April 29, 2020

To: Atlantic Menhaden Management Board
From: Ecological Reference Point Work Group and Atlantic Menhaden Technical Committee
RE: Exploration of Additional ERP Scenarios with the NWACS-MICE Tool

At the 2020 Winter Meeting, the Atlantic Menhaden Board accepted the Atlantic menhaden single species, ecological reference point (ERP), and peer review reports for management use. The ecological reference point assessment developed a tool, the NWACS-MICE model, which can be used in conjunction with the single-species assessment model to develop ERPs and harvest strategies that account for Atlantic menhaden's role as a forage fish.

The exact values and definition of the ERPs depend on ecosystem management objectives. The assessment provided example ERPs, which were defined as the level of Atlantic menhaden fishing mortality that would maintain Atlantic striped bass at its biomass target or threshold when Atlantic striped bass were fished at its fishing mortality (*F*) target. For these example ERPs, all other ERP focal species in the model (bluefish, weakfish, spiny dogfish, and Atlantic herring) were fished at status quo (i.e., 2017) levels. It is important to note in 2017, bluefish were overfished and overfishing was occurring and weakfish were depleted with total mortality above the threshold, while spiny dogfish biomass was above the biomass target and fishing mortality was lower than the *F* target. Atlantic herring were not overfished, and overfishing was not occurring in 2017; however, they were below their biomass target and projections indicated the stock could become overfished in 2018 – 2021.

The Atlantic Menhaden Board tasked the ERP Work Group (ERP WG) with conducting additional runs of the NWACS-MICE tool to explore the sensitivity of the ERPs to different assumptions about ecosystem conditions. For each set of assumptions, an ERP target and threshold were calculated using the same definition as the example ERPs:

> **ERP target:** the maximum *F* on Atlantic menhaden that sustains striped bass at their biomass target when striped bass are fished at their *F* target
>
> **ERP threshold:** the maximum *F* on Atlantic menhaden that keeps striped bass at their biomass threshold when striped bass are fished at their *F* target

The ERP WG explored ERPs under the following ecosystem scenarios, i.e., sets of assumptions about the other ERP focal species in the model:

1. All other species are fished at their 2017 status quo level (example ERPs, presented at the 2020 Winter Meeting).
2. All other species are fished at a level that allows them to reach their biomass target.
3. All other species are fished at a level that keeps them at their biomass threshold.

4. Atlantic herring and bluefish are fished at a rate that allows them to reach their biomass target, while spiny dogfish and weakfish are fished at 2017 status quo levels (2017 status quo *F* values for those species are below their *F* target values).

This analysis provides context for the example ERPs developed for the benchmark assessment and shows how the NWACS-MICE tool can be used to explore different ecosystem management objectives and scenarios. These scenarios help to frame ERP discussions within the bounds of existing management objectives for the ERP focal species.

Table 1. ERP Ecosystem Scenarios

ERP Scenario	Striped Bass	Bluefish	Weakfish	Spiny Dogfish	Atlantic herring
1. Example ERPs (2017 status quo)	F target	2017 status quo	2017 status quo	2017 status quo	2017 status quo
2. All at *B* target	F target	F target	F target	F target	F target
3. All at *B* threshold	F target	F threshold	F threshold	F threshold	F threshold
4. Bluefish & herring at *B* target	F target	F target	Status quo	Status quo	F target

Note that for the other ERP focal species, "F target" and "F threshold" are defined as the F rates within the NWACS-MICE model that let these species approximate their biomass targets and thresholds, respectively.

Results

The ERP target and threshold for each scenario are listed in Table 2 and the results of the specific scenarios are summarized in the sections below. To provide context for the reference point values, the Atlantic Menhaden Technical Committee (TC) conducted projections to calculate the probability of exceeding the ERP target and threshold in 2019 – 2021 for each scenario under the current (2019-2021) total allowable catch (TAC) of 216,000 mt (Table 2). Several important caveats will be described after this basic summary of scenario results.

Table 2: ERP targets and thresholds under different ecosystem scenarios, and the probability of exceeding the ERP values under the current TAC for 2019 - 2021

	Atlantic Menhaden Full *F* equivalent		Probability of exceeding ERP target			Probability of exceeding ERP threshold		
Scenario	**ERP target**	**ERP threshold**	2019	2020	2021	2019	2020	2021
1. Example ERPs	0.19	0.57	60%	71%	66%	0%	0%	0%
2. All at *B* target	0.36	*	0%	3%	6%	0%	0%	0%
3. All at *B* threshold	0.03	0.32	100%	99.5%	99.5 %	0%	13%	13%
4. Bluefish & herring at B target	0.35	*	0%	5%	7%	0%	0%	0%
	Target	**Threshold**	**Probability of exceeding single-species target**			**Probability of exceeding single-species threshold**		
Single species BRPs	0.31	0.86	0%	0%	17%	0%	0%	0%

*****: When Atlantic herring were at their biomass target and striped bass were fished at their *F* target, the ERP threshold was undefined, meaning none of the Atlantic menhaden *F* values explored pushed striped bass to their biomass threshold.

Scenario 1: Example ERPs

The example ERPs were presented at the 2020 Winter meeting. In this scenario, Atlantic striped bass were fished at its *F* target, while all other species were fished at the 2017 status quo level. The example ERP target and threshold were lower than the single-species target and threshold, but the *F* in 2017 on Atlantic menhaden was below both the example ERP target and threshold.

The current (2019-2021) TAC of 216,000 mt resulted in a 60-71% probability of exceeding the example ERP target, and a 0% chance of exceeding the example ERP threshold.

Scenario 2: All at biomass target

In Scenario 2, when all species were at their biomass targets, the ERP target was higher than the example ERP value (Scenario 1; Table 2). Rebuilding bluefish to their target biomass has the potential to have a negative impact on striped bass compared to the status quo scenario where bluefish are overfished. Bluefish compete with striped bass for Atlantic menhaden and other prey and are predators of juvenile striped bass. However, the negative impact of higher bluefish biomass was outweighed by the positive impact of rebuilding Atlantic herring to its biomass target (nearly double the 2017 biomass). Because there were more Atlantic herring available to striped bass as an alternate prey species, Atlantic menhaden could be fished at a higher *F* without causing striped bass to fall below its biomass target. The ERP threshold was undefined in this scenario because, as long as striped bass was fished at its *F* target and Atlantic herring biomass approached its biomass target, increasing *F* on Atlantic menhaden would not drive striped bass to its threshold over the range of *F* values explored (Figure 1).

The current (2019-2021) TAC of 216,000 mt resulted in a 0-6% chance of exceeding the ERP target in this scenario, and a 0% chance of exceeding the ERP threshold.

Scenario 3: All at biomass threshold

In Scenario 3, where all other species are fished to threshold biomass levels, the ERP target and threshold values were lower than in the example ERP values (Scenario 1; Table 2). When Atlantic herring are fished to their threshold biomass, the fishing pressure on Atlantic menhaden must be lower in order to leave enough prey in the water to keep striped bass at its biomass target and threshold.

The current (2019-2021) TAC of 216,000 mt resulted in a 100% probability of exceeding the ERP target in this scenario, but a 0-13% chance of exceeding the ERP threshold.

Scenario 4: Bluefish and Atlantic herring at target

Scenario 4, where Atlantic herring and bluefish are at their target biomass levels and weakfish and spiny dogfish are at their status quo levels, is almost identical to Scenario 2, the all-at-target scenario (Scenario 2; Table 1). They are so similar because the effect of the rebuilt Atlantic herring biomass on striped bass far outweighs the small effects of shifting weakfish and spiny dogfish biomass from the target to the 2017 status quo scenario. In this run, the ERP threshold is also undefined because increasing *F* on Atlantic menhaden would not drive striped bass to its threshold over the range of *F* values explored (Figure 1).

The current TAC resulted in a 0-7% chance of exceeding the ERP target in this scenario, and a 0% chance of exceeding the ERP threshold.

