs and ABCs using a constant ABC approach:

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	B/B_{MSY}
2019	15,373	22,614	0.279	0.679	0.467
2020	14,956	7,385	0.087	0.198	0.514
2021	17,228	7,385	0.075	0.154	0.579

Next year, the SSC will consider the following interim metrics: the extent to which the full 2019 ABC is caught and, if possible, the recreational CPUE, recreational catch, and dead discards.

4) *The most significant sources of scientific uncertainty associated with determination of OFL and ABC.*

In order of importance:

- The revised MRIP estimates are an important new source of uncertainty. In particular, the trend of the recreational catch estimates has an important influence on recent estimates of biomass and on the stock status estimates. The revised MRIP estimates had a different trend (relative to the old estimates) than was present for the other species reviewed. The pattern in the new MRIP data are an important source of uncertainty in determination of stock status and in short term projections.
- The increased importance of dead discards implies that the selectivity pattern in the fishery might be changing.
- A key source of uncertainty is whether the ABC will be caught.
- Uncertainty in the stock recruitment relationship adds to uncertainty in appropriate reference points (the use of the $F_{35\%}$ proxy).
- Approximately 60% of the population biomass is in the aggregated 6+ age group, for which there is relatively little information.
- The extent to which the MRIP index and MRIP catch are partially redundant in the assessment needs to be determined.
- Commercial discards are assumed to be insignificant, which may not be the case.

5) *Ecosystem considerations accounted for in the stock assessment, and any additional ecosystem considerations that the SSC considered in selecting the ABC, including the basis for those additional considerations.*

The SSC concluded that ecosystem considerations did not alter its evaluation of uncertainty in determining ABCs (see Attachment 3).

The 2015 benchmark stock assessment included ecosystem considerations:

- An index of habitat suitability was calculated based on a thermal niche model. It was fit as a covariate to survey catchability, but did not improve model fits.
- Diet compositions from multiple surveys were included as auxiliary information

6) *Prioritized research or monitoring recommendations that would reduce the scientific uncertainty in the ABC recommendations and/or improve the assessment level.*

Arising from the operational assessment:

- A primary source of uncertainty is the recreational catch time series. The MRIP trend does not seem consistent with hypothesized reasons for differences between the mail and phone surveys. This historical correction to the MRIP estimates for Bluefish should be explored further to evaluate the causes of differences from other species and to consider their plausibility.
- Investigate whether and how the selectivity pattern in discards has changed over time, and how discard mortality has changed over time.
- Investigate reliability of the recreational CPUE: evaluate species associations with recreational angler trips targeting Bluefish to potentially modify the MRIP index used in the assessment.
- Investigate patterns and trends in recent recruitments.

Arising from the benchmark assessment:

- Develop a fishery independent index that better captures older, larger fish, which would reduce reliance on MRIP sampling.
- Long term environmental variability may have caused changes in the timing of the movement of juvenile Bluefish and the distribution of adults throughout the region that, in turn, may have affected availability.
- Changes in the selectivity of age-0 Bluefish in the survey relative to water column or surface temperature and date should be examined.
- Evaluate methods for integrating disparate indices produced at multiple spatial and temporal resolutions into a stock-wide assessment model, especially for a migratory species like Bluefish.
- Initiate fishery-dependent and fishery-independent sampling of offshore populations of Bluefish.

7) *The materials considered in reaching its recommendations.*

- Staff Memo: 2020-2021 Bluefish ABC recommendations
- 2019 Operational Assessment and Peer Review Panel Report: Monkfish, Bluefish, Black Sea Bass, Scup
- OFL/ABC Bluefish Stock Projections
- Draft Bluefish OFL CV Framework Discussion Table
- 60th SAW/SARC Assessment Summary Report (2015)
- 60th SAW/SARC Assessment Report (2015)
- 2019 Advisory Panel Bluefish Fishery Performance Report
- 2019 Bluefish Fishery Information Document

8) *A conclusion that the recommendations provided by the SSC are based on scientific information the SSC believes meets the applicable National Standard guidelines for best scientific information available.*

The SSC believes that the recommendations provided are based on scientific information that meets the applicable National Standard guidelines for best scientific information available.

Summer Flounder

The SSC developed ABC recommendations for the 2019-2021 fishing years during its February 2019 webinar, based on the recently-completed and peer-reviewed benchmark assessment (SAW/SARC-66). The SSC recently received a data update from the NEFSC, which was summarized by Kiley Dancy (MAFMC staff) at the meeting. The total catch of Summer Flounder in 2018 was the lowest since 1982. State and federal survey indices indicate that the aggregate stock size of Summer Flounder increased from 2017 to 2018 and that recruitment in 2018 was above average. Sampling of the commercial fishery in 2018 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. Based on the information received, the SSC found no compelling reason to change its ABC recommendation for the 2020 fishing year (**11,354 mt**). An operational assessment is expected to be completed in 2021.

Scup

Mark Terceiro (NEFSC staff) presented an overview of the recently-completed and peer-reviewed operational assessment of Scup, followed by Karson Coutré (MAFMC staff), who summarized the management history and contents of the fishery performance report recently updated by the Summer Flounder, Scup, Black Sea Bass Advisory Panel. Scup were not overfished and overfishing was not occurring in 2018 relative to the biological reference points updated in the operational assessment. Spawning stock biomass (SSB) was estimated to be about two times the updated biomass target reference point in 2018, and the 2018 fishing mortality rate was 73% of the updated fishing mortality threshold reference point. The 2015 year class is estimated to be the largest in the time series, while the 2016-2018 year classes are estimated to be below average. Stock biomass is projected to further decrease toward the target unless more above-average year classes recruit to the stock in the short term.

The SSC's responses to the terms of reference provided by the MAFMC (in *italics*) are as follows.

For Scup, the SSC will provide a written report that identifies the following for the 2020-2021 fishing years:

1) *The level of uncertainty that the SSC deems most appropriate for the information content of the most recent stock assessment, based on criteria listed in the Omnibus Amendment.*

   The SSC determined that, based on the acceptance of the operational assessment by peer review panel, there is adequate basis to specify an OFL. The SSC determined the level of uncertainty of OFL in the assessment requires an SSC-specified CV.

2) *For the approaches identified in TOR 3 below, if possible, the level of catch (in weight) associated with the overfishing limits (OFL) based on the maximum fishing mortality rate threshold or, if appropriate, an OFL proxy.*

   OFL catch in 2019 is estimated at 21,350 mt. OFL catches in 2020 and 2021 are based on the assumptions that ABC will be caught in 2019 and 2020, respectively.

3) *The level of catch (in weight) and the probability of overfishing associated with the acceptable biological catch (ABC) for the stock including: 1) the typical approach of varying ABCs in each year, and 2) a constant ABC approach derived from the average 2020-2021 ABCs. Specify the number of fishing years for which the ABCs apply and, if possible, interim metrics that can be examined to determine if multi-year specifications need reconsideration prior to their expiration.*

   The SSC recommends that a CV of 60% be applied to the OFL estimate as an appropriate ABC for Scup. This decision largely comes from the high data quality and giving high weight to that OFL CV criterion, as well as consistency of signals from surveys, catch at age, and model results; the data agree with theory throughout. There is also a relatively low effect of revised MRIP estimates; 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 40% 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 trend in recent recruitment, so adjustment of projected recruitment appeared unwarranted. There was no significant impact of thermal habitat on interannual variation in availability, so adjustment of survey indices to account for thermal habitat effects also appeared unwarranted.

ABCs are based on projections that assume the ABC will be fully caught in each year; recruitment is sampled from 1984-2018.

Using an OFL with a lognormal distribution with a CV = 60% and a varying ABC approach, the SSC recommends the following OFLs and ABCs based upon projections:

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	B/B_{MSY}
2019	21,350	20,711	0.208	0.478	1.95
2020	18,674	16,227	0.185	0.400	1.75
2021	16,012	13,913	0.185	0.400	1.62

The average of the projected ABCs is 15,070 mt. These values were projected forward for 2020 and 2021, assuming the average value of the ABCs was landed. The SSC recommends the following OFLs and ABCs using a constant ABC approach:

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	B/B_{MSY}
2019	21,350	20,711	0.208	0.478	1.95
2020	18,674	15,070	0.171	0.349	1.75
2021	16,159	15,070	0.200	0.450	1.63

Interim metrics to be evaluated next year would include updated landings and discard data to enable evaluation of the assumption that the full ABC was caught; survey indices, including identification of trends in recruitment; and fishery performance reports to evaluate whether the commercial sector is targeting Scup.

4) *The most significant sources of scientific uncertainty associated with determination of OFL and ABC.*

Based on the operational assessment:

- Following the record 2015 year class, recruitments in 2016, 2017, and 2018 have all been below the time series mean. If this trend continues, short-term projections, which assume random values from the recruitment distribution over the 1984-2018 time series, may overestimate allowable catches absent additional high recruitments. However, the stock is currently above the target level, so reduction back to the target biomass would be expected.
- The Scup SCAA uses multiple selectivity blocks. The final selectivity block (2006-2018) is the longest in the model. The applicability of the most recent selectivity block to the current fishery condition is uncertain. If the fishery

selectivity implied in this block changes, estimates of stock number, spawning stock biomass, and fishing mortality become less reliable.

- Most of the fishery-independent indices used in the model provide estimates of the abundance of Scup < age 3. One consequence is that much of the information on the dynamics of Scup of older ages arise largely from the fishery catch-at-age and from assumptions of the model, and are not conditioned on fishery-independent observations. As a result, the dynamics of these older fish remain uncertain. Knowledge of the dynamics of these older age classes will become more important as the age structure continues to expand.
- The projection on which the ABC was determined is based on an assumption that the quotas would be landed in 2019, 2020, and 2021.

Based on the benchmark assessment:

- Uncertainty exists with respect to the assumed natural mortality rate (M) used in the assessment.
- Uncertainty exists as to whether the MSY proxies ($SSB_{40\%}$, $F_{40\%}$) selected and their precisions are appropriate for this stock.
- Survey indices are particularly sensitive to Scup availability, which results in high inter-annual variability – efforts were made to address this question in the SAW/SARC that should be continued

5) *Ecosystem considerations accounted for in the stock assessment, and any additional ecosystem considerations that the SSC considered in selecting the ABC, including the basis for those additional considerations.*

The ABCs were not modified based on ecosystem considerations. The benchmark stock assessment included ecosystems considerations, specifically efforts to estimate habitat suitability based on a thermal niche model that was fit to survey catchability, but this did not affect uncertainty in OFL CV.

6) *Prioritized research or monitoring recommendations that would reduce the scientific uncertainty in the ABC recommendations and/or improve the assessment level.*

Based on the operational assessment:

- Characterize the pattern of selectivity for older ages of Scup in both surveys and fisheries.
- Explore the applicability of the pattern of fishery selectivity in the model to the most recent catch data to determine whether a new selectivity block in the model is warranted.
- Mean weights-at-age have declined and age-at-maturity has increased slightly (the proportion mature at age 2 has decreased) in recent years. Continued monitoring of both is warranted.
- It was conjectured that the increase in stock biomass since 2000 resulted from increased recruitments due to the imposition of gear restriction areas (GRAs), to

minimize interactions between Scup and squid fisheries, and from increases in commercial mesh sizes. Long-term climate variation is a potential alternative explanation for increased recruitments from 2000 to 2015. Research to explore the validity of both hypotheses is warranted.

Based on the benchmark assessment:

- Improve estimates of discards and discard mortality for commercial and recreational fisheries.
- Evaluate the degree of bias in the catch, particularly the commercial catch.
- Conduct experiments to estimate catchability of Scup in NEFSC surveys.
- Explore the utility of incorporating ecological relationships, predation, and oceanic events that influence Scup population size on the continental shelf and its availability to resource surveys used in the stock assessment model.
- Explore additional source of age-length data from historical surveys to inform the early part of the time series, providing additional context for model results.
- An MSE could evaluate the effectiveness of Scup management procedures.

7) *The materials considered in reaching its recommendations.*

- Staff Memo: 2020-2021 Scup ABC recommendations
- 2019 Operational Assessment and Peer Review Panel Report: Monkfish, Bluefish, Black Sea Bass, Scup
- OFL/ABC Scup Stock Projections
- Draft Scup OFL CV Framework Discussion Table
- 60th SAW/SARC Assessment Summary Report (2015)
- 60th SAW/SARC Assessment Report (2015)
- 2019 Advisory Panel Fishery Performance Report
- 2019 Scup Fishery Information Document

8) *A conclusion that the recommendations provided by the SSC are based on scientific information the SSC believes meets the applicable National Standard guidelines for best scientific information available.*

The SSC believes that the recommendations provided are based on scientific information that meets the applicable National Standard guidelines for best scientific information available.

Spiny Dogfish

Jason Didden (MAFMC staff) summarized the recent data update for Spiny Dogfish prepared by the NEFSC. US commercial landings decreased 22% in 2018 and recreational landings and distant water fleet landings remained negligible. Canadian landings have been less than 100 tons since 2009. Overall landings in 2018 were dominated by females, a trend that has persisted since the US EEZ fishery began; most fishing takes place near shore where females are more abundant. The fraction of male dogfish in the landings increased in 2018 to about 10%. The three-year average of the mature female swept area biomass in the NEFSC spring survey decreased in 2019 because the high 2016 value in the average was replaced by the lower survey biomass estimate from 2019. The average is still above the biomass threshold and it would take a value lower than 24,400 mt in 2020 to cause an overfished condition next year. The 2019 data update indicates little evidence to suggest that stock condition has changed substantially from what was indicated in the 2018 benchmark assessment; therefore, the SSC decided not to change its ABC recommendation for the 2020 fishing year (**11,354 mt**). An operational assessment is expected to be completed in 2021.

Black Sea Bass

Gary Shepherd (NEFSC staff) presented an overview of the recently-completed and peer-reviewed operational assessment of Black Sea Bass, followed by Julia Beaty (MAFMC staff), who summarized the management history and contents of the fishery performance report recently updated by the Summer Flounder, Scup, Black Sea Bass Advisory Panel. The Black Sea Bass stock was not overfished and overfishing was not occurring in 2018 relative to the updated biological reference points. Spawning stock biomass (retrospectively-adjusted SSB) was estimated to be about 2.4 times the updated biomass target reference point, and the fishing mortality rate on the fully-selected ages 6-7 fish was 57% of the updated fishing mortality threshold reference point after adjusting for retrospective biases. The 2011 year class was estimated to be the largest in the time series and the 2015 year class was the second largest. Recruitment of the 2017 year class as age 1 in 2018 was estimated to have been well below average.

The SSC's responses to the terms of reference provided by the MAFMC (in *italics*) are as follows.

For Black Sea Bass, the SSC will provide a written report that identifies the following for fishing years 2017-2019:

1) The level of uncertainty that the SSC deems most appropriate for the information content of the most recent stock assessment, based on criteria listed in the Omnibus Amendment.

> The SSC determined that, based on the acceptance of the operational assessment by peer review panel, there is adequate basis to specify an OFL. The SSC determined the level of uncertainty of OFL in the assessment requires an SSC-specified CV.

2) For the approaches identified in TOR 3 below, if possible, the level of catch (in weight) associated with the overfishing limits (OFL) based on the maximum fishing mortality rate threshold or, if appropriate, an OFL proxy;

The SSC accepts the updated OFL proxy ($F_{40\%}$ = 0.46) used in the 2019 operational assessment. OFL catch in 2019 is estimated at 9,859 mt. OFL catches in 2020 and 2021 are based on the assumption that ABCs will be caught in 2019 and 2020, respectively.

3) The level of catch (in weight) and the probability of overfishing associated with the acceptable biological catch (ABC) for the stock including: 1) the typical approach of varying ABCs in each year, and 2) a constant ABC approach derived from the average 2020-2021 ABCs. Specify the number of fishing years for which the ABCs apply and, if possible, interim metrics that can be examined to determine if multi-year specifications need reconsideration prior to their expiration

The SSC recommends using a CV associated with the OFL of 100%. Classifications for the different decision criteria ranged from the 60% bin to the 150% (Attachment 6). Our overall classification in the 100% bin is based largely on the following observations:

- 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 notes that the assessment included a thorough analysis of the particulars of the life history of Black Sea Bass and, thus, recommends that no additional buffer for an atypical life history is necessary.

Using an OFL with a lognormal distribution with a CV = 100% and a <u>varying</u> ABC approach, the SSC recommends the following OFLs and ABCs based upon projections:

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	B/B_{MSY}
2019	9,859	7,917	0.33	0.39	1.96
2020	8,795	7,123	0.34	0.40	1.71
2021	8,083	6,546	0.36	0.40	1.61

The average of the projected ABCs is 6,835 mt. These values were projected forward for 2020 and 2021, assuming the average value of the ABCs was landed. The SSC recommends the following OFLs and ABCs using a constant ABC approach:

Year	OFL Total Catch	ABC Total Catch	ABC F	ABC P* value	B/B_{MSY}
2019	9,859	7,917	0.33	0.39	1.96
2020	8,795	6,835	0.30	0.38	1.68
2021	8,083	6,835	0.33	0.42	1.58

The SSC notes that the ABCs given above assume that the catch will be equal to the ABC each year, without error. If the actual catches moving forward do not meet this assumption, the SSC may have to reconsider the values given in the table.

Next year, the SSC will use the following interim metrics to determine if the ABC specification needs to be reconsidered:

- Estimated actual recreational and commercial catch levels
- Survey indices by subareas looking for continued evidence of divergence
- Evaluate patterns in MRIP in each sub-area for further departures from expectation

4) The most significant sources of scientific uncertainty associated with determination of OFL and ABC.

- 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 a constant M in the assessment model for both sexes — may not adequately capture the dynamics in M.
- 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 done without weighting based on landings or biomass. It is unclear whether or how the uncertainty should be treated when the BRPs are combined using simple addition.
- Future effects of temperature on stock productivity and range are highly uncertain.

5) Ecosystem considerations accounted for in the stock assessment, and any additional ecosystem considerations that the SSC took into account in selecting the ABC, including the basis for those additional considerations.

The recent operational assessment did not undertake any new analyses to explore potential additional ecosystem impacts on OFL. The SSC also considered the Free et al. (2019) paper that suggests that Black Sea Bass productivity has thus far increased with warming. No additional ecosystem considerations were included in the determination of ABC.

The 2016 benchmark assessment included different dynamics for each spatial sub-area to address observed differences in productivity. The assessment also explored the role of benthic habitat, temperature, depth, and salinity as explanatory factors on exchange rates (which did not provide additional explanatory power and were not included in the assessment).

6) Prioritized research or monitoring recommendations that would reduce the scientific uncertainty in the ABC recommendation and/or improve the assessment level.

The SSC endorses the list of research recommendations included in the 62nd SARC report.

In addition, the SSC recommends:

- Considering a directed study of the genetic structure in the population north of Cape Hatteras.
- Increasing our understanding of movement rates and cues within the population, and spatial patterns in growth, recruitment, and mortality.
- Developing a reliable fishery independent index for Black Sea Bass beyond the existing surveys. This may require development and implementation of a new survey.
- Additional monitoring and compliance investments to control ABCs at recommended levels that are necessary if predicted scientific outcomes for future stock biomasses are to be realized.
- Evaluating the implications of range expansion to stock and fishery dynamics.
- Understanding the importance of recruitment variability, given the role of individual, strong year classes in the dynamics of the population and the fisheries it supports.
- Evaluating evidence for increased production due to climate shift.

7) The materials considered in reaching its recommendations.

- Staff Memo: 2020-2021 Black Sea Bass ABC recommendations
- 2019 Operational Assessment and Peer Review Panel Report: Monkfish, Bluefish, Black Sea Bass, Scup
- OFL/ABC Black Sea Bass Stock Projections, revised 8/27/19

- Draft Black Sea Bass OFL CV Framework Discussion Table
- 62nd SAW/SARC Assessment Summary Report (2016)
- 62^{nd} SAW/SARC Black Sea Bass Assessment Report
- 2019 Advisory Panel Fishery Performance Report
- 2019 Black Sea Bass Fishery Information Document
- Impacts of historical warming on marine fisheries production (Free et. al. 2019)

8) A certification that the recommendations provided by the SSC represent the best scientific information available.

The SSC believes that the recommendations provided are based on scientific information that meets the applicable National Standard guidelines for best scientific information available.

Illex Working Group

Jason Didden (MAFMC staff) provided an overview of the *Illex* Working Group, including draft terms of reference; Jason and Paul Rago (SSC member) co-chair the working group. The overview centered on several themes, including the difficulty of the task, the importance of assembling all potential data sources, and deep engagement with fishery participants. The potential reliance on catch-per-unit-effort (CPUE) information and the impact of market conditions on fishery performance make engagement with fishery participants particularly critical to increase the chance of working group success. Periodic input by the Mackerel, Squid, Butterfish Advisory Panel input may not be sufficient to achieve deep engagement. The full range of stakeholders with interests in the *Illex* fishery should be included.

The working group is organizing its efforts based on shorter-term and longer-term tasks. The shorter-term tasks are designed to explore information that could inform SSC catch advice for in-year adjustments starting at the May 2020 SSC meeting. Longer-term tasks are designed to inform an upcoming benchmark assessment scheduled for 2021. Staff acknowledged the SSC's concern that this timeline is ambitious, potentially unrealistic, and dependent on the resources committed to the effort. SSC members highlighted the need to clearly lay out the various goals, and clearly identify what data and approaches can be brought to bear related to the goals.

SSC members raised a variety of ideas for consideration by the working group:

- A management strategy evaluation (MSE) looking at various management procedures should be considered given the uncertainties involved.
- Simple models or power analyses that attempt to track cohorts with fishery-dependent data or determine what would be needed to detect useful abundance indicators could be used.
- Managers need to be sure that the management system and associated processes can handle possible in-season adjustments, and that the costs of a new system are justified by the potential benefits.

- The data flow component of any real-time approach will be as important as the management and modeling approaches.
- Seeing simple as well as complex approaches would be useful; for example, depletion models like the Falkland Islands approach (migration makes these challenging).
- The Council should further explore what kind of flexibility is allowed in the Magnuson-Stevens Act.
- The utility of an experimental fishery or research set-aside should be explored.
- Intermediate analyses may be useful, such as examining if there is a general apparent lack of depletion throughout the various fishing years.

There was also a discussion that the working group was not a direct charge to the SSC at this point, but the SSC would be reviewing the output of the working group.

Public participants attending the meeting indicated that fishery participants are extremely willing to contribute ideas, data, and some vessel time to assist in development of approaches that allow additional utilization of *Illex* during high availability years. They also highlighted that fishery participants are the only ones that have access to substantial information (biological and economic) about the *Illex* fishery during the fishing season, and reaffirmed the discussion regarding the need for deep engagement with fishery participants (harvesters <u>and</u> processors). There is also interest in continuing to explore whether NAFO/Canadian assessments can be used to justify higher or additional U.S. quotas. Skepticism about the usefulness of MSEs was also voiced.

Five-Year (2020-2024) Research Priorities

Brandon Muffley (MAFMC staff) provided an overview on the current status and development of the Council's five-year research priorities document. At the request of the SSC during their March 2019 meeting, a review on the Council's utilization of the current research priorities document was also provided. The review indicated a high proportion of Council-supported scientific and management projects were identified in the current research plan and were used to support a stock assessment or management action.

The SSC offered extensive feedback on the broad science and research themes to be highlighted in the next priorities document. The SSC indicated all of the existing themes, except for data collection through electronic reporting, remain very relevant and should continue to be considered high priority. The SSC viewed the strength of the Council's research program lies in the ability to catalyze efforts of others through collaborative research and matching funds. In addition, new themes focusing on climate change implications on stock productivity and distribution and addressing recreational data collection were recommended for inclusion. The SSC also recommended prioritizing the species- and FMP-specific needs by shorter-term/lower cost vs longer-term/higher cost projects to allow for both tactical and strategic approaches in order to leverage resources and address the extensive list of priorities. The SSC saw a need for vigilant oversight of the Council's research, perhaps by the Council's Research Steering Committee, to make sure it is coherent and addressing the Council's strategic plan. Feedback from the SSC will be incorporated into the draft 2020-2024 research priorities document and in the Science goal of the updated strategic plan.

Future SSC Membership

The SSC also discussed future SSC membership needs and expertise. Earlier in 2019, the Council re-appointed 16 existing members of the SSC to another three-year term, leaving four vacancies on the SSC. The Council is seeking to align new SSC membership and expertise with future Council needs and priorities. The SSC had a lengthy discussion regarding increased social science membership and the appropriate utilization of this increased expertise. There was broad support for increased social science membership; however, the SSC believes the Council needs to define role that the social sciences would play in addressing Council needs in order to appropriately identify expertise and expectations.