Surface plots

The ERP WG reproduced the rainbow surface plots for striped bass, bluefish, and weakfish for each of the additional scenarios (Figures 2-4). These plots show the effect of striped bass *F* and Atlantic menhaden *F* on striped bass biomass and on two of its competitor species. The biomass of both bluefish and weakfish was higher when *F* on striped bass was high and *F* on Atlantic menhaden was low – that is, when striped bass biomass is driven down by fishing and more Atlantic menhaden biomass is available for bluefish and weakfish. Bluefish biomass was lower when striped bass *F* was low and Atlantic menhaden *F* was high. In contrast, weakfish biomass declined as both Atlantic menhaden and striped bass *F* approached zero indicating that top down predation impacts from striped bass are stronger than the bottom-up effects of menhaden on weakfish. These effects were most noticeable at the extremes of striped bass and Atlantic menhaden *F*.

Uncertainties

The ERP WG and TC noted several sources of uncertainty in this analysis that need further exploration to better understand the sensitivity of the model and the uncertainty in the ERPs.

First, in these scenarios, species are fished at rates which allow them to approximate their threshold or target biomass values. However, the fishing rates applied in NWACS-MICE do not always correspond to the *F* targets and thresholds in the FMPs, in particular for bluefish and Atlantic herring. This is due to structural differences between the NWACS-MICE model and the single-species assessments, as well as differences in how reference points are defined under the different management systems (i.e., ASMFC vs. federally managed stocks). This mismatch between single-species reference points and an ecosystem model is not surprising, but it does mean that scenarios where species are fished at their single-species *F* targets could provide different ERP estimates and may not result in all species being at their biomass targets.

Second, the relationship between Atlantic herring and striped bass was very strong in these runs and was sensitive to the model estimates of how vulnerable Atlantic herring were as prey to striped bass. In the scenario where Atlantic herring were fully rebuilt, the model predicted that Atlantic herring would account for a much higher proportion of striped bass diets than is currently observed coastwide. Although Atlantic herring are an important component of striped bass diets in some regions and seasons, the model may be overestimating the importance of Atlantic herring on a coastwide, annual level. More work is needed to explore the parameterization of the striped bass-Atlantic herring relationship in the NWACS-MICE model to understand the sensitivity of the ERPs to this relationship. In addition, the scenarios examined here only looked at ecosystems where Atlantic herring were fully rebuilt or at its biomass threshold. More work should be done to explore the relationship under different, possibly more realistic Atlantic herring biomass levels given the uncertainty in its future recruitment.

Finally, weakfish was unable to rebuild under any of the *F* values explored here. This is consistent with the single-species assessment which indicated natural mortality has increased on weakfish and remains at high levels, keeping the stock below its biomass threshold. The cause of this increase in natural mortality is unclear, and may be related to environmental conditions, or predation by or competition with marine mammals or other species outside this menhaden-focused model. If natural mortality is reduced in the future and the stock is able to rebuild, the ERP targets and threshold values estimated here may be different.

Next Steps

Based on the results of this work, the ERP WG recommends the following additional analyses to be completed before the next Board meeting. These analyses will help the Board to better understand the sensitivity of the ERPs to different ecosystem assumptions and sources of uncertainty, as well as provide context for Board discussions around risk and ecosystem management objectives.

- Explore alternate Atlantic herring biomass scenarios given the uncertainty in future Atlantic herring recruitment

- Explore sensitivity to model parameterization of the Atlantic herring – Atlantic striped bass relationship
- Explore scenarios where other ERP focal species are fished at their single-species F reference points

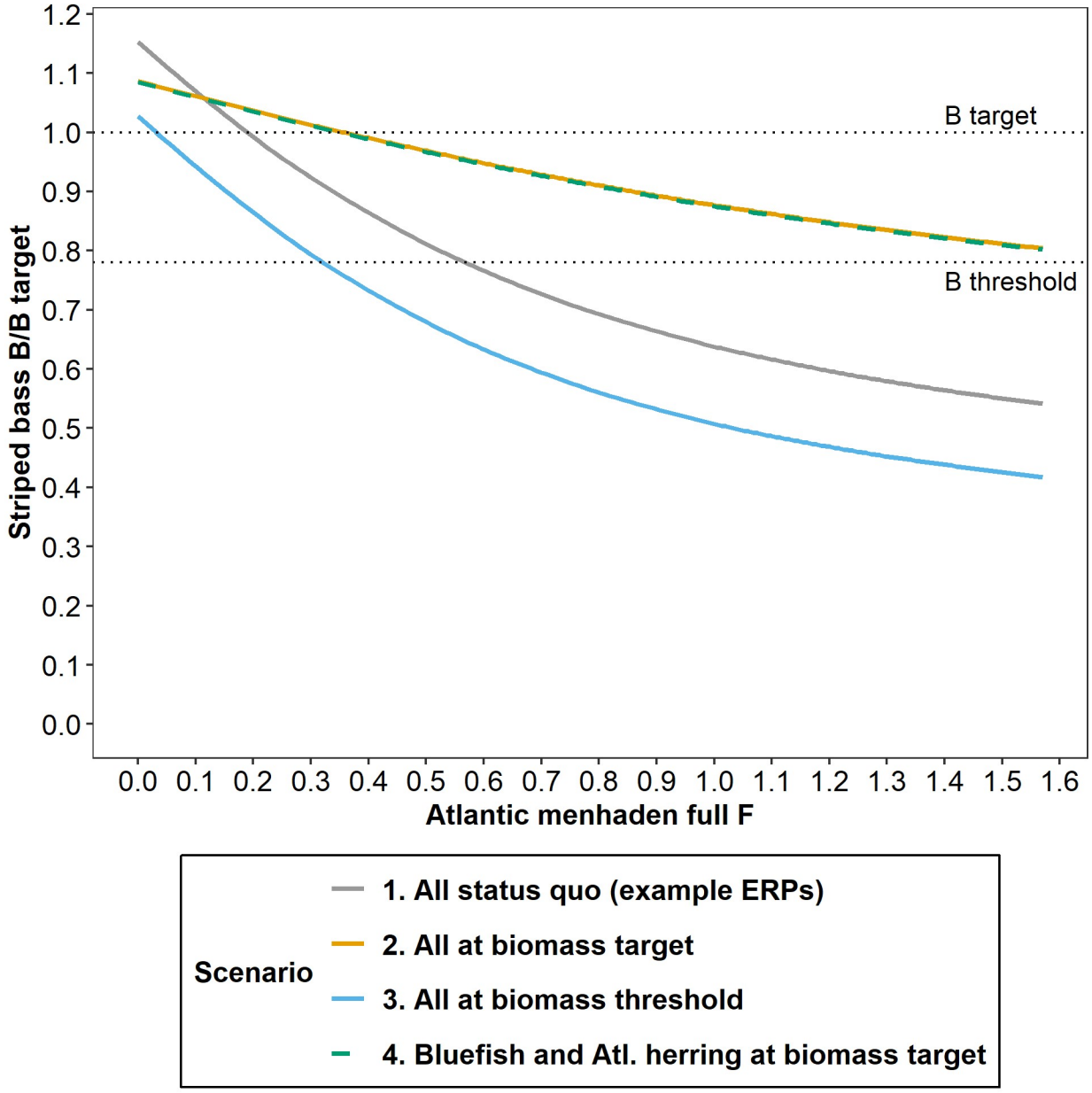

Figure 1: Striped bass biomass levels relative to their biomass target under different levels of Atlantic menhaden F for different ecosystem scenarios. Striped bass are fished at their *F* target in all scenarios.