Other areas of additional expertise and needs noted by the SSC include stock assessment science, fisheries ecology and life history with expertise in data-limited methods, ecosystem science with expertise in stock structure or genetics, recreational fisheries and data collection, and operations research expertise in management strategies and optimization. The SSC also suggested reinstituting the appointment of a Council member to serve as a liaison between the Council and SSC; the Council Vice-chair responded by stating that he and the Council Chair are filling that role. The Council will determine membership needs and expertise at their December meeting and new members will be selected in order to begin with participation on the SSC in March of 2020.

c: SSC Members, Warren Elliott, Chris Moore, Brandon Muffley, Matt Seeley, Kiley Dancy, Karson Coutré, Jason Didden, Julia Beaty, Tony Wood, Mark Terceiro, Kathy Sosebee, Gary Shepherd, Jan Saunders

Mid-Atlantic Fishery Management Council

Scientific and Statistical Committee Meeting

September 9 - 11, 2019

Royal Sonesta Harbor Place

550 Light Street, Baltimore, MD, 21202

AGENDA

Monday, September 9, 2019

1:00 Welcome/Overview of meeting agenda (J. Boreman)

1:10 Bluefish ABC specifications for 2020-2021 fishing years (T. Wood/M. Seeley)

4:00 Summer Flounder data and fishery update; review of previously recommended 2020 ABC (K. Dancy)

5:00 Adjourn

Tuesday, September 10, 2019

8:30 Scup ABC specifications for 2020-2021 fishing years (M. Terceiro/K. Coutré)

11:30 Spiny Dogfish data and fishery update; review of previously recommended 2020 ABC (J. Didden)

12:30 Lunch

1:30 Black Sea Bass ABC specifications for 2020-2021 fishing years (G. Shepherd/J. Beaty)

4:30 *Illex* workgroup update and feedback

5:30 Adjourn

Wednesday, September 11, 2019

8:30 Review and input on 5-year (2020-2024) research plan

10:00 Review and discussion on future SSC membership

11:30 Other business

12:00 Adjourn

Attachment 2

MAFMC Scientific and Statistical Committee
9-11 September 2019

Meeting Attendance

Name	Affiliation
SSC Members in Attendance:	
John Boreman (SSC Chairman)	NOAA Fisheries (retired)
Tom Miller (SSC Vice-Chairman)	University of Maryland – CBL
Ed Houde	University of Maryland – CBL (emeritus)
Dave Secor (September 9^{th} and 10^{th} only)	University of Maryland – CBL
Paul Rago	NOAA Fisheries (retired)
Wendy Gabriel	NOAA Fisheries Northeast Fisheries Science Center
Lee Anderson	University of Delaware (emeritus)
Yan Jiao	Virginia Tech University
Rob Latour	VIMS
Brian Rothschild	University of Massachusetts – Dartmouth (emeritus)
Olaf Jensen	Rutgers University
Sarah Gaichas	NOAA Fisheries Northeast Fisheries Science Center
Cynthia Jones (via webinar, September 9^{th} only)	Old Dominion University
Mike Wilberg	University of Maryland – CBL
Others in attendance:	
Kiley Dancy (September 9^{th} and 10^{th} only)	MAFMC staff
Matt Seeley (September 9^{th} only)	MAFMC staff
Jason Didden (September 9^{th} and 10^{th} only)	MAFMC staff
Karson Coutré (September 9^{th} and 10^{th} only)	MAFMC staff
Julia Beaty (September 10^{th} only)	MAFMC staff
Brandon Muffley	MAFMC staff
Emily Gilbert (September 9^{th} and 10^{th} only)	NOAA Fisheries GARFO
Tony Wood (via webinar, September 9^{th} only)	NOAA Fisheries Northeast Fisheries Science Center
Mark Terceiro (via webinar, September 9^{th} and 10^{th} only)	NOAA Fisheries Northeast Fisheries Science Center
Gary Shepherd (via webinar, September 10^{th} only)	NOAA Fisheries Northeast Fisheries Science Center
Kathy Sosebee (via webinar, September 10^{th} only)	NOAA Fisheries Northeast Fisheries Science Center
Dustin Colson Leaning (September 9^{th} and 10^{th} only)	ASMFC staff
Kirby Rootes-Murdy (September 9^{th} only)	ASFMC staff
Caitlin Stark (September 10^{th} only)	ASMFC staff
Mike Luisi (September 9^{th} and 10^{th} only)	MAFMC Chair
Warren Elliott	MAFMC Vice-Chair
Meghan Lapp	SeaFreeze
Greg DiDomenico (September 10^{th} only)	GSSA
Jim Ruhle (September 10^{th} only)	

OFL CV Decision Table Criteria

Decision Criteria	Default OFL CV=60%	Default OFL CV=100%	Default OFL CV=150%
Data quality	One or more synoptic surveys over stock area for multiple years. High quality monitoring of landings size and age composition. Long term, precise monitoring of discards. Landings estimates highly accurate.	Low precision synoptic surveys or one or more regional surveys which lack coherency in trend. Age and/or length data available with uncertain quality. Lacking or imprecise discard estimates. Moderate accuracy of landings estimates.	No reliable abundance indices. Catch estimates are unreliable. No age and/or length data available or highly uncertain. Natural mortality rates are unknown or suspected to be highly variable. Incomplete landings estimates.
Model appropriateness and identification process	Multiple differently structured models agree on outputs; many sensitivities explored. Model appropriately captures/considers species life history and spatial/stock structure (e.g. black sea bass).	Single model structure with many parameter sensitivities explored.	Highly divergent outputs from multiple models or no exploration of alternative model structures or sensitivities.
Retrospective analysis	No retrospective adjustment necessary, or OFL estimate includes retrospective adjustment.	OFL estimate includes retrospective adjustment only if outside 95% bounds of non-adjusted terminal B and F.	No retrospective analysis or severe retrospective pattern observed.
Comparison with empirical measures or simpler analyses	Assessment biomass and/or fishing mortality estimates compare favorably with empirical estimates.	Both assessment biomass and/or fishing mortality empirical estimates highly uncertain.	Estimates of scale are difficult to reconcile and/or no empirical estimates.
Ecosystem factors accounted	Assessment considered habitat and ecosystem effects on stock productivity, distribution, mortality and quantitatively included appropriate factors, reducing uncertainty in short term predictions. Evidence outside the assessment suggests that ecosystem productivity and habitat quality are stable. Comparable species in the region have synchronous production characteristics and stable short-term predictions. Climate vulnerability analysis suggests positive impacts on productivity from changing climate	Assessment considered habitat/ecosystem factors but did not demonstrate either reduced or inflated short-term prediction uncertainty based on these factors. Evidence outside the assessment suggests that ecosystem productivity and habitat quality are variable, with mixed productivity and uncertainty signals among comparable species in the region. Climate vulnerability analysis suggests neutral impacts on productivity from changing climate.	Assessment either demonstrated that including appropriate ecosystem/habitat factors increases short-term prediction uncertainty, or did not consider habitat and ecosystem factors. Evidence outside the assessment suggests that ecosystem productivity and habitat quality variable and degrading. Comparable species in the region have high uncertainty in short term predictions. Climate vulnerability analysis suggests negative impacts on productivity from changing climate.
Trend in recruitment	OFL estimates adjusted for recent trends in recruitment.	No recruitment trend or uncertain. Insufficient evidence to adjust OFL estimate based on recruitment information available.	Recruitment trend not considered or no recruitment estimate.
Prediction error	Low estimate of recent prediction error	Moderate estimate of recent prediction error	High or no estimate of recent prediction error
Assessment accuracy under different fishing pressures	High degree of contrast in landings and surveys with apparent response in indices to changes in removals. Observed high fishing mortality in recent years.	Moderate contrast in surveys and catches. “One-way” trips for production models. Observed moderate fishing mortality in fishery (i.e. lack of high fishing mortality in recent years).	Relatively little change in surveys or catches over time. Low precision of estimates. Low fishing mortality in recent years.
Simulation analysis/MSE	Can be used to evaluate different combinations of uncertainties and indicate the most appropriate OFL CV for a particular stock assessment		

SSC-Approved OFL CV Decision Table for Bluefish

Decision Criteria	Default OFL CV=60%	Default OFL CV=100%	Default OFL CV=150%
Data quality		A fishery-dependent measure of abundance is obtained as catch-per-unit effort from the MRIP intercept survey (1985-2018), which constitutes a large component of data (recreational catch = 80% of total). Newly revised historical MRIP catch estimates were used in assessment. The new estimates scale up the entire MRIP catch series instead of converging in the 1980s as expected. NEFSC fall survey data are available for all years (except fall 2017 Bigelow) in the assessment. These surveys do not cover the southern portion of the species range. Additionally, six regional surveys are used in model tuning. Bigelow estimates adjusted for results of cooperative research studies on gear efficiency. Age data available for all years in surveys (1982-2017), and age-length keys from surveys were applied to commercial landings and recreational landings. Lengths of recreational discards were obtained through angler self-reporting from the Volunteer Angler Survey and minimal information from MRIP. Commercial discards are low, considered negligible and not include in analysis. Recreational discards are high at approximately 50% of the recreational landings and add a level of uncertainty. The MRIP calibration for live discards converges as expected in the 1980s to the MRFSS values, unlike the calibrated catch time series. Note also that recent discards are larger fish. Live discards are assumed to have a 0.15 mortality rate.	
Model appropriateness and identification process		A complex ASAP SCAA model was used with fixed M = 0.2 was used in the assessment model. The fishery is modeled with two fleets: commercial and recreational. The benchmark assessment authors tested several configurations of the ASAP SCAA before the current configuration was accepted. The model is strongly driven by the MRIP index. YPR and AGEPRO models were also used to assess BRP and projections.	
Retrospective analysis		Retrospective patterns in the operational assessment are considered minor, with retrospective errors over the last 7 terminal years averaging -18% for F and +19% for SSB. The SARC 60 benchmark and subsequent updates showed similar trends for SSB, F, and recruitment. Moreover, as the assessment has been updated more of the time series shows overfishing with the retrospective patterns, indicating that the stock has been overfished with overfishing occurring over the past five years. New calibrated MRIP data resulted in a rescaling of SSB, F, and R to higher estimates compared with old data.	

Comparison with empirical measures or simpler analyses		Simple measures of comparison were used for age compositions and weight-at-age.	
Ecosystem factors accounted		Aspects of the ecosystem seem to be changing in recent years. Fall ocean bottom and surface temperatures are increasing, and salinity is at or near the historical high. These physical data series may have shifted around 2012, the warmest year on record for this ecosystem. Spring chlorophyll concentrations, a measure of bottom-up ecosystem production in the Bluefish stock area, are variable, but the fall time series has been decreasing, especially during 2013-2017. Spring abundances for key zooplankton prey are variable and may be worth examining along with other forage species. Bluefish have two recruitment contingents, one in spring and one in fall, and both could be affected by changing abundances of forage. The benchmark assessment used a thermal niche model to assess survey catchability of Bluefish.	
Trend in recruitment		Average recruitment from 1985 to 2018 is 46 million fish at age 0 with no real trend over time. Recruitment has been approximately 15% below average over the last decade, except in 2013. Overall recruitment is variable; the highest recruitment occurred in 1989 and the lowest in 1992, with an average recruitment of 46,159,000 age 0 fish.	
Prediction error		Prior to the 2015 benchmark, comparisons of annual forecasts of stock biomass with realized estimates of stock biomass in subsequent assessments reveal a one-year ahead forecasting error with a CV=14%. For two-year forecasts the CV is 26%, and for 3 year forecasts the CV is also 26%. The average percentage difference between the projection and the subsequent estimate for 1, 2, and 3-yr projections was +12%, +23% and +24%, respectively. Inclusion of the revised MRIP data increased the population scale proportionately through the entire time series, rendering prediction comparisons less useful as a metric of model performance. Moreover, the MRIP calibration results in different patterns across the species that rely on this measure, hence increasing uncertainty. Finally, the mode of fishing shows a trend to increasing shore fishing in the most recent years.	
Assessment accuracy under different fishing pressures	Fishing mortality has varied over a 3-fold range during the assessment period, with a major decline in 2018 that may be dependent on the MRIP recalibration. Over the past decade F has fluctuated around the series average of F = 0.35, except for the dramatic decline in 2018 to F = 0.15. Recent Fs have been relatively high, resulting in better data contrast for modeling.		
Simulation analysis/MSE	No formal MSE-type analyses have been conducted for this stock.		

SSC-Approved OFL CV Decision Table for Scup

Decision Criteria	Default OFL CV=60%	Default OFL CV=100%	Default OFL CV=150%
Data quality	Synoptic surveys over the stock area include the NEFSC spring and autumn bottom trawl surveys, but these surveys show large interannual fluctuations which reflect availability rather than abundance in any single year. Surveys generally rarely catch fish age three and older (less of a concern now than 10-15 years ago), although older ages are present in commercial and recreational catch at ages. Other surveys do not cover the stock area, and most catch few fish over age 2. Commercial landings have been well sampled for length and age since 1995. Commercial discards have been fairly well sampled since 2000, although discard observations are highly variable and skewed. New MRIP data were used to estimate recreational landings and discards, leading to an average increase of 18%. About 40% of the catch weight is based on new MRIP estimates. Length sampling of recreational landings has generally been adequate since 1988. Recreational discard is low. Recreational landings are up to half of total catch, not the dominant component.		
Model appropriateness and identification process		The assessment model is based on a complex statistical catch-at-age model (ASAP SCAA). Catch is modelled as four fleets (commercial and recreational landings and discards). Life history does not require special model efforts. About 25 different configurations were explored in earlier benchmark. The effect of new MRIP estimates on continued validity of prior sensitivity analyses depends on the magnitude of the change. Because proportion of landings attributable to new MRIP estimates is relatively low, we could expect sensitivity analyses to remain valid. Biological reference points were updated in the operational assessment.	
Retrospective analysis	Retrospective patterns were minor: F overestimated by 26% and SSB underestimated by 11% over the last 7 terminal years. Adjusted 2018 estimates were within the model-estimated 90% confidence intervals. General trends in retrospective patterns for SSB, R, and F have been consistent for the past 10 years.		
Comparison with empirical measures or		Age structure in fishery and survey catches has been expanding since the	

simpler analyses		1990s. Aggregate survey indices are near time series highs. Several large recruitment events likely gave rise to survey index highs. Given the potential effects of availability in any given year, swept area estimates of biomass are less reliable than for some other stocks.	
Ecosystem factors accounted		No ecosystem factors were considered in the assessment, but mean weights at age and maturity have been declining. Previous assessments examined thermal habitat models to evaluate factors affecting availability, but no strong effects were observed.	
Trend in recruitment		Although the 2014 and especially the 2015 year classes were above average, 2016 – 2018 year classes were below average. OFL projections were sampled from estimated recruitment for 1984-2018.	
Prediction error		No estimate of prediction error is feasible at this point, given the inclusion of revised MRIP data in this year's assessment and attendant effects on biomass estimates. However, inclusion of the updated MRIP data led to relatively little changes in estimates of F and SSB of Scup, so prediction error is unlikely to increase.	
Assessment accuracy under different fishing pressures	Fishing mortality declined by more than 4-fold over the assessment series, while SSB increased more than 10-fold. Fishing mortality in the past 16 years has been low, but increases in SSB, R, C, and survey indices are consistent.		
Simulation analysis/MSE	No formal MSE-type analyses have been conducted for this stock.		

SSC-Approved OFL CV Decision Table for Black Sea Bass

Decision Criteria	Default OFL CV=60%	Default OFL CV=100%	Default OFL CV=150%
Data quality		Large recreational component (~60-80% of total in recent years) places reliance on MRIP. Updated MRIP numbers show an understandable pattern of large increases in northern sub-area in recent years, but less so in the south. MRIP data for 2016 are considered implausible owing to high variance in wave-specific data, but attempts to account for this observation did not materially affect model results. Fishery-independent data are derived from both NEFSC and state surveys. NEFSC surveys provide coverage of all ages. State surveys in the northern portion of the Mid-Atlantic provide estimates of all ages, but state surveys in the southern sub-area index age-1 fish only, requiring use of a Recreational Catch Per Angler (CPA) index.	
Model appropriateness and identification process	BSB uses a two-area model for assessment, with no exchange between sub-areas (North/South). A range of alternative model structures were presented at SAW 62, including a single area model, and a two-area model with exchange. Most of this wide range of different models give qualitatively similar conclusions about stock status and trends. The two-area model responds to presence of a dominant 2011 year class in the northern sub-area but not in the southern. Adoption of the two sub-area model greatly improved model fit, especially of the 2011 year class data. Growth rates are different between sub-areas as well. However, the division of the stock into two sub-areas was based on exchange and stock structure with limited support in the ecological literature: tagging data, oceanographic data, and a need to have a relatively equitable division of available data.		
Retrospective analysis			Substantial retrospective bias in both northern and southern sub-areas is present in the 2019 operational assessment (Mohn's ρ > 0.4) – although the direction of bias is in opposite directions in the two sub-areas. Retrospectively adjusted SSB is approximately 40-50% higher than unadjusted, but

			adjustments do not change stock status. This pattern was also present in SAW 62.
Comparison with empirical measures or simpler analyses	The relationship between the recreational CPA index and a swept area index of exploitable biomass from the NESFC spring survey was presented at the 2019 operational assessment, as a part of a "Plan B" approach. The swept-area estimate was coherent and broadly consistent with model output.		
Ecosystem factors accounted		No ecosystem factors were considered in the assessment. Clear northward shift in the stock's geographic distribution suggests an influence of temperature and changing ecosystem dynamics, especially at the northern edge of the range. Analysis of temperature-linked surplus production suggests that Black Sea Bass productivity has thus far increased with warming.	
Trend in recruitment		OFL is calculated based on most recent, higher, but more variable recruitment. BSB stock abundance has been dominated by several recent strong year classes. Most notably, a 2011 year class was strong in the northern sub-area but very weak in the southern sub-area. This year class has supported a large fraction of the fishery. Evidence exists for a second recent strong year class in 2015, which was more evenly distributed. This year class is now beginning to enter the fishery. The 2017 year class may be one of the lowest in the time series.	
Prediction error		In the past, the SSC could compare across successive stock assessment predictions of OFL, but inclusion of the revised MRIP data increased the population scale proportionately throughout the entire time series, rendering prediction comparisons less useful as a metric of model performance. Combining model predictions from the two sub areas into a single stock projection makes understanding prediction error more challenging.	
Assessment accuracy under different fishing pressures	Long-term catch and survey index history shows substantial contrast, including periods of high (early 1990s) and low (recent decade) F and a 6-fold increase in SSB since Fs were reduced; i.e., a strong response to declining F. Recent Fs have been near F_{msy}.		
Simulation analysis/MSE	No formal MSE-type analyses have been conducted for this stock.		

2019 Planned Council Meeting Topics

Updated 9/25/19

October 7-10, 2019 – Durham, NC

- Black Sea Bass 2020-2021 Specifications – *Develop and Approve*
- Scup 2020-2021 Specifications – *Develop and Approve*
- Bluefish 2020-2021 Specifications – *Develop and Approve*
- Bluefish Allocation Amendment – *Update and Discuss*
- Summer Flounder 2020 Specifications – *Review*
- Scup Discard Report – *Update and Discuss*
- ~~Evaluation of Mesh Size Regulations for Summer Flounder, Scup, Black Sea Bass~~
- Monkfish 2020-2022 Specifications – *Develop and Approve*
- 2020-2024 Comprehensive Research Priorities – *Review and Discuss Draft*
- 2020-2024 Strategic Plan – *Review Draft*
- 2020 Implementation Plan - *Review Draft* *Deliverables*
- *Illex* Permitting & MSB FMP Goals Amendment – *Update and Discuss*
- Spiny Dogfish 2020 Specifications – *Review*
- Black Sea Bass Commercial ~~and Recreational Issues~~ Amendment - *Discuss and Consider Initiating Action*
- *Illex* Working Group – *Update*
- *Recreational Reform Initiative – Update*

December 10-12, 2019

- Bluefish Allocation Amendment – *Approve Range of Alternatives*
- Summer Flounder 2020 Recreational Management Measures – *Develop and Approve*
- Scup 2020 Recreational Management Measures – *Develop and Approve*
- Black Sea Bass 2020 Recreational Management Measures – *Develop and Approve*
- Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment - *Approve scoping plan*
- EAFM Summer Flounder Conceptual Model – *Review Results and Next Steps*
- 2020-2024 Comprehensive Research Priorities – *Review and Approve*
- Risk Policy Framework – *Framework Meeting 2 (Final Action)*
- Review of New SSC Membership
- 2020 Implementation Plan – *Approve*
- 2020-2024 Strategic Plan – *Approve*
- Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment – *Final Action* (moved from October)
- Summer Flounder Commercial/Recreational Allocation Study Update (moved from October)
- Commercial eVTR Omnibus Framework – *Framework Meeting 2* (Final Action) (moved from August)
- Update on Habitat Activities (moved from October)

- Illex Permitting & MSB FMP Goals Amendment – Review Public Hearing Document and Select Any Preliminary Preferred Alternatives (moved from October)

Status of Council Actions Under Development

AS OF 09/24/19

FMP	Action	Description	Status	Staff Lead
Mackerel, Squid, Butterfish	*Illex* Permit and MSB Goals and Objectives Amendment	To ensure optimal management and fishery operation, the Council is considering modifications to the Illex permitting system as well as revisions to the goals and objectives for the MSB FMP.	The Council reviewed comments in June, and development is expected through 2019 and in to 2020.	Didden
Bluefish	Bluefish Allocation Amendment	This amendment considers potential revisions to the allocation of Atlantic bluefish between the commercial and recreational fisheries and the commercial allocations to the states. As part of this amendment the Council and ASMFC will also review the goals and objectives of the bluefish FMP and the quota transfer processes. http://www.mafmc.org/actions/bluefish-allocation-amendment	The bluefish FMAT will meet in August to discuss draft alternatives.	Seeley
Surfclams and Ocean Quahogs	Excessive Shares Amendment	This amendment considers options to ensure that no individual, corporation, or other entity acquires an excessive share of the Surfclam and Ocean Quahog Individual Transferable Quota (ITQ) privileges. In addition, the goals and objectives for the SCOQ FMP will be reviewed and potentially revised. http://www.mafmc.org/actions/scoq-excessive-shares-amendment	Council will review public comments and input from the SCOQ AP and SCOQ Committee will be presented to the Council at its December 2019 Council meeting, when the Council discusses the final action/approval of the Excessive Shares Amendment.	Montañez
Omnibus	Risk Policy Framework	The purpose of this framework action is to provide for a review of the ABC control rule framework and Council Risk Policy established in 2010 and to recommend any changes.	The Council held Framework Meeting 1 at the August 2019 meeting. Staff, along with a workgroup, is currently evaluating nine different control rule alternatives approved by the Council that consider both biological and economic factors and trade-offs. The Council will take final action on the risk policy framework at their December meeting.	Muffley

FMP	Action	Description	Status	Staff Lead
	Omnibus Amendment for Data Modernization	This amendment will address the regulatory changes needed to fully implement the Agency's Fishery-Dependent Data Initiative.	The Council received an update at the October 2018 meeting.	GARFO/ NEFSC
	Commercial eVTR Framework	This framework considers requiring commercial fishing vessels with federal permits for species managed by the Council to submit VTRs electronically. http://www.mafmc.org/actions/commercial-evtr-framework	The first Framework meeting for this action was held in April 2019. In June the NEFMC initiated a joint eVTR action with the MAFMC and chose to expand the framework action to include all NEFMC-managed fisheries.	Coutre

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

As of 9/26/2019

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."