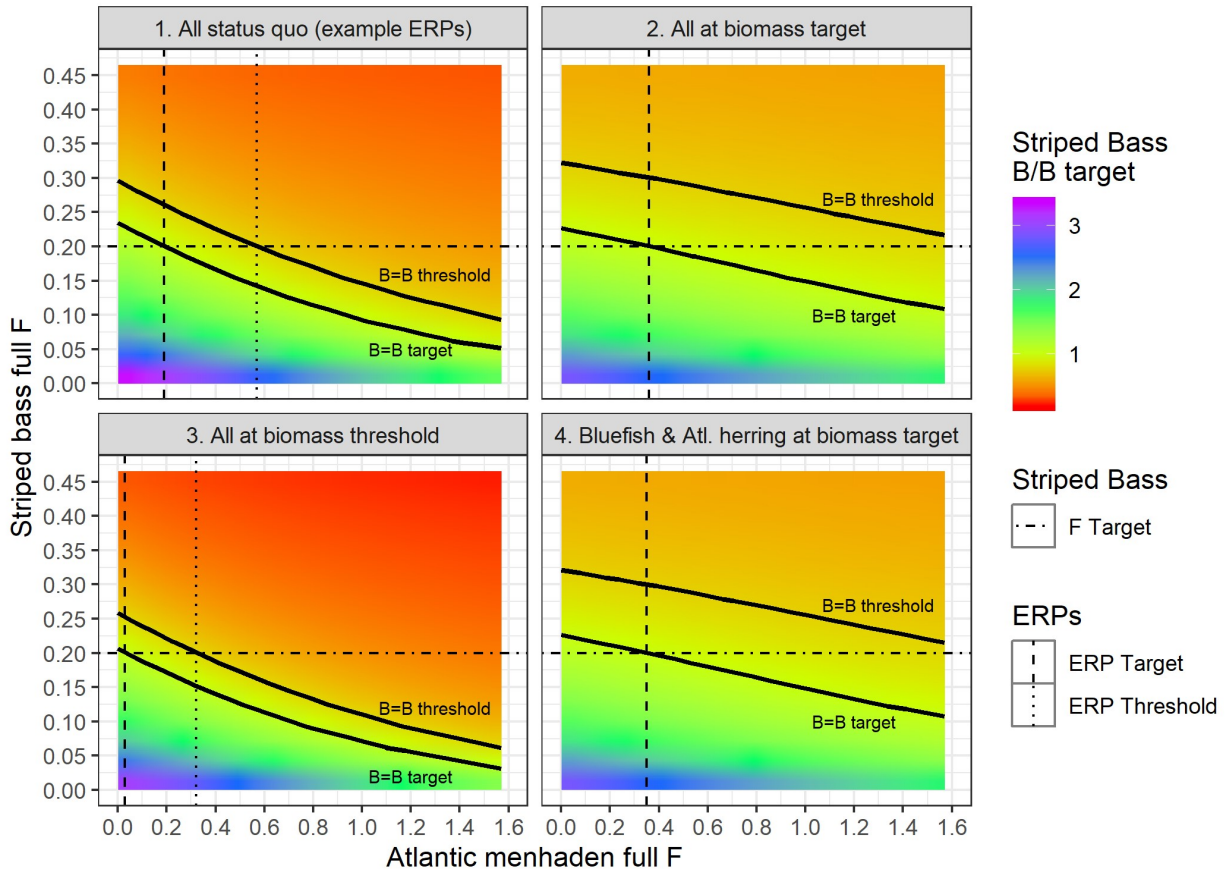

Figure 2. Striped bass surface plots showing the long-term equilibrium striped bass biomass relative to the biomass target under different combinations of striped bass *F* and Atlantic menhaden *F*. The solid black contour lines indicate combinations of striped bass *F* and Atlantic menhaden *F* where striped bass biomass will be equal to the biomass threshold or target. Each plot represents a different ecosystem scenario (Scenarios 1-4, Table 1).

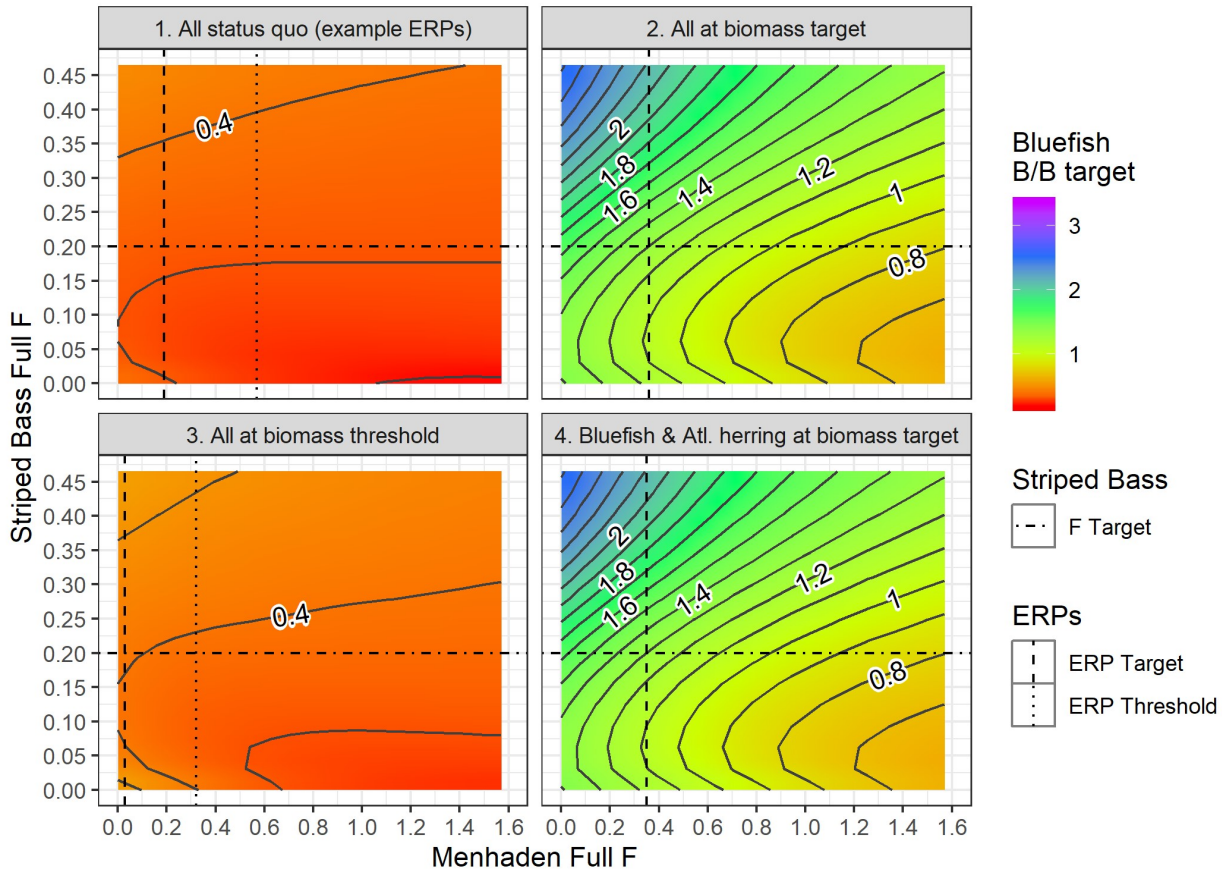

Figure 3. Bluefish surface plots showing the long-term equilibrium bluefish biomass relative to the biomass target under different combinations of striped bass F and Atlantic menhaden *F*. Each plot represents a different ecosystem scenario (Scenarios 1-4, Table 1).