Status	Amendment/Framework	Action Number	Council Approval	Initial Submission	Final Submission	NOA Published	Proposed Rule Published	Approval/ Disapproval Letter	Final Rule Published	Regs Effective
Complete	Squid Amendment	MSB AM 20	6/7/17	12/12/17	7/20/18	7/27/18	8/31/18	10/23/18	12/14/18	3/1/19
Open	Atlantic Mackerel Rebuilding Framework	MSB FW 13	8/13/18	9/27/18	2/28/19	N/A	6/7/19			
Open	Summer Flounder, Scup, and Black Sea Bass Framework on Conservation Equivalency, Block Island Sound Transit, and Slot Limits	SFSBSB FW 14	12/11/18	3/21/19	5/8/19	N/A	8/8/19			
Open	Summer Flounder Commercial Issues and Goals and Objectives Amendment	TBD	3/6/19							
Open	Chub Mackerel Amendment	TBD	3/7/19	5/31/19	9/9/19					

Timeline and Status of Current and Upcoming Specifications for MAFMC Fisheries

As of 9/26/2019

Current Specifications	Year(s)	Council Approval	Initial Submission	Final Submission	Proposed Rule	Final Rule	Regs Effective	Notes
Golden Tilefish	2018-2020	4/11/17	6/5/17	8/16/17	9/7/17	11/7/17	11/2/17	2019 specs were reviewed in April 2018. No changes were recommended.
Surfclam and Ocean Quahog	2018-2020	6/6/17	8/14/17	9/22/17	12/8/17	2/6/18	3/8/18	2019 specs were reviewed in June 2018. No changes were recommended.
Longfin Squid and Butterfish	2018-2020	6/7/17		8/24/17	12/13/17	3/1/18	4/2/18	2019 specs were reviewed in October 2018. No changes were recommended.
Illex Squid	2019-2021	10/3/18	12/4/18	2/11/19	5/1/19	8/2/19	8/1/19	
Atlantic Mackerel (MSB FW 13)	2019-2021	8/13/18	9/27/18	2/28/19	6/7/19			
Chub mackerel	2020-2022	3/7/19	5/31/19	9/9/19				
Scup	2018-2019	8/8/17	10/2/17	12/1/17	11/7/17	12/22/17	12/22/17	
Scup	2020		6/11/19	7/24/19	7/26/19			Interim specs to be replaced as soon as possible after results of 2019 operational assessment are available
Blueline Tilefish	2019-2021	4/11/18	8/17/18		11/19/18	2/12/19	2/12/19	
Bluefish	2019	8/15/18			12/26/18	3/12/19	3/12/19	
Bluefish	2020	3/7/19	6/11/19	7/24/19	7/26/19			Interim specs to be replaced as soon as possible after results of 2019 operational assessment are available
Summer Flounder	2019 (interim)	8/15/18	10/12/18	11/28/18	11/15/18	12/17/18		
Summer Flounder	2019 (revised)	3/6/19	4/12/19	4/12/19	N/A	5/17/19	5/17/19	
Summer Flounder	2020-2021	3/6/19	6/25/19	7/18/19	7/26/19			
Black Sea Bass	2019	8/14/18	10/12/18	11/28/18	11/15/18	12/17/18		
Black Sea Bass	2020	3/7/19	6/11/19	7/24/19	7/26/19			Interim specs to be replaced as soon as possible after results of 2019 operational assessment are available
Spiny Dogfish	2019-2021	10/2/18	11/30/18	3/5/19	3/29/19	5/15/19	5/15/19	

Recreational Management Measures

Current Management Measures	Year(s)	Council Approval	Initial Submission	Final Submission	Proposed Rule	Final Rule	Regs Effective	Notes
Summer flounder recreational measures	2019	3/6/19	4/18/19	4/18/19	5/17/19	7/3/19	7/3/19	
Black sea bass recreational measures	2019	2/14/18	3/5/18	4/10/18	4/11/18	5/31/18	5/31/18	Reviewed in 2018. No changes from prevous year's measures.
Scup recreational measures	2019	12/10/14	3/20/15		5/5/15	6/19/15	6/19/15	Reviewed in 2018. No changes from prevous year's measures.

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

MEMORANDUM

Date: September 26, 2019

To: Council

From: Jason Didden, staff

Subject: Standardized Bycatch Reporting Methodology 3-year Review Report

The Standardized Bycatch Reporting Methodology 3-year Review Report covering the 2015-2017 SBRM years will soon be published to the NEFSC's website (https://www.nefsc.noaa.gov/publications/tm/). Upon official publication, a link will be distributed to the Council.

This review did not find any aspect of the SBRM that is inconsistent with the national guidelines specified at 50 CFR Part 600.1610, and no deficiencies were identified that would require an amendment to an FMP to meet these requirements. This report is provided to NMFS for its consideration in making a formal determination in this regard. If, based on the information contained in this report along with other available information, NMFS concludes the Greater Atlantic SBRM is consistent with the national guidance, no additional council action would be required. A variety of recommendations are made in the report, excerpted below. If the Council would like additional details, a future presentation can be arranged.

• The SBRM FMAT recommends excluding compliance/state/other observed trips in the evaluation of the effectiveness of SBRM for fish species. The stratification and differential coverage levels of the compliance monitoring trips could create potential bias within SBRM fleets. The SBRM FMAT also recommends the exclusion of individual FMP compliance monitoring program trips from future SBRM annual analysis of discard estimation, precision and sample size analyses for fish.

• The SBRM Omnibus Amendment requires 30% CV or less to be attained for each species group within that fleet. Some fleet/species combinations contribute very little to the total mortality or discard of the species, but may require significant resources to characterize the precision of the estimate. Thus, the use of the importance filter is a key feature to the SBRM in that is focuses the sampling to fleets where it is needed most and not wasted on small imprecisely estimated discards. The SBRM FMAT recommends continued use of importance filters.

• High levels of monitoring are typically required to estimate the magnitude of rare events, such as sea turtle encounters, with high precision (low CVs). The SBRM FMAT recommends using a "rarity" filter (see section 6.0) for sea turtles to prevent sea day needs in some fleets from being driven by species with a low probability of encounter with the fishing gear. If a rare species is filtered from the sea day estimation process, monitoring of the rare species would still occur, but the targeted level of monitoring would be driven by other species groups. In addition to recommending the rarity filter for sea turtles, the SBRM FMAT recommends that rarity filters be developed and implemented, as appropriate, for other ESA-listed species such as Atlantic salmon and sturgeon.

• Using the formulaic prioritization process since SBRM 2014 results in more fleets with allocated sea days. However, there were instances in which some fleets did not receive the number of sea days needed or initially estimated. A funding shortfall in SBRM 2015 triggered the prioritization process in which 2 fleets did not receive sufficient sea days. Because of allocation decisions made prior to the prioritization process, 1 fleet in SBRM 2016 and 2 fleets in SBRM 2017 did not receive the full number of needed sea days. The SBRM FMAT recommends continued use of the formulaic prioritization process for transparent determination of how limited funds are allocated.

• Evidence suggests the assumption that discard variances are stable over time is valid, particularly for a one-year lag. If fishing behavior changes because of a regulatory change, then relationship between years may weaken in the year following the regulatory change. A similar weakening in the relationship may occur when fish populations change – for example, if a strong year class is moving through the fishery. These types of analyses should be conducted on a periodic basis. Conducting sample size analyses annually minimizes the time to a one-year lag. The SBRM FMAT recommends continued use of the most recent data available to track changes in discarding because of changes in management or fleet behavior when allocating future observer coverage.

• No evidence of systematic vessel selection bias and no strong evidence of observer bias was detected in the analyses conducted for this report. Recent studies examining observer data for potential bias have mostly focused on groundfish fleets (sub-components of selected fleets within SBRM). A comprehensive examination of potential bias in all SBRM fleets is a large task that will continue to require future work. Future analyses could consider addition trip outcome metrics such as mean number of species reported, number of areas fished, and an evaluation of minimum observer sample size (e.g., could fleets with less than 30 observed trips be considered). The SBRM FMAT recommends continued exploration of potential biases in the data collection process and examination of how these might impact sea day allocations.

• The SBRM FMAT recommends the following planned changes (some of which will be implemented in 2018 SBRM annual analysis):

(1) The inclusion of blueline tilefish in the Tilefish species group in 2018 SBRM analyses;

(2) The consideration of ESA-list species such as sturgeon (Atlantic sturgeon and shortnose sturgeon) as species groups;

(3) Expanding the sampling frame for New England and Mid-Atlantic lobster pot fleets to include all vessels using lobster pot gear in future SBRM analyses; and

(4) Utilize a PTNS-like system for all fleets as identified in the regional fishery dependent data initiative (implementation date to be determined).

RAÚL M. GRIJALVA OF ARIZONA
CHAIRMAN

DAVID WATKINS
STAFF DIRECTOR

U.S. House of Representatives
Committee on Natural Resources
Washington, DC 20515

ROB BISHOP OF UTAH
RANKING REPUBLICAN

PARISH BRADEN
REPUBLICAN STAFF DIRECTOR

RECEIVED
SEP 10 2019
Mid-Atlantic Fishery
Management Council

September 6, 2019

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

Dr. Moore:

I am writing to request the Council's general analysis and feedback on H.R. 2236, *"The Forage Fish Conservation Act."* I would like to receive the Mid-Atlantic Council's analysis of the need for further management and conservation of forage fish, along with the feasibility to develop management plans that meet requirements outlined in this legislation. As Congress evaluates this legislation, it would be helpful to receive your assessment on how this legislation would alter management plans and affect communities in your region.

Respectfully,

Rob Bishop
Republican Leader
Committee on Natural Resources

I

116TH CONGRESS
1ST SESSION

H. R. 2236

To improve the management of forage fish.

IN THE HOUSE OF REPRESENTATIVES

APRIL 10, 2019

Mrs. DINGELL (for herself, Mr. MAST, Mr. CARTWRIGHT, Mr. LONG, Mr. UPTON, and Mr. HUFFMAN) introduced the following bill; which was referred to the Committee on Natural Resources

A BILL

To improve the management of forage fish.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ‘‘Forage Fish Conservation Act’’.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

SEC. 2. REFERENCES TO THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT.

Except as otherwise expressly provided, wherever in this Act an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.).

SEC. 3. FINDINGS.

Section 2(a) (16 U.S.C. 1801(a)) is amended by adding at the end the following:

"(13) Forage fish are generally small to intermediate-sized species, occurring in schools or dense aggregations, and function as a main pathway for energy to flow from phyto- and zooplankton to higher trophic level predators, such as tuna, Alaska pollock, and other wildlife, in marine ecosystems. While most species function as prey of others at some life stage, especially when small and young, forage fish maintain this important trophic role throughout their life. Further, fluctuations in their populations can result in significant changes in marine communities and ecosystems. Therefore, particular attention to management of forage fish species, and addressing their unique role in marine ecosystems, is critical to maintaining ecosystem function and sustainable fisheries.''.

SEC. 4. DEFINITIONS.

Section 3 (16 U.S.C. 1802) is amended—

(1) by redesignating the second paragraph (33) (relating to waters of a foreign nation) as paragraph (53);

(2) by redesignating paragraphs (28) through (50) as paragraphs (30) through (52), respectively;

(3) by redesignating paragraphs (19) through (27) as paragraphs (20) through (28), respectively;

(4) by inserting after paragraph (18) the following:

``(19) The term 'forage fish' means—

``(A) any fish that, throughout its life cycle—

``(i) is at a low trophic level;

``(ii) contributes significantly to the diets of other fish, marine mammals or birds; and

``(iii) serves as a conduit for energy transfer to species at a higher trophic level; or

"(B) any other fish specified as a forage fish for purposes of this paragraph in a fishery management plan or amendment that is transmitted by a Council and approved by the Secretary in accordance with section 304(a).";

(5) by inserting after paragraph (28), as redesignated by paragraph (3), the following:

"(29) The term 'low trophic level' means a position in the marine food web in which the fish generally consume plankton."; and

(6) in paragraph (35), as redesignated by paragraph (2)—

(A) in subparagraph (B), by striking "and";

(B) in subparagraph (C), by striking the period and inserting "; and"; and

(C) by adding at the end the following:

"(D) in the case of a forage fish, is reduced, pursuant to subparagraph (B), to provide for the diet needs of fish species and other marine wildlife, such as marine mammals and birds, for which forage fish is a significant part of their diet.".

SEC. 5. SCIENTIFIC ADVICE.

Section 302(g)(1)(B) (16 U.S.C. 1852(g)(1)(B)) is amended to read as follows:

"(B) Each scientific and statistical committee shall provide its Council ongoing scientific advice for fishery management decisions, including recommendations for—

"(i) acceptable biological catch;

"(ii) preventing overfishing;

"(iii) maximum sustainable yield;

"(iv) achieving rebuilding targets;

"(v) maintaining a sufficient abundance, diversity, and localized distribution of forage fish populations to support their role in marine ecosystems; and

"(vi) reports on stock status and health, bycatch, habitat status, social and economic impacts of management measures, and sustainability of fishing practices.".

SEC. 6. COUNCIL FUNCTIONS.

(a) RESEARCH PRIORITIES.—Section 302(h)(7) (16 U.S.C. 1852(h)(7)) is amended, in the matter preceding subparagraph (A), by inserting "forage fish populations and distribution," after "habitats,".

(b) UNMANAGED FORAGE FISH.—Section 302(h) (16 U.S.C. 1852(h)) is amended—

(1) in paragraph (8) by striking ‘‘; and’’ and inserting ‘‘;’’;

(2) by redesignating paragraph (9) as paragraph (10); and

(3) by inserting after paragraph (8) the following:

‘‘(9) develop a list of unmanaged forage fish occurring in the area under its authority and prohibit the development of any new directed forage fish fishery until the Council has—

‘‘(A) considered the best scientific information available and evaluated the potential impacts of forage fish harvest on existing fisheries, fishing communities, and the marine ecosystem;

‘‘(B) determined whether conservation and management of the forage fish fishery is needed;

‘‘(C) if a determination is made that conservation and management is needed, prepared and submitted to the Secretary a fishery management plan or amendment consistent with section 303; and

"(D) received final, approved regulations from the Secretary pursuant to section 304(b)(3); and".

(c) EFFECTIVE DATE.—The amendments made by subsections (a) and (b) shall take effect 2 years after the date of enactment of this Act.

SEC. 7. CONTENTS OF FISHERY MANAGEMENT PLANS.

(a) FORAGE FISH MANAGEMENT.—Section 303(a) (16 U.S.C. 1853(a)) is amended—

(1) in paragraph (14) by striking "and;" and inserting ";";

(2) in paragraph (15) by striking the period and inserting "; and"; and

(3) by adding at the end the following:

"(16) when setting annual catch limits for forage fish fisheries, assess, specify, and reduce such limits by the diet needs of fish species and other marine wildlife, such as marine mammals and birds, for which forage fish is a significant part of their diet.".

(b) EFFECTIVE DATE.—The amendments made by subsection (a) shall take effect 5 years after the date of enactment of this Act.

SEC. 8. ACTION BY THE SECRETARY.

Section 304 (16 U.S.C. 1854) is amended—

(1) by redesignating the second subsection (i) (relating to international overfishing) as subsection (j); and

(2) by adding at the end the following:

"(k) FORAGE FISH MANAGEMENT GUIDELINES.—

"(1) IN GENERAL.—Not later than 18 months after the date of enactment of the Forage Fish Conservation Act, the Secretary shall establish by regulation guidelines to assist the Councils in implementing sections 3(19), 302(h)(9), and 303(a)(16).

"(2) WORKSHOPS.—In developing the guidelines under paragraph (1), the Secretary shall conduct workshops with Councils and other scientific, fisheries, and conservation interests.".

SEC. 9. RIVER HERRING AND SHAD.

(a) DEFINITIONS.—In this section—

(1) RIVER HERRING.—The term "river herring" means blueback herring (Alosa aestivalis) and alewife (Alosa pseudoharengus).

(2) SHAD.—The term "shad" means American shad (Alosa sapidissima) and hickory shad (Alosa mediocris).

(b) AMENDMENTS OF PLANS.—Not later than 180 days after the date of enactment of this Act, the Secretary of Commerce shall—

(1) amend the fishery management plans for the Atlantic Herring and Atlantic Mackerel, Squid, and Butterfish fisheries for the New England and Mid-Atlantic Regions to add shad and river herring as managed stocks in such plans consistent with section 302(h)(1) of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1852(h)(1));

(2) initiate additional fishery management plan amendments to be completed in not more than 1 year from the date of the addition of the species identified in paragraph (1) in order to develop and implement all required conservation and management measures for such stocks consistent with the Magnuson-Stevens Fisheries Conservation and Management Act (16 U.S.C. 1801 et seq.), and all other applicable law; and

(3) notwithstanding any other law, rule, or fishery management plan provision, including conservation and management measures under section 303(a)(11) of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1853(a)(11)), reallocate existing resources to provide, for not less than 60 percent of all relevant fishing trips, not fewer than one at-sea observer or an

on-board electronic or video means of producing equivalent at-sea monitoring information, for any vessel using mid-water trawl or paired mid-water trawl fishing gear in the Atlantic herring and Atlantic mackerel fisheries.

SEC. 10. RULE OF CONSTRUCTION.

Nothing in this Act shall be construed as—

(1) extending or diminishing the jurisdiction or authority of any State within its boundaries; or

(2) affecting—

(A) section 306 of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1856); or

(B) the Atlantic Coastal Fisheries Cooperative Management Act (16 U.S.C. 5107 et seq.).

○

New or Recently Updated Web Pages

http://www.mafmc.org/council-policies

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Council Policies

Guiding Documents

- Statement of Organization, Practices, and Procedures (revised June 2017)
- 2014-2018 Strategic Plan (note: the 2020-2024 Strategic Plan is currently under development)

Council Process Documents

- MAFMC - Original FMP and Major Amendment Work and Timeline
- NMFS Policy Guidelines for the Use of Emergency Rules
- MAFMC Framework Action Development - Process Overview (5/6/14)
- Regional Operating Agreement Between MAFMC, NOAA Fisheries GARFO, NOAA Fisheries NEFSC, and NOAA Office of Law Enforcement (7/22/13)

Issue-Specific Council Policies

- Ecosystem Approach to Fisheries Management Guidance Document (revised 2/8/19)
- Council Policies on Impacts of Fishing on Fish Habitat (8/12/16)
- Council Policies on Non-Fishing Activities that Impact Fish Habitat (2/12/16)
- MAFMC Allocation Review Policy (8/19/19)

Administrative Policies and Informational Documents

- Webinar Policy (8/17/17)
- Fishery Management Action Teams (8/2/17)
- Advisory Panel Overview (8/22/18)
- Travel Guidelines

http://www.mafmc.org/correspondence

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Correspondence

This page includes links to recent letters sent from the Mid-Atlantic Fishery Management Council.

2019

January

- Letter to SCS Global Services: Marine Stewardship Council *Illex* Certification (1/23/19)
- Letter to GARFO: eVTR FMAT Request (1/28/19)
- Letter to NEFMC: eVTR FMAT Request (1/28/19)
- Letter to NEFSC: eVTR FMAT Request (1/28/19)

February

- Letter to GARFO: Participation on *Illex* Workgroup (2/11/19)
- Letter to NEFSC: Participation on *Illex* Workgroup (2/11/19)
- Letter to GARFO: Exempted Fishing Permit application from Coonamesset Farm Foundation (2/19/19)

March

- SSC Appointment Letters: Anderson, Boreman, Frisk, Gabriel, Gaichas, Holliday, Houde, Jensen, Jiao, Jones, Latour, Miller, Rago, Rothschild, Secor, Wilberg (3/12/19)
- Letter to Doug Lipton: Service on SSC (3/13/19)
- Letter to GARFO: Exempted Fishing Permit application from Coonamesset Farm Foundation (3/18/19)
- Letter to Katie Almeida In Support of Project Entitled "Piloting a Low-Bycatch Commercial Squid Jig Fishery in Southern New England" (3/25/19)

http://www.mafmc.org/nrha

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

UPCOMING EVENTS

List View | Calendar View

October 2019 Council Meeting
Mon, Oct 7, 2019, 9:00 AM – Thu, Oct 10, 2019, 1:00 PM
Durham Convention Center (map)

Northeast Regional Marine Fish Habitat Assessment - Offshore Team Meeting
Wednesday, October 9, 2019
9:30 AM – 5:00 PM
Fairfield Inn & Suites New Bedford (West Chop Room) (map)

NEFMC - December 2019 Council Meeting
Tue, Dec 3, 2019, 9:00 AM –

SIGN UP FOR EMAIL UPDATES

QUICK LINKS
Council Meetings
Travel Guidelines
SSC Meetings
Status of the Stocks
Statement of Organization Practices and Procedures (SOPP), June 2017
Public Comment Deadlines
Website Overview
Offshore Wind Notices (NEW!)
2019 Stock Assessment Information

Northeast Regional Marine Fish Habitat Assessment

The Northeast Regional Marine Fish Habitat Assessment (NRHA) is a collaborative effort to describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast. The project aims to align habitat science goals and priorities with human and financial resources to develop habitat science products that support an assessment. Work associated with the NRHA is expected to occur over a three-year time period from July 2019 through July 2022.

The project is being led by a Steering Committee composed of leadership from the major habitat conservation, restoration, and science organizations in the region.

Core Actions

Four core actions have been identified to support the habitat assessment:

1. **Abundance and trends in habitat types in the inshore area.** This action will map the location and extent of habitat types utilized by the focus species and quantify the areal coverage, status and trends of these habitats. It will also compile metrics that may inform an assessment of habitat quality.
2. **Habitat vulnerability.** This action will involve Council and Commission staff coordination with, and participation in, the NOAA Habitat Climate Vulnerability Assessment (HCVA). That assessment will use habitat experts to examine fish habitat vulnerability to climate and non-climate stressors.
3. **Spatial descriptions of species habitat use in the offshore area.** This action will use model-based and empirical approaches to identify, predict, and map habitat use for each of the focus species and track and quantify changes in habitat use over time (e.g. seasonal, annual, and future predicted use).
4. **Habitat data visualization and decision support tool.** Habitat information will be incorporated into a publicly accessible decision support tool, making this information available to partners to visualize habitat location, extent, and use throughout the region, and provide access to relevant data and habitat metrics developed by the assessment.

Please see the workplan linked in the "Documents" section for additional information about key outcomes and timelines for each of these actions.

Documents

- Northeast Regional Marine Fish Habitat Assessment Work Plan as of 6/17/19

Meetings

Northeast Regional Marine Fish Habitat Assessment - Offshore Team Meeting
Oct 9, 2019 · Fairfield Inn & Suites New Bedford (West Chop Room)

Northeast Regional Marine Fish Habitat Assessment - Inshore Team Meeting
Sep 24, 2019 · University of Connecticut Avery Point

Steering Committee Member Organizations

- Mid-Atlantic Fishery Management Council (Chair)
- Atlantic States Marine Fisheries Commission
- Atlantic Coast Fish Habitat Partnership
- Duke University
- Monmouth University
- National Fish Habitat Partnership
- New England Fishery Management Council
- NOAA Fisheries Offices of Habitat Conservation (Headquarters and Region)
- NOAA Fisheries Offices of Science and Technology (Ecosystems and Monitoring)
- NOAA Northeast Fisheries Science Center
- NOAA NCCOS Marine Spatial Ecology Division
- The Nature Conservancy

Contacts

For more information, please contact the action leads:

- **Jessica Coakley, MAFMC** - overall project coordinator, inshore co-lead (jcoakley@mafmc.org, 302-526-5252)
- **Michelle Bachman, NEFMC** - inshore co-lead (mbachman@nefmc.org, 978-465-0492)
- **Laurel Smith, NMFS NEFSC** - offshore lead (laurel.smith@noaa.gov, 508-495-2278)

http://www.mafmc.org/offshore-wind-notices

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9:30 AM – 5:00 PM
Fairfield Inn & Suites New Bedford (West Chop Room)
(map)

NEFMC - December 2019 Council Meeting

Offshore Wind Notices to Fishermen

The following list includes notices to fishermen from offshore wind developers in the New England and Mid-Atlantic region regarding offshore surveys, buoy installations, and other activities that may occur in areas used by fishermen. As developers provide the Mid-Atlantic or New England Fishery Management Councils with this information, it will be updated here. This list may not be comprehensive or consistently up to date. Please contact the fisheries liaisons for individual projects for the most up to date information. For information on individual projects, please see: https://www.boem.gov/Atlantic-Fishing-Industry-Communication-and-Engagement/. For general information about offshore wind in the Northeast region, please visit the Joint MAFMC/NEFMC Offshore Wind Page.