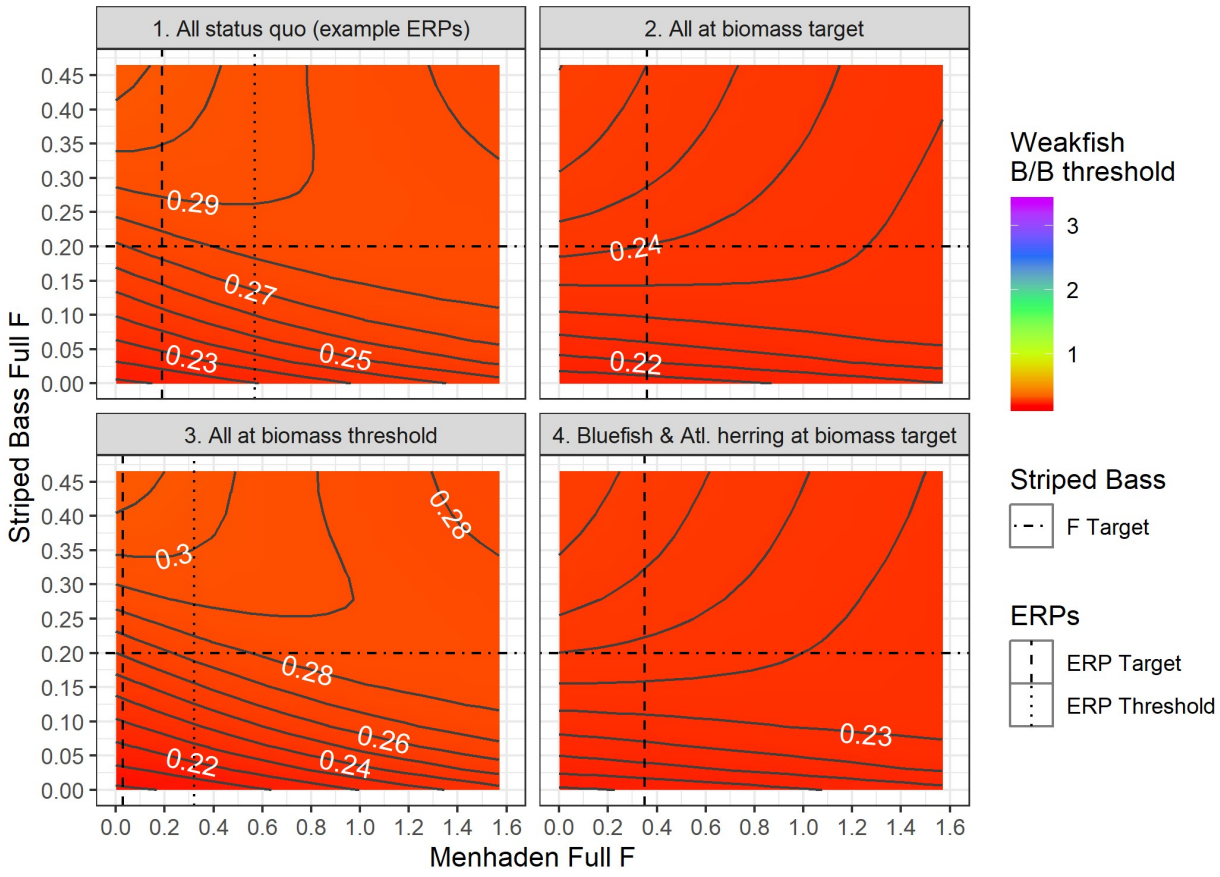

Figure 4. Weakfish surface plots showing the long-term equilibrium weakfish biomass relative to the biomass target under different combinations of striped bass *F* and Atlantic menhaden *F*. Each plot represents a different ecosystem scenario (Scenarios 1-4, Table 1).

From:	Duke Gosney
To:	Comments
Subject:	[External] Menhaden Public Comment
Date:	Monday, April 27, 2020 12:34:09 PM

Please distribute to the Atlantic Menhaden Management Board Meeting Webinar for public comment on May 5, 2020, 10:45 – 11:45 a.m.

Dear members of the Atlantic Menhaden Management Board,

My name is Garrison Duke Gosney. I live and work in the State of Delaware as an Air Force Officer but I am also a concerned Virginia resident having spent most of my life on the banks of the Potomac River in my hometown of Heathsville, Virginia enjoying the natural benefits of the Chesapeake Bay ecosystem. I care deeply for the resource at hand and support more strict regulation on the purse-seine reduction industry.

Menhaden are the sole keystone species of the Chesapeake Bay and the entire Atlantic seaboard. Their profound impact on the health of the ecosystem cannot be overstated. An unbridled population is essential for water quality, pollution control, erosion control, and the prosperity of every marine, wetland, and vegetative specie that live therein. Menhaden therefore should be analyzed not a single species but as the ecological kingpin of interrelated species. They should not be managed for the profitability and survivability of a single industry, but rather for the health and proliferation of the entire Atlantic marine ecosystem.

It is probably true that if conditions stay about the same, the reduction industry could go on for some time catching about the same number of menhaden each year due to ineffectively high harvest caps and increasingly productive technologies. However, wetlands are shrinking, waters are warming, pollution is increasing, algal blooms are proliferating, hypoxia is intensifying, and dead zones are expanding. From an ecological point of view, there is simply no downside to limiting or even banning the industrial slaughter of menhaden. If left untouched, menhaden could return to their immense historic population and be welcomed as a wonderful natural control mechanism for Man’s destructive tendencies.

I urge you to consider the vital importance and gravity of menhaden as a forage fish, because your management decisions will impact not only to the State of Virginia and the Chesapeake Bay, but to every tidal river, bay, and body of water that touches the Eastern United States. My family and I strongly support effective, long-term conservation of menhaden along the Atlantic coast and in the Chesapeake Bay.

The ASMFC should support a management option that ensures striped bass and other game fish have abundant forage, and that menhaden are allowed to fulfill their foundational role in the marine ecosystem, even if that means a substantial decrease or abolishment of industrialized reduction fishing. It is crucial for the marine ecosystem we depend on.

Sincerely,

Garrison Duke Gosney

Atlantic Coastal Cooperative Statistics Program
Coordinating Council

May 5, 2020

PROGRAM UPDATES

(Since October 2019)

1) ACCSP Staffing

a. Alex DiJohnson was selected and promoted to the Recreational Team Lead in November
b. Marisa Powell stared in January as Program Assistant
c. Sarah Hylton started in April as a Data Coordinator on the Recreational Team
d. Melissa Paine started part-time contract in April supporting the Recreational Technical Committee
e. Lindsey Aubert selected to fill Data Coordinator position on the Data Team (start date August 1)
f. Julie Defilippi Simpson is a candidate for American Fisheries Society 2nd Vice President

2) Budget / Funding

a. Final 2020 ACCSP budget approved with all projects funded (Maine Lobster Reporting partial funding) and reduced regional office administration fees
b. Historical ACCSP budget scrub completed, identifying $350k un-allocated to be spent by Feb 2021. ACCSP Leadership Team was re-constituted and approved staff suggestions for unfunded support to coastal initiatives (SAFIS Helpdesk, Data Warehouse changes to adapt to SAFIS Redesign, VESL API data submission to ACCSP for South Carolina For-Hire trips, respond to FISMA requirements).
c. ACCSP received 2020 Admin grant funds from NOAA
d. ACCSP 5 year grant on track for spend out/completion 28Feb2021
e. MRIP Cooperative Agreement: Completed 2015-2019, In Year 1 of 2019-2023
f. Developed initial state by state allocation of increased annual base funding ($900K/yr) with input from the ACCSP Leadership Team

3) Regional Coordination

a. FIS
    i. ACCSP staff participating in monthly FIS Project Management Team meetings
    ii. Supporting Ongoing Projects
        1. Support GARFO One Stop Reporting (meetings on hold due to travel restrictions). Develop the Technical Specifications of a system that will enable a single electronic vessel trip report (eVTR) to satisfy the individual reporting requirements of all the fishing management authorities along the East Coast.
        2. Supporting Quality Management – Provision of Commercial Landings for ASMFC Stock assessments (meetings on hold due to travel restrictions)

iii. Proposals for future projects
    1. Continued Development and Enhancement to the ACCSP Online Data Query Tool and the ACCSP Assignment Tracking Application. These enhancements are geared toward improving application design and improving data collection, sharing, and coordination.
    2. ACCSP Atlantic Coast Project Scoping for Implementation of Automated Data Auditing/Validation for Electronic Logbooks. This project will conduct a SIPOC workshop to identify and document partner inputs and outputs into SAFIS and determine partner electronic logbook audit and validation needs.

b. MRIP
    i. Regional Implementation Council (several conference calls)
        1. ACCSP and states input on Modern Fish Act Reports
    ii. Supporting GSMFC transition to APAIS tablet data collection (ongoing through 2020)

c. Council Meeting Participation
    i. SAFMC – December 2019 webinar, March 2020 in person
    ii. MAFMC – November 2019 commercial eVTR webinar presentation, December 2019 in person (electronic reporting)
    iii. NEFMC – December 2019, April 2020 webinars

4) ACCSP Project Highlights

a. Spring Data Load: Completed early on April 14, 2020 to support ongoing stock assessments. Special thanks to staff for coordination and Partners to provide data to maintain timeline.
    i. Included direct data feed from PRFC for first time

b. South East For Hire Integrated Electronic Reporting (SEFHIER):
    i. Biweekly coordination calls since October, adjusting to shifting requirements and timelines.
    ii. South Atlantic Rule Published in February for September 1 full on-water implementation.
    ACCSP supporting June 1 software ready date for outreach and early adopting participants. SAFIS eTRIPS includes features for single report to multiple regions for dual-permitted participants. SERO reviewing SAFIS software for certification.
    iii. Gulf of Mexico Rule in development. ACCSP implemented trip notifications including Hail-out, and vessel location data collection features to support requirements.

c. SAFIS Redesign
    i. Database design changes in development and test environments have been implemented.
    ii. SAFIS Management System has been updated to include a SWITCHBOARD feature. This provides partners with increased flexibility of turning on/off additional attributes for report components, species, gears, dispositions, offloads, and notifications.
    iii. eTRIPS mobile-v2 is in the final stage of development. It will include features required by the Southeast and HMS including:

1. Trip Notification – Hail Out,
2. Species attributes (including nbr of fish/tags for Tautog);
3. Multiple target species
4. Partner managed offload attributes

iv. eTRIPS/online is currently being redesigned to incorporate new data structures and switchboard capability.

d. Outreach
   i. Improved integration with ASMFC website and social media
   ii. Participating in MRIP Regional Communications Working Groups (NE and SA)
   iii. Updating functionality and document references in ACCSP website
   iv. Continued notifications of code changes, major system maintenance, etc to partners
e. MRIP
   i. Completed new state agreements for state conduct of MRIP components CY2020
   ii. Completed 2019 data delivery for APAIS (ME-GA) and FHTS (ME, NC, GA)
   iii. Completed 2020 Regional APAIS&FHTS trainings (South, Mid, North)
   iv. Began FHTS State conduct for all states Maine to Georgia
   v. Tracking data collection changes due to COVID-19
f. FISMA – Federal Information Security Management Act
   i. ACCSP completed response to initial Audit performed April 2019
   ii. Informed of updated process, requirements, and timeline shift to May 2020
   iii. Finished internal documentation in March 2020
   iv. Completed a second FISMA Compliance review April 30
   v. Updated Interconnect Security Agreements with six Federal systems
   vi. Submitted request for Authority to Connect / FISMA compliance May 1, 2020
g. Data Dissemination
   i. SEDAR(s), Stock Assessments, and Management
      1. Data Team staff have or are currently working on SEDAR stock assessments for Red Porgy, King Mackerel, Snowy Grouper, and Scamp.
      2. Data were provided for a number of ASMFC species FMP reviews, including but not limited to scup, summer flounder, striped bass, and tautog.
   ii. Custom Data Requests
      1. The Data Team has completed over 50 custom data requests during this period for partners and a number of projects, such as wind farms, and agencies, including DFO and NOAA Office of Coastal Management.
   iii. Posted MRIP estimates through ACCSP data warehouse queries
   iv. Online Data Warehouse usage for 2019 was recently analyzed. The following are high level statistics.
      1. The Public Data Warehouse had 758 unique sessions in 2019.
      2. The Login Data Warehouse had 3,609 unique sessions by 170 users in 2019.
h. ACCSP Governance Transition Survey
   i. Initiated follow up from 2017 integration with ASMFC. Postponed until next Coordinating Council Meeting.

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

TO: **Atlantic Striped Bass Management Board**

FROM: **Max Appelman, FMP Coordinator**

DATE: **April 28, 2020**

SUBJECT: **Next Steps for Management**

Prior to the change in the ASMFC's Spring Meeting from an in-person meeting to a webinar due to the impacts of COVID-19, the Atlantic Striped Bass Board (Board) was to consider two postponed motions. These motions consider (1) accountability measures for Addendum VI (i.e., if a state does not hit its predicted target reduction in 2020) and (2) initiating an Amendment to revisit and address several management issues including fishery goals and objectives, reference points, management triggers, stock rebuilding, area-specific management, and commercial allocation. Additionally, during Addendum VI deliberation in February, the Board also expressed intent to revisit the conservation equivalency provision and to pursue accountability measures for recreational striped bass fisheries in the future. Delaying discussion and action on these motions would not have an impact on implementation of possible actions, therefore leadership decided to further postpone these motions until the August meeting.

Leadership has recommended the Board form a work group of Board members to further explore these, and any other management issues identified by the Board, and to develop recommendations for Board consideration. This would allow work to continue on these important issues without excluding any ideas and to allow for transparency in addressing ongoing management issues to the extent practical during these challenging times. In August, the Board will review recommendations from the work group and discuss the postponed motions.

With implementation of Addendum VI, the Board took swift action to address overfishing status as soon as possible, and begin stock rebuilding. The following Technical Committee report reviews the status of 2020 state regulations, and the predicted total removals in 2020 based on these measures as tasked by the Board.

Impact of Conservation Equivalency Measures on Predicted Removals of Striped Bass in 2020

Report from the Atlantic Striped Bass Technical Committee to the Atlantic Striped Bass Board

April 28, 2020

In order to reduce fishing mortality (*F*) on Atlantic striped bass to the *F* target in 2020, the Atlantic Striped Bass Management Board implemented Addendum VI to the Atlantic Striped Bass Fishery Management Plan (FMP). The Addendum changed commercial and recreational measures in order to reduce total removals of striped bass by 18% from 2017. This 18% reduction from 2017 removals was projected to have a 50% chance of reducing *F* in 2020 to the *F* target or lower. Several states applied to use conservation equivalency (CE) to implement different measures, as permitted under the FMP. States that applied for CE had to show their measures would result in an 18% or greater reduction in total removals at the state level, relative to 2017.

However, the predicted 18% reduction in total removals was calculated assuming all states would implement consistent measures for the ocean and Chesapeake Bay. With different measures implemented in different states, the total overall predicted reduction would likely differ from the 18% originally calculated for the coastwide measure.

Therefore, the Board tasked the Striped Bass Technical Committee (TC) with calculating the predicted percent reduction in 2020 based on final 2020 state measures, including CE measures.

The TC calculated the measures implemented in 2020 (Table 1 and 2) would, on paper, result in a 15% reduction, compared to the 18% reduction calculated for consistent coastwide measures. The probability that *F* in 2020 will be at or below the *F* target was projected to be 42%, compared to 50% for the consistent coastwide measures. The 95% confidence intervals of the updated projected 2020 F did include the *F* target, as did the previous projections for consistent coastwide removals. The updated projections also included preliminary recreational removals for 2019, which were lower than the 3-year average of removals used in the original projections, as well as updated data for 2018. Overall, this analysis showed that the combination of Addendum VI and approved CE measures implemented in 2020 would result in a slightly lower overall predicted reduction in total removals, and thus a slightly lower chance of achieving the *F* target in 2020 than predicted for the consistent coastwide measures. Overall, however, the implementation of CE measures did not significantly undermine the Board's efforts to end overfishing and reduce *F* to the *F* target in 2020.

However, the TC stresses that these calculations are done with the assumption that fishing effort and fish availability will be similar to 2016-2017. Removals in 2018 and 2019 were significantly lower than 2017, even under the same regulations, which is always a source of uncertainty in recreational bag and size limit analyses. More importantly, the impact of COVID-19 on total removals in 2020 cannot be predicted.

Table 1. Recreational measures for 2020 by state and region.

Mode/Region	Size Limit	Bag Limit	Open Season	Other
Maine				
All	28" to < 35"	1	All Year	
New Hampshire				
All	28" to < 35"	1	All Year	
Massachusetts				
All	28" to < 35"	1	All Year	
Rhode Island				
All	28" to < 35"	1	All Year	
Connecticut				
All	28" to < 35"	1	All Year	
New York				
New York - Ocean				
All	28" to <= 35"	1	4.15 - 12.15	% reduction accounts for HR/DR removals
New York - Hudson River				
Hudson River	18" to <= 28"	1	4.1 - 11.30	North of George Washington Bridge (RM 12)
New York - Delaware River				
DE River	28" to <= 35"	1	All Year	
New Jersey				
All	28" to < 38"	1	All Year	Closed 1.1 - 2.28 (except in Atlantic Ocean) and 4.1 - 5.31 in the lower DE River and tribs
Bonus Program	24" to < 28"	1	5.15 - 12.31	1 fish/permit until quota reached (215,912 pounds)
Pennsylvania - Delaware River and Estuary				
DE River & Estuary	28" to < 35"	1	1.1 - 3.31, 6.1 - 12.31	PA State Line upstream to Calhoun St. Bridge
Spring	21" to < 24"	2	4.1 - 5.31	
Non-Tidal	28" to < 35"	1	All year	From Calhoun St. Bridge upstream
Delaware				
Delaware - Ocean				
Ocean	28" to <= 35"	1	1.1 - 6.30, 9.1 - 12.31	C&R on spawning grounds 4.1 - 5.31. DNREC to change measures to prohibit retention of fish measuring 35” exactly.
Delaware (Bay, River and Tribs)				
DE Bay + Tributaries	20" to <= 25"	1	7.1 - 8.31	

Table 1 (continued).