Southern New England/New York Bight

- Vineyard Wind geological survey: May - August 2019 (5/22/19)
- Equinor Wind survey and buoy update (6/24/19)
- Bay State Wind and Revolution Wind survey activity (7/8/19)
- Vineyard Wind geologic survey: July 9 -19, 2019 (7/15/19)
- Equinor Wind survey and buoy update (7/16/19)
- Bay State Wind buoy decommissioning activity (7/22/19)
- Bay State Wind survey activity (7/25/19)
- Revolution Wind survey activity (7/29/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (7/30/19)
- Revolution Wind survey activity (8/2/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/5/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/8/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/12/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/14/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/16/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/19/19)
- Vineyard Wind lease area - lobster ventless trap survey (8/23/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/26/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (8/28/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (9/3/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (9/18/19)
- Vineyard Wind survey activity (9/19/19)
- Bay State Wind, Revolution Wind, and Sunrise Wind survey activity (9/26/19)

Mid-Atlantic Bight

- Ocean Wind survey activity (7/19/19)
- Ocean Wind survey activity (7/22/19)
- Skipjack Wind Farm survey activity (8/6/19)
- Ocean Wind survey activity (8/8/19)
- Ocean Wind survey activity (8/12/19)
- Ocean Wind survey activity (8/13/19)
- Ocean Wind survey activity (8/19/19)
- Ocean Wind survey activity (8/26/19)
- Ocean Wind survey activity (8/28/19)
- Ocean Wind survey activity (9/3/19)
- Ocean Wind and Skipjack Wind survey activity (9/9/19)
- Ocean Wind and Skipjack Wind survey activity (9/16/19)
- Ocean Wind and Skipjack Wind survey activity (9/18/19)
- Ocean Wind and Skipjack Wind survey activity (9/27/19)

South Atlantic Bight

- Avangrid Renewables survey notice for Kitty Hawk Wind Lease Area: June - October 2019 http://www.mafmc.org/actions/commercial-evtr-framework

UPCOMING EVENTS

List View | Calendar View

October 2019 Council Meeting
Mon, Oct 7, 2019, 9:00 AM – Thu, Oct 10, 2019, 1:00 PM
Durham Convention Center (map)

Northeast Regional Marine Fish Habitat Assessment - Offshore Team Meeting
Wednesday, October 9, 2019
9:30 AM – 5:00 PM
Fairfield Inn & Suites New Bedford (West Chop Room) (map)

NEFMC - December 2019 Council Meeting

SIGN UP FOR EMAIL UPDATES

QUICK LINKS

- Council Meetings
- Travel Guidelines
- SSC Meetings
- Status of the Stocks
- Statement of Organization Practices and Procedures (SOPP), June 2017
- Public Comment Deadlines
- Website Overview
- Offshore Wind Notices (NEW!)
- 2019 Stock Assessment Information

COUNCIL ACTIONS

Commercial Electronic Vessel Trip Report (eVTR) Framework

Overview

Commercial fishing vessels with federal permits for MAFMC and NEFMC-managed species are required to submit Vessel Trip Reports (VTRs) documenting all fishing activity and catches. Electronic Vessel Trip Reports (eVTRs), which allow direct entry of data by the vessel operator using an electronic device, have been available as an option for all Northeast Region federally permitted fisheries since 2013. The MAFMC and NEFMC are considering requiring commercial vessels with federal permits for species managed by either council to submit their VTRs electronically. This action is intended to change the submission method and would not modify existing requirements regarding data types being collected. This action may also change the eVTR submission deadline depending on the alternative chosen. The goal of the action is to increase the timeliness and accuracy of fisheries data submitted to NMFS.

Currently, there are several approved applications that can be used to submit VTRs electronically, including free options. A list of all approved eVTR applications and contact information for each system can be found here: https://www.greateratlantic.fisheries.noaa.gov/aps/evtr/electronic/index.html.

Contact

Karson Coutre, Fishery Management Specialist, kcoutre@mafmc.org, (302) 526-5259

Action Status

Framework Meeting 1 for the MAFMC occurred at the April 2019 Council meeting. After considering Advisory Panel and Fishery Management Action Team recommendations, the Council approved a range of alternatives, including a no action alternative, an alternative to require electronic submission of VTRs, and four alternatives that could change the VTR reporting deadline to 24 hours, 48 hours, 72 hours, or weekly. NMFS indicated that they would likely have an extended implementation deadline of up to a year after the final rule if the Council selects an alternative to require electronic reporting. The NEFMC received an update on this framework action including the MAFMC approved alternatives at their April Council meeting. At their June meeting, the NEFMC initiated a joint eVTR action with the MAFMC and chose to expand the framework to include all NEFMC-managed fisheries. The MAFMC and NEFMC are working together to develop action documents and outreach. The NEFMC will have framework meeting 1 at their September Council meeting. A draft timeline for joint action can be found here.

Sign up to receive email updates:

First Name | Last Name

Email*

Submit

Documents

- Draft Timeline for Joint Action, September 2019
- Frequently Asked Questions Related to Electronic Vessel Trip Reports in Commercial Fisheries (September 2019)
- Comparison of Systems Certified by NOAA to Submit Electronic Vessel Trip Reports, August 2019
- Framework Discussion Document, updated July 2019
- Action Plan (As of 3/27/19)
- Framework Meeting 1 Discussion Document (April 2019)
- FMAT Meeting 1 Summary (March 2019)
- Joint Advisory Panel Meeting Summary (March 2019)

New England Fishery Management Council Meeting Agenda
Monday - Thursday, September 23-26, 2019
Beauport Hotel, 55 Commercial Street, Gloucester, MA 01930
tel: (978) 282-0008 | https://www.beauporthotel.com

Sending comments? Written comments must be received at the NEFMC office no later than 8 a.m., Thursday, September 19, 2019 to be considered at this meeting. Please address comments to Council Chairman Dr. John Quinn or Executive Director Tom Nies at: NEFMC, 50 Water St., Mill 2, Newburyport, MA 01950. Email submissions should be sent to comments@nefmc.org.

Monday, September 23, 2019

1:30 p.m. **Introductions and Announcements** (Chairman Dr. John Quinn)

1:35 **Swearing-In of Reappointed Council Members** (Sarah Heil, Assistant Regional Administrator for Sustainable Fisheries)

1:45 **Election of 2019-2020 Officers**

2:05 **Reports on Recent Activities**
Council Chairman, 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, Atlantic States Marine Fisheries Commission (ASMFC), U.S. Coast Guard, NOAA Enforcement, Stellwagen Bank National Marine Sanctuary

3:30 **Atlantic Herring Committee Report** (Peter Kendall)
Georges Bank Spawning: presentation on draft discussion document, possible Council action on next steps; Management Strategy Evaluation (MSE): update on debrief of MSE process used for acceptable biological catch (ABC) control rule in Amendment 8 to the Atlantic Herring Fishery Management Plan (FMP)

4:45 **Alewife/Blueback Herring Endangered Species Act (ESA) Listing Decision** (Jean Higgins, GARFO)
Presentation on NOAA Fisheries "not warranted" decision on proposed river herring ESA listing

Tuesday, September 24, 2019

8:30 a.m. **Commercial Electronic Vessel Trip Reports (eVTRs)** (Staff)
First NEFMC framework meeting for Commercial eVTR Omnibus Action being developed with the Mid-Atlantic Fishery Management Council for all species managed by both Councils

9:30 **Scientific and Statistical Committee (SSC) Report** (SSC Vice Chair Dr. Lisa Kerr)
Receive SSC's overfishing limit (OFL) and ABC recommendations for: Georges Bank yellowtail and the Northeast skate complex for fishing years 2020-2021; monkfish for 2020-2022, and deep-sea red crab for 2020-2023

10:30 **Monkfish Committee Report** (Libby Etrie)
Framework Adjustment 12: final action for 2020-2022 fishing year specifications and other measures

11:15 **Deep-Sea Red Crab Report** (Jessica Joyce, Tidal Bay Consulting)
Final action on 2020-2023 fishing year specifications

11:45 **Skate Committee Report** (Dr. Matt McKenzie)
Framework Adjustment 8: final action on 2020-2021 fishing year specifications and other measures; Annual Monitoring Report: receive fishing year 2018 report for the Northeast skate complex

12:30 p.m. **Lunch Break**

1:45 **Ecosystem-Based Fishery Management Committee Report (EBFM)** (John Pappalardo)
Georges Bank example Fishery Ecosystem Plan (eFEP): receive draft report, provide Council comment; EBFM Management Strategy Evaluation (MSE): receive steering committee progress report

Wednesday, September 25, 2019

8:30 a.m. **Northeast Trawl Advisory Panel** (Terry Alexander)
Report from June 21 and July 29, 2019 meetings

9:00 **Groundfish Catch Share Program Review** (Gulf of Maine Research Institute, MRAG Americas Inc.)
Receive overview from GMRI on nine port meetings conducted in July and August to collect public comment on Council's Groundfish Catch Share Program Review; receive update from MRAG Americas Inc. on technical working group's progress on catch share program review

9:45 **Enforcement Committee Report** (Mark Godfroy)
Receive enforcement recommendations on: Groundfish Codend Compliance Assistance Program (CAP); Groundfish Catch Share Program Review; groundfish sector management compliance improvement; and Groundfish Monitoring Amendment 23

10:45 **NMFS Draft Policy Directive on EM Video Retention Periods** (Brett Alger, NOAA Fisheries; Council staff)
Receive presentation on National Marine Fisheries Service's Draft Policy Directive on Electronic Monitoring (EM) Video Retention Periods; review and approve draft Council comments on guidance

11:15 **Transboundary Resources Assessment Committee (TRAC) Report** (Tara Trinko Lake, NEFSC)
Receive TRAC summary of 2018 assessment results for Eastern Georges Bank cod, Eastern Georges Bank haddock, and Georges Bank yellowtail flounder

11:45 **Transboundary Management Guidance Committee (TMGC) Report** (Terry Stockwell)
Review and approve TMGC recommendations for 2020 total allowable catches for shared U.S./Canada groundfish stocks on Georges Bank

12:00 p.m. **Groundfish Committee Report Part 1** (Terry Stockwell)
Framework Adjustment 59: receive progress report on action that includes (1) 2020 TACs for U.S./Canada stocks; (2) 2020-2022 specifications for 15 Northeast multispecies stocks, addressing commercial/recreational allocation if raised by MRIP data; and (3) removing allocation to Closed Area I Haddock Special Access Program

12:30 **Lunch Break**

1:45 **Open Period for Public Comment**
Opportunity for the public to provide brief comments on issues relevant to Council business but not listed on this agenda (please limit remarks to 3-5 minutes)

2:00 **Groundfish Committee Report Part 2** (Terry Stockwell)
Monitoring Amendment 23: approve Draft Environmental Impact Statement (DEIS) for public hearings; select preliminary preferred alternatives

Thursday, September 26, 2019

8:30 a.m. **2020 Council Priorities – Initial Discussion** (Executive Director Tom Nies)

9:45 **Scallop Committee Report** (Vincent Balzano)
Framework Adjustment 32: (1) receive progress report on action to set 2020 fishery specifications, 2021 defaults, and measures to mitigate impacts on Georges Bank yellowtail flounder, (2) receive overview of 2019 surveys; Amendment 21: progress report on action to address (1) Northern Gulf of Maine (NGOM) Management Area issues, (2) Limited Access General Category (LAGC) possession limit, and (3) IFQ transfers

12:00 p.m. **Small-Mesh Multispecies (Whiting) Report** (Terry Alexander)
Annual Monitoring Report: receive fishing year 2018 overview; Southern Red Hake: update on rebuilding measures

12:45 p.m. **Lunch Break**

1:45 **Habitat Committee Report** (Doug Grout)

Habitat-Related Work: update on development of additional policies related to non-fishing activities;
Offshore Energy: (1) update on ongoing activities in the Northeast Region; and (2) overview of updated joint New England/Mid-Atlantic Council offshore wind webpage

3:15 **Highly Migratory Species (HMS) Advisory Panel (AP), ICCAT Advisory Committee** (Rick Bellavance)
Receive report from September 4-5, 2019 HMS AP meeting and September 5-6 International Commission for the Conservation of Atlantic Tunas (ICCAT) Advisory Committee meeting

3:30 **Other Business**

Times listed next to the agenda items are estimates and are subject to change.
This meeting is physically accessible to people with disabilities. Council member financial disclosure forms are available for examination at the meeting.

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

Jessica McCawley, Chair | Mel Bell, Vice Chair
Gregg T. Waugh, Executive Director

AGENDA

September 16-20, 2019
Town & Country Inn; 2008 Savannah Hwy.
Charleston, SC 29407
Phone: Reservations: 800-334-6660 or 843-571-1000/Fax: 843-766-9444

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.

Written comments received by close of business the Monday before the meeting (9/9) will be compiled, posted to the website as part of the meeting materials, and included in the administrative record. Please use the online comment form at: https://safmc.wufoo.com/forms/z1dsx0do1dljzsr/ to ensure your comments are posted immediately to the Council's website and available for Council consideration.