Mode/Region	Size Limit	Bag Limit	Open Season	Other
Maryland				
Maryland - Ocean				
Ocean, All	28" to < 35"	1	All Year	
Maryland - Chesapeake Bay				
All (Spring)	35"	1	5.1 - 5.15	Direct targeting prohibited 4.1 - 4.30 and 8.16 - 8.31; charter captains cannot keep fish for personal consumption
Private/Shore	19" min	1	5.16 - 8.15, 9.1 - 12.10	
For-hire	19" min (1 fish can be > 28")	2		
District of Columbia				
All	18" min	1	5.16 - 12.31	
Potomac River Fisheries Commission				
Spring	35" min	1	5.1 - 5.15	Downstream of Rt. 301 bridge
Summer/Fall	20" min	2	5.16 - 7.6, 8.21 - 12.31	Direct targeting prohibited 7.7 - 8.20
Virginia				
Virginia - Chesapeake Bay				
Spring/Summer	20" to <= 28"	1	5.16 - 6.15	
Fall	20" to <= 36"	1	10.4 - 12.31	Additional permit for 1 fish >36"/person/year
Virginia - Ocean				
Ocean	28" to <= 36"	1	1.1 - 3.31, 5.16 - 12.31	Additional permit for 1 fish >36"/person/year
North Carolina				
Ocean	28" to < 35"	1	All Year	

Table 2. Commercial measures for 2020 by state and region.

Quota (pounds)	Size Limit	Other
Ocean		
Maine, New Hampshire, Connecticut, Pennsylvania, District of Columbia		
No commercial fishery, no reallocation of commercial quota		
Massachusetts		
735,240	35" min	SPR-based CE
Rhode Island		
148,889	34" min (GC), 26" min (FFT)	61:39 (GC:FFT)
New York		
640,718	26" to < 38"	SPR-based CE
New Jersey (no commercial fishery; reallocate quota to recreational bonus program)		
215,912	24" to < 28"	1 fish/permit
Delaware		
142,474	28" min (20" Spring GN)	
Maryland		
89,094	24" min	
Virginia		
125,034	28" min	
North Carolina		
295,495	28" min	
Chesapeake Bay		
Maryland		
1,445,394	18" to < 36"	
Potomac River Fisheries Commission		
572,861	18" min	36" max, 2.15-3.25
Virginia		
983,393	18" min	28" max, 3.15-6.15

** Refer to state implementation plans for more detail regarding proposed open seasons, permitting/allocations, and gear restrictions

Table 3: Predicted striped bass removals for 2020 under final Addendum VI regulations, including CE measures.

Sector	2020 Predicted Removals (Numbers of fish)
Commercial Harvest*	584,949
Commercial Discards	101,067
Recreational**	5,335,296
Total	6,021,312
% Reduction from 2017	**-15%**

* Assuming quota utilization in 2020 = utilization in 2017

** Includes harvest and dead releases for recreational sector

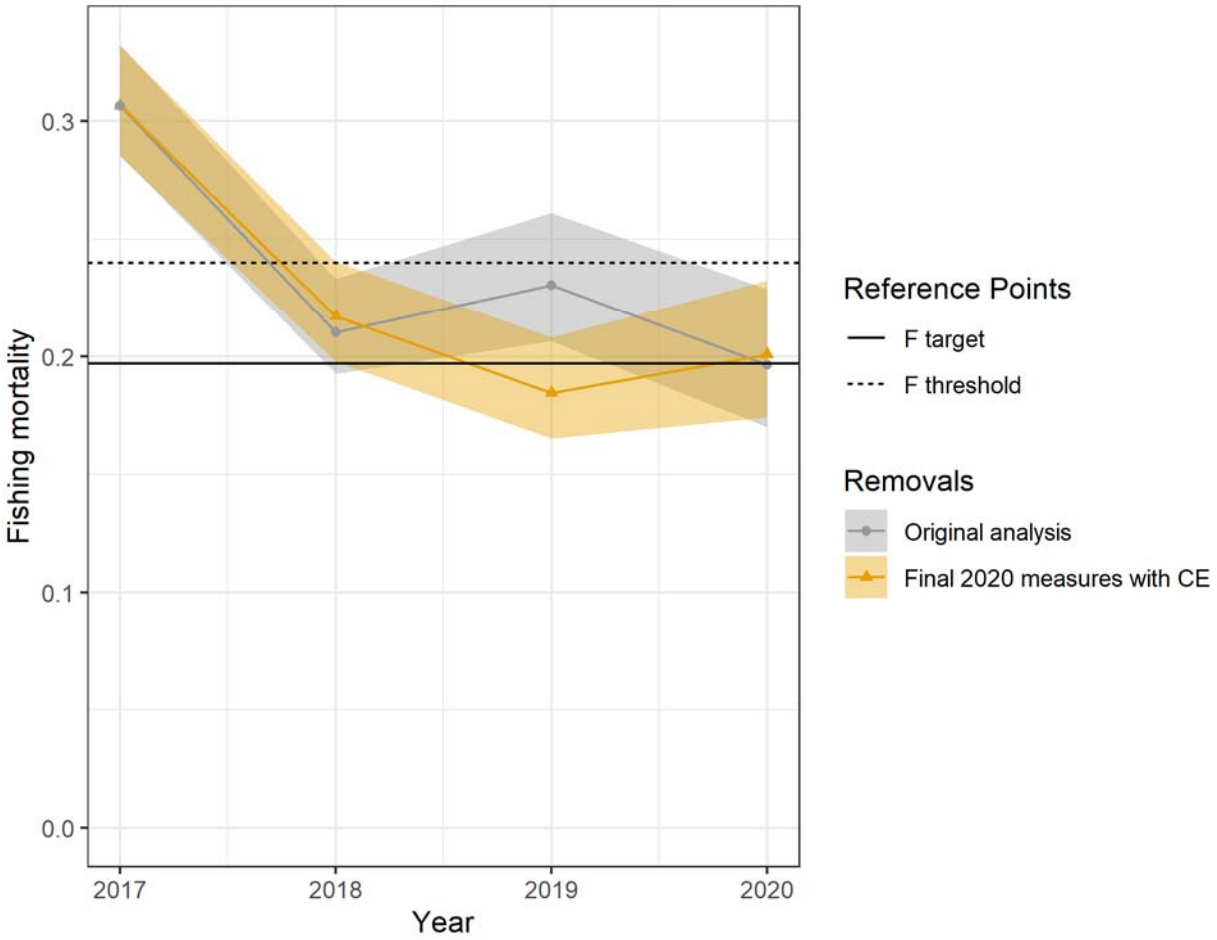

Figure 1. Projected striped bass *F* rates based on estimated removals from the original projections analysis conducted to inform the development of Addendum VI (coastwide measures), and the updated projections with final 2020 state measures including approved conservation equivalency. The updated projections also include updated 2018 and preliminary 2019 recreational removals, which were not available for the original projections. The shaded areas indicate 95% confidence intervals of the projections.

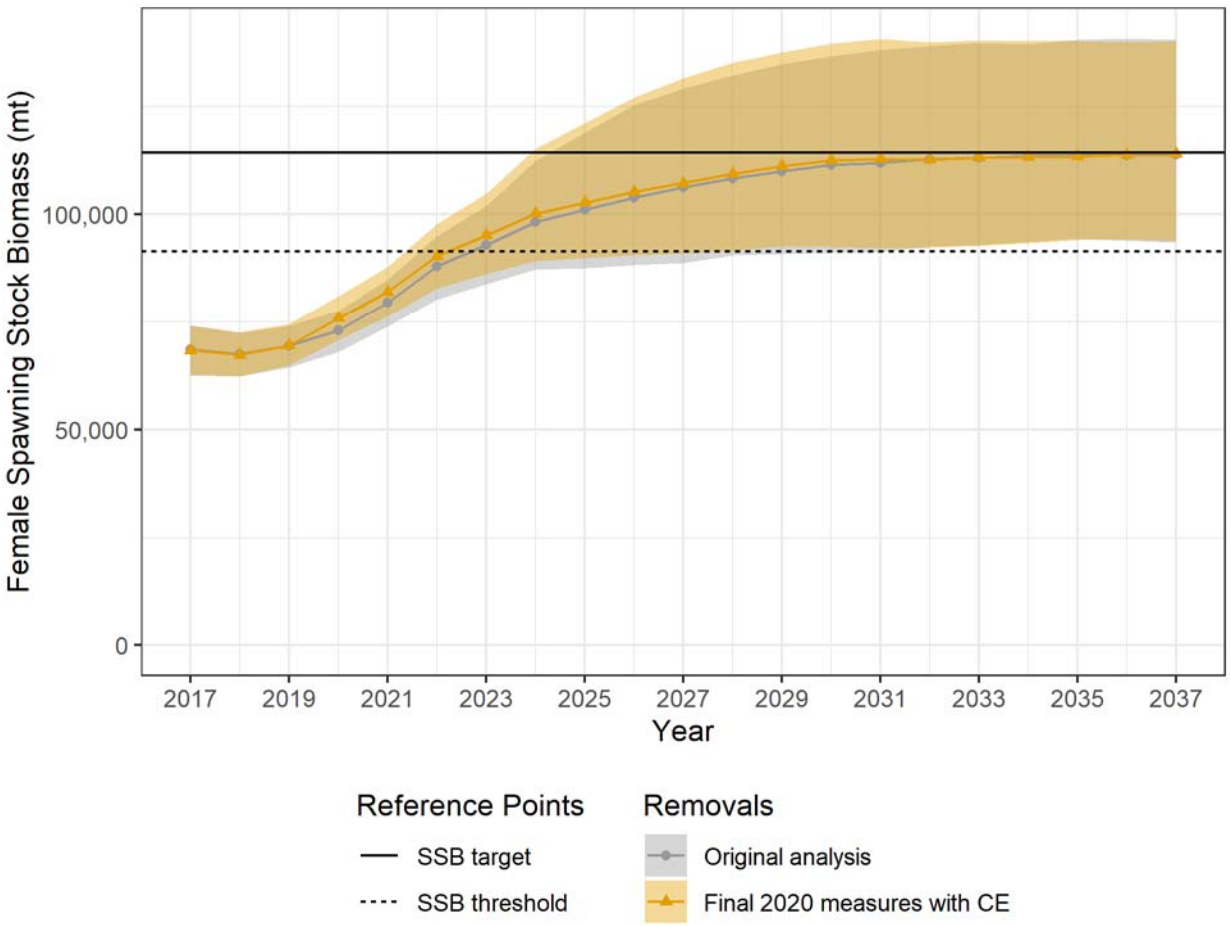

Figure 2. Projected striped bass female spawning stock biomass based on estimated removals from the original projections analysis conducted to inform the development of Addendum VI (coastwide measures), and updated projections with final 2020 state measures including approved conservation equivalency. The updated projections also include updated 2018 and preliminary 2019 recreational removals, which were not available for the original analysis. The shaded areas indicate 95% confidence intervals of the projections.

Bluefish FMAT Meeting
Bluefish Allocation and Rebuilding Amendment – Webinar Meeting Summary

April 2020

This document is part of a joint management action being considered by ASMFC and MAFMC. It was developed through the combined efforts of ASMFC's Plan Development Team (PDT) and MAFMC's Fishery Management Action Team (FMAT). For ease of readability, both groups will be referred to as FMAT throughout the document. The Bluefish Fishery Management Action Team (FMAT) met on Monday, April 13, 2020 to discuss developments of the Bluefish Allocation and Rebuilding Amendment. This was the first meeting following the supplemental scoping period and discussions at the December 2019 joint Council and Atlantic States Marine Fisheries Commission (ASMFC or Board) meeting.

FMAT members present: Ashleigh McCord (GARFO), Cynthia Ferrio (GARFO), Dave Stevenson (GARFO), Matt Cutler (NEFSC), Samantha Werner (NEFSC), Tony Wood (NEFSC), Mike Celestino (NJ DFW), Dustin Colson Leaning (ASMFC Staff), and Matthew Seeley (MAFMC Staff)

Others present: Greg DiDomenico (GSSA), Mike Waine (ASA), and Jose Montanez (MAFMC Staff)

Discussion

The FMAT received a presentation on the current status of the Bluefish Allocation and Rebuilding Amendment (Amendment), the scoping comment summary, initial draft alternatives for each issue, and next steps. Following the presentation, the FMAT discussed scoping comments and developed recommendations on the scope of issues to be included in the Amendment. Additionally, the FMAT made recommendations on how to approach developing draft alternatives for each amendment issue.

The following comments and suggestions will inform Amendment development and guide updates to the FMAT Action Plan. The FMAT will pursue drafting alternatives for each amendment issue for approval at the joint June Council/Board meeting. The FMAT spent substantial time discussing how many alternatives should be developed per issue. The FMAT was in consensus that a single alternative for Issue 1 was reasonable but was more conflicted about the remaining issues. The FMAT does not want to develop an unwieldy number of options, however, some issues contain important decision points that could be either resolved to one alternative through FMAT discussions or split into multiple alternatives. Ultimately, stakeholders will have the ability to add, refine, and subtract alternatives, and the FMAT welcomes any guidance the Council/Board might provide.

FMAT Requested Input – Staff Questions (Summary of FMAT requested input on each issue, approach, recommendation, and the associated questions).

Issue	Approach	FMAT Recommendation	Staff Questions
1. Fishery Management Plan Goals and Objectives	Revise vs. status quo	Revise (proposed revisions provided in FMAT summary)	Is there an important aspect of the fishery not currently captured by the suggested goals and objectives? Should an objective be removed entirely? Any other recommended revisions?
2. Commercial and Recreational Sector Allocations	Catch versus landings-based allocations	Recommend *catch based allocations*; captures the catch-and release aspect of the recreational fishery.	Should both catch and landings-based allocations be further developed?
	Revised percentages based on different data or time series	Keep for further consideration; FMAT recommends using time series of minimum 10 years to capture cyclical nature of fishery.	Which time series should be considered? What other approaches should be developed for consideration? • Revised time series • Trigger-based • Socioeconomic
	Discards	NEFSC-calculated or MRIP.	What approach should be taken when calculating recreational and commercial discards?
3. Commercial Allocations to the States	Catch versus landings-based allocations	Recommend *landings-based allocations*; **commercial discards are considered negligible**. Concerns regarding consistency.	Should both catch and landings-based allocations be further developed?
	Revised percentages based on different data or time series	FMAT recommends updating allocations due to several states consistently underutilizing their quota; longer timeframe recommended.	Which time series should be considered?

4. Quota Transfer Processes	Recreational to commercial transfer	Keep for further development; successful development of new allocations will reduce the need for transfers. Consider provisions that allow transfers in either direction.	Should the ability to transfer from the commercial to the recreational sector also be considered?
	Commercial state-to-state transfer	Keep for further development	Should commercial state-to-state transfers remain in the plan as an option?
5. Rebuilding Plan	5 rebuilding projections listed in Issue 5.	FMAT recommends removal of the rebuilding from the amendment and submitting the plan in a framework/addenda.	Should the rebuilding plan be removed from the amendment? If not, are additional projections needed?
6. Other Issues			
6.1 Sector specific management uncertainty	Sector specific management uncertainty	Keep for further development	Should a policy change be considered for further analysis?
6.2 Recreational sector separation	Separate allocations to for-hire vs. private sectors	FMAT requested further guidance from Council/Board as to which approach should be adopted.	What data should be used? Catch versus landings allocation?
	Separate management measures for for-hire vs. private sectors		Should a policy change (allowance) be considered for further analysis?
	Discards	NEFSC-calculated or MRIP.	What approach should be taken when calculating recreational discards?

<u>FMAT Comments/Suggestions on the Scope of Issues for Amendment Development</u>

Issue 1: Fishery Management Plan (FMP) Goals and Objectives

The FMAT plans to present the Council/Board with two options for the FMP Goals and Objectives: 1) Status quo/No action and 2) the draft option below with multiple opportunities to revise as needed. Immediately following the proposed FMP Goals and Objectives below are additional comments and recommendations from the FMAT on how to further refine the list.

Old Bluefish FMP Goals and Objectives

Goal: Conserve the bluefish resource along the Atlantic coast.