Individuals that wish to submit comments after 9/9 must use the Council's online form at: https://safmc.wufoo.com/forms/z1dsx0do1dljzsr/ Comments will automatically be posted to the website and available for Council consideration. Comments received prior to noon on Thursday of the Council meeting (9/19) will be a part of the meeting administrative record. To view comments https://safmc.wufoo.com/reports/2019-sept-council-meeting-public-comment-report/

Monday, September 16, 2019 COMMITTEE MEETINGS
8:30 A.M. to 12:00 NOON Roberts Rules Training (TAB 1)

12:00 NOON to 1:30 P.M. Lunch

1:30 P.M. to 6:00 P.M. Personnel Committee/Council (CLOSED) (TAB 2)

1. Personnel Items
2. Executive Director Interviews

Tuesday, September 17, 2019 COMMITTEE MEETINGS
8:30 A.M. to 12:00 NOON Snapper Grouper Committee/Jessica McCawley (TAB 3)

1. Status of Commercial Catches versus Quotas for Species under ACLs – NMFS SERO
2. Status of Amendments under Formal Review – NMFS SERO
   a. Vision Blueprint Regulatory Amendment 27 (Commercial) – sent to NMFS 1/24/19
   b. Vision Blueprint Regulatory Amendment 26 (Recreational) – sent to NMFS 4/17/19
   c. Amendment 42 (Sea Turtle Release Gear and Framework Modifications) – sent to NMFS 4/24/19
   d. Regulatory Amendment 30 – sent to NMFS 8/__/19
3. SSC Report – Preliminary Results from August 19-21, 2019 SSC MRIP Workshop

Tuesday, September 17, 2019 COMMITTEE MEETINGS
8:30 A.M. to 12:00 NOON Snapper Grouper Committee Contd/Jessica McCawley (TAB 3)

4. Regulatory Amendment 29 (Best practices & Powerheads)
    a. Overview – Christina Wiegand
    b. Committee Action: Discussion of outreach and consideration for final approval – Jessica McCawley
5. Abbreviated Framework Amendment 3 (Blueline Tilefish)
    a. Overview – Roger Pugliese
    b. Committee Action: Action as needed - Jessica McCawley
6. Wreckfish ITQ Review
    a. Overview – Brian Cheuvront
    b. Committee Action: Review and consider recommending for formal review - Jessica McCawley

12:00 NOON to 1:30 P.M. Lunch

Tuesday, September 17, 2019 COMMITTEE MEETINGS
1:30 P.M. to 5:30 P.M. Snapper Grouper Committee Contd/Jessica McCawley (TAB 3)

7. Regulatory Amendment 33 (Red snapper seasons)
    a. Overview – Myra Brouwer
    b. Committee Action: Review public comment, select preferred alternatives, and provide guidance as needed – Jessica McCawley
8. Regulatory Amendment 34 (NC & SC SMZs)
    a. Overview – Myra Brouwer
    b. Committee Action: Review and consider recommending for public hearings – Jessica McCawley
9. Guidance on agenda items for SG AP
    a. Overview – Myra Brouwer
    b. Committee Action: Provide guidance on items to bring before the Snapper Grouper Advisory Panel - Jessica McCawley
10. Vision Blueprint/FMP Objectives – Guidance on 2021-2026 Vision Blueprint (scheduled for adoption in December 2020).
11. White paper on authorized gear and lionfish
    a. Overview – Rick DeVictor
    b. Committee Action: Action as needed - Jessica McCawley

Wednesday, September 18, 2019 COMMITTEE MEETINGS
8:00 A.M. – 8:30 A.M. Protected Resources Committee/Spud Woodward (TAB 4)

1. Council/NMFS Memo Of Understanding (MOU)
    a. Overview – Christina Wiegand
    b. Committee Action: Discuss and take action as necessary – Spud Woodward
2. Update on Biological Opinions (BiOps) for Dolphin Wahoo and HMS fisheries
    a. Overview – PR Staff TBD
    b. Committee Action: Discuss and take action as necessary – Spud Woodward
3. Updates on Other Protected Resources Issues
    a. Overview – PR Staff TBD
    b. Committee Action: Discuss and take action as necessary – Spud Woodward

Wednesday, September 18, 2019   COMMITTEE MEETINGS
8:30 A.M. to 12:00 NOON   Dolphin Wahoo Committee/Anna Beckwith (TAB 5)

1. Status of Commercial Catches versus Quotas – NMFS SERO
2. Dolphin Wahoo Advisory Panel Report – Ray Rosher
3. Dolphin Wahoo FMP Goals and Objectives
   a. Overview – John Hadley
   b. Committee Action: Review and provide guidance to staff – Anna Beckwith
4. Amendment 10 (Revise Dolphin and Wahoo Management Measures)
   a. Overview – John Hadley
   b. Committee Action: Review, provide guidance to staff, and consider approval for scoping – Anna Beckwith

12:00 NOON to 1:30 P.M.   Lunch

Wednesday, September 18, 2019   COMMITTEE MEETINGS
1:30 P.M. to 3:45 P.M.   Dolphin Wahoo Committee Contd/Anna Beckwith (TAB 5)

4. Amendment 10 (Revise Dolphin and Wahoo Management Measures) - continued
5. Amendment 12 (Bullet and Frigate Mackerel)
   a. Overview – John Hadley
   b. Committee Action: Review and provide guidance to staff – Anna Beckwith

Wednesday, September 18, 2019   COMMITTEE MEETINGS
3:45 P.M. to 4:00 P.M.   Executive Finance Committee/Jessica McCawley (TAB 6)

1. Ranking of Amendments for work schedule:
   a. Overview – Dr. Brian Cheuvront
   b. Committee Discussion and provide guidance to staff – Jessica McCawley

Wednesday, September 18, 2019   PUBLIC COMMENTS
4:00 P.M. Public comment will be accepted 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.

Approval for Formal Review:

1. Snapper Grouper Regulatory Amendment 29 (Best Practices and Powerheads)
2. Wreckfish ITQ Review

Approval for Scoping:

1. Coral 10/Shrimp 11/G Crab 10 (Access Areas/Transit Provisions/GC VMS)
2. Dolphin Wahoo Amendment 10 (Revise Dolphin and Wahoo Management Measures)

Approval for Public Hearings:

1. CMP Framework Amendment 8 (King mackerel trip limits, season two)
2. Snapper Grouper Regulatory Amendment 34 (NC & SC SMZs)

Other Items of Interest:

1. Red snapper

<u>Thursday, September 19, 2019</u>   <u>COMMITTEE MEETINGS</u>
8:30 A.M. – 10:00 A.M.   <u>Habitat Protection and Ecosystem-Based Management Committee/Steve Poland (TAB 7)</u>

1. Council Actions on Habitat and Ecosystems
    a. Overview – Roger Pugliese
    b. Review Spring Habitat Ecosystem Advisory Panel Report – Dr. Wilson Laney
    c. Committee Action: Action as needed – Steve Poland

10:00 A.M. – 12:00 Noon   <u>Joint Habitat Ecosystem, Shrimp, and Golden Crab Committee/Steve Poland, Chris Conklin & Mel Bell (TAB 8)</u>

1. Coral Amendment 10/Shrimp Amendment 11/Golden Crab Amendment 10 – Access areas/Transit provisions/GC VMS
    a. Overview – Dr. Brian Cheuvront
    b. Committee Action: Discuss, review, and consider approval for scoping – Steve Poland

12:00 NOON to 1:30 P.M.   Lunch

<u>Thursday, September 19, 2019</u>   <u>COMMITTEE MEETINGS</u>
1:30 P.M. – 3:30 P.M.   <u>Mackerel Cobia Committee/Doug Haymans (TAB 9)</u>

1. Status of Commercial Catches versus ACLs – Rick DeVictor, NMFS SERO
2. Status of Amendments under Formal Review – Rick DeVictor, NMFS SERO
    a. CMP Framework 6 (King mackerel trip limits, season one) – sent to NMFS 11/9/2018
    b. King mackerel emergency action – letter sent June 21, 2019
3. CMP Framework Amendment 8 (King mackerel commercial trip limits in the Atlantic southern zone during season two)
    a. Overview – Christina Wiegand
    b. Committee Action: Review analysis, select preferred alternative, consider approval for public hearings – Doug Haymans
4. Spanish Mackerel White Paper
    a. Overview – Christina Wiegand
    b. Committee Action: Discuss and take action as necessary – Doug Haymans
5. Port Meetings for King and Spanish Mackerel Fisheries
    a. Overview – Christina Wiegand
    b. Committee Action: Discuss and take action as necessary – Doug Haymans
6. Gulf Council Framework Action to modify federal for-hire trip limits
    a. Overview – Ryan Rindone, GMFMC Staff
    b. Committee Action: Discuss and take action as necessary – Doug Haymans
7. Mackerel Cobia Advisory Panel Agenda Items
    a. Overview – Christina Wiegand
    b. Committee Action: Provide guidance on items to bring forward to the Mackerel Cobia Advisory Panel

Thursday, September 19, 2019 COMMITTEE MEETINGS

3:30 P.M. – 5:00 P.M. Executive Finance Committee Contd/Jessica McCawley (TAB 6)

2. November 5-7, 2019 CCC Meeting
   a. Overview – Gregg Waugh
   b. Committee Action: Review and provide guidance to staff – Jessica McCawley – **ACTION**
3. Magnuson-Stevens Act Reauthorization
   a. Overview – Gregg Waugh
   b. Committee Action: Review and provide guidance to staff – Jessica McCawley – **ACTION**
4. Status of CY 2019 Budget
   a. Overview – Gregg Waugh/Kelly Klasnick
   b. Committee Action: Review and take action as necessary – Jessica McCawley – **ACTION**
5. Council Follow-up and Priorities & Tiering – Priorities for 2020
   a. Overview – Dr. Brian Cheuvront
   b. Committee Action: Review and provide guidance to staff – Jessica McCawley – **ACTION**

Friday, September 20, 2019 COUNCIL SESSION (TAB 10)

8:30 A.M. to 1:00 P.M.

[Legal Briefing on Litigation - Monica Smit-Brunello (**CLOSED SESSION**) if needed]

8:30 - 8:45 Call to Order and Introductions/Jessica McCawley, Chair
Adoption of Agenda/Jessica McCawley
Approval of Minutes/Jessica McCawley
Presentations/Jessica McCawley

- Law Enforcement Officer of the Year
- Council Staff

8:45 – 9:00 Council Staff Reports – **ACTION**

1. Executive Director's Report (**TAB 10, Attachment 1**) – Gregg Waugh
2. MyFishCount Update (**TAB 10, Attachment 2**)
   a. Final Report Years 1 & 2 – Dr. Chip Collier
   b. Outreach – BeBe Harrison
3. Citizen Science Update (**TAB 10, Attachment 3**) – Julia Byrd

9:00 – 9:30 NMFS SERO Presentations – **ACTION**

1. Status of Commercial Catches versus ACLs for species not already addressed (**TAB 10, Attachment 4**)
2. Southeast Geographic Strategic Plan (**TAB 10, Attachment 5**)
3. Data-related Reports (For-Hire Amendment status and SBRM)

9:30 – 9:45 NMFS SEFSC Presentation – **ACTION**

1. Status of Commercial Electronic Logbook Program (**TAB 10, Attachment 6**)
2. Status of MRIP Conversions (**TAB 10, Attachment 7**)

<u>Friday, September 20, 2019</u>   <u>COUNCIL SESSION (TAB 10)</u>
8:30 A.M. to 1:00 P.M.

9:45 – 9:50 Review Exempted Fishing Permits as Necessary – **ACTION**

9:50 – 10:15 <u>Snapper Grouper Committee Report/Jessica McCawley</u> (**TAB 3**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

10:15 – 10:30 BREAK

10:30 - 11:00 <u>Mackerel Cobia Committee Report/Doug Haymans</u> (**TAB 9**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

11:00 - 11:05 <u>Protected Resources Committee Report/Spud Woodward</u> (**TAB 4**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

11:05 - 11:30 <u>Dolphin Wahoo/Anna Beckwith</u> (**TAB 5**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

11:30 - 11:45 <u>Habitat Protection & Ecosystem-Based Management Committee Report/Steve Poland</u> (**TAB 7**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

11:45 - 12:00 <u>Joint Habitat, Shrimp, Golden Crab/Steve Poland</u> (**TAB 8**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

12:00 - 12:15 <u>Executive Finance Committee Report/Jessica McCawley</u> (**TAB 6**)
- Consider Committee recommendations and take action as appropriate – **ACTION**

12:15 - 12:20 <u>Personnel Committee/Council Report/Jessica McCawley</u> (**TAB 2**)

12:20 – 12:40 Agency and Liaison Reports (**TAB 10, Attachment 8**) **– ACTION**

12:40 – 12:55 Other Business **– ACTION**

12:55 – 1:00 Upcoming Meetings (**TAB 10, Attachment 9**) **– ACTION**

1:00 P.M. ADJOURN