1. Objective: Increase understanding of the stock and of the fishery.
2. Objective: Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish.
3. Objective: 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. Objective: Prevent recruitment overfishing.
5. Objective: Reduce the waste in both the commercial and recreational fisheries.

Proposed Draft Bluefish FMP Goals and Objectives

Goal: Conserve the bluefish resource through stakeholder engagement to maintain sustainable recreational fishing and commercial harvest.

1. Ensure the biological sustainability of the bluefish resource in order to maintain a sustainable bluefish fishery.
    a. Achieve and maintain a sustainable spawning stock biomass and rate of fishing mortality.
    b. Promote catch and release within the recreational fishery.
2. Maintain effective coordination between the National Marine Fisheries Service, Council, Commission, and member states to support the development and implementation of management measures.
    a. Promote compliance and effective enforcement of regulations.
    b. Promote science, monitoring, and data collection that support and enhance effective ecosystem-based management of the bluefish resource under changing environmental conditions.
3. Provide access to the fishery throughout the management unit that reflects constituent preferences.
4. Balance the needs and priorities of different user groups and optimize economic and social benefits from utilization of the bluefish resource.

or

Goal 1. Conserve the bluefish resource through stakeholder engagement to maintain sustainable recreational fishing and commercial harvest.

1. Ensure the biological sustainability of the bluefish resource in order to maintain a sustainable bluefish fishery.
    a) Achieve and maintain a sustainable spawning stock biomass and rate of fishing mortality.
    b) Promote catch and release within the recreational fishery.

2. Maintain effective coordination between the National Marine Fisheries Service, Council, Commission, and member states to support the development and implementation of management measures.
    a) Promote compliance and effective enforcement of regulations.
    b) Promote science, monitoring, and data collection that support and enhance effective ecosystem-based management of the bluefish resource under changing environmental conditions.

Goal 2. Provide access to the fishery throughout the management unit that reflects constituent preferences.

Goal 3. Balance the needs and priorities of different user groups and optimize economic and social benefits from utilization of the bluefish resource.

- The FMAT would like to receive feedback from the Council/Board on the structure of the FMP Goals and Objectives. Is the current layout of one goal followed by multiple objectives and sub-objectives (or strategies) appropriate?
    - Several FMAT members agreed that the goals should be overarching statements, and objectives and sub-objectives should be specific to how the goals will be achieved.
    - FMAT members were concerned that the sub-objectives are too prescriptive. The sub-objectives should not constrain management to a narrow set of policy options.
- The FMAT will continue to refine the FMP Goal and Objectives once we receive input from the Council and Board.
- Do the objectives adequately embody the overarching goal of "conservation"?
- Under objective 4, the FMAT tried to encompass all user groups from the snapper/bait anglers to the offshore party/charter fleets.
- Objectives 3 and 4 are very similar. The FMAT should consider revising Objective 3 to be a sub-objective or strategy under objective 4.

Issue 2: Commercial and Recreational Sector Allocations

The FMAT discussed whether allocations should be landings or catch-based and what time series should be used. The current allocations set in Amendment 1 are landings-based and use data from 1981-1989. The FMAT offered the following comments and recommendations:

- The FMAT discussed switching to catch-based landings since the fishery is dominated by the recreational sector.
    1. Identify why landings were initially used and clarify if there are data quality issues.
    2. Communicate which data sources are used for the commercial allocations (landings vs. catch which is subject to change depending on what method is used i.e., CFDERS to VTR) and recreational allocations (landings vs. catch (both MRIP).
    3. Consider the opportunity costs and possible data consequences of switching from landings to catch data.

- *The FMAT noted that there is still no set approach to how recreational discards are estimated – NEFSC-calculated and MRIP.*
- Many anglers view bluefish as a catch and release species, so incorporating discards into the allocation calculation will capture the recreational nature of the fishery.
- According to the most recent operational stock assessment, commercial discards are considered negligible in the bluefish fishery.
- A lot of fishing goes unaccounted when setting landings-based allocations.
    - Many anglers prefer some aspect of catch-and-release and do not want released fish transferred to the commercial sector.
- Dead discards are counted against the overall quota, so the FMAT discussed including them in the allocation calculations.
- Use the calibrated MRIP estimates to update the recreational time series (Table 1).
    - Generate the same allocation tables in the scoping presentation, but with catch data instead of landings.
    - Use a timeseries including the most recent 10 years (2009-2018) of data.
    - Use a timeseries including the most recent 20 years (1999-2018) of data.
        - Bluefish seem to have cyclical life history patterns, so the FMAT recommends using time series with a minimum of 10 years to capture the shifts in catch (reflecting distribution and availability) over a longer time period.

- The FMAT discussed identifying a standard methodology for how recreational discards are calculated. The standard methodology should be used for both monitoring the fishery as well as in the stock assessment and not revised each year as it has been in recent years.
    - Assessment Scientist: There are challenges in determining what the recreational discard mortality rates are. The Northeast Fisheries Science Center method for calculating discards was accepted through the benchmark stock assessment process but were not ultimately used in management.
- The FMAT recommends commercial discards continue to be considered insignificant. Commercial discards are calculated using the standardized bycatch reporting methodology. These discards still remain insignificant from the last benchmark stock assessment.
    - Assessment Scientist: Since commercial discards are so small relative to the other catch components, the FMAT recommends the common approach of assuming 100% discard mortality.

Table 1. Landings-based sector allocations.

Avg Time Series	Amend 1 1981-1989	38 years 1981-2018	20 years 1999-2018	10 years 2009-2018	5 years 2014-2018	3 years 2016-2018	1 year 2018
Recreational	89.73%	86.73%	84.95%	87.26%	86.97%	87.23%	85.76%
Commercial	10.27%	13.27%	15.05%	12.74%	13.03%	12.77%	14.24%

Issue 3: Commercial Allocations to the States

The FMAT's discussion on the commercial allocations to the states focused on the decisions regarding the use of landings or catch-based data and selecting the appropriate time series. The current allocations set in Amendment 1 are landings-based and use data from 1981-1989. The FMAT also acknowledged that this issue needs to be considered along with the transfer provisions that allow for commercial state-to state transfers. The FMAT offered the following comments and recommendations:

- The FMAT discussed maintaining using landings-based data to set the commercial allocations to the states.
    1. Identify why landings were initially used and clarify if there are data quality issues.
    2. Communicate which data sources are used for the commercial allocations (landings vs. catch which is subject to change depending on what method is used i.e., CFDERS to VTR) and recreational allocations (landings vs. catch (both MRIP).
    3. Consider the opportunity costs and possible data consequences of switching from landings to catch data.
    - Discards are negligible and difficult to estimate in the commercial fishery.
    - Develop alternatives using an updated time series since northern states often exceed their own commercial quota (prior to transfers) and species distribution/availability has shifted in the last three decades (Table 2).
        - Use a timeseries including the most recent 10 years (2009-2018) of data.
        - Use a timeseries including the most recent 20 years (1999-2018) of data.
            - The longer time series ensures historical participation is considered when setting allocations.
            - Bluefish seem to have cyclical life history patterns, so the FMAT recommends using time series with a minimum of 10 years to capture the shifts in catch/landings over a longer time period.
            - The FMAT noted the two allocation issues do not have to have the same time series alternatives (i.e. Allocations for Issue 2 can be catch-based while allocations for Issue 3 can be landings-based). However, clear justification needs to be provided for each allocation decision.
    - Use the state-to-state transfer table in the scoping document as an indicator for how the allocations should change.
        - A representative from the commercial industry drew issue with this suggestion. He thought that it was a dangerous precedent to set, which would incentive states to avoid transfers in the future knowing that allocation decisions are made based on quota transfers.
- Commercial discards are trivial at the scale of the entire fishery and the FMAT lacks confidence in the accuracy of commercial discard estimates. The FMAT recommends a landings-based approach be taken for setting commercial allocations to the states.
    - While commercial discards are trivial at the scale of the entire fishery, it is presently unknown whether they are trivial at the scale of the commercial fishery,

or whether they can be estimated at the state-specific level. The FMAT has identified this as an area of further investigation.

Table 2. Landings-based commercial state-to-state allocations.

State	1994-2018 Avg 25 years	1999-2018 Avg 20 years	2009-2018 Avg 10 years	2014-2018 Avg 5 years	2016-2018 Avg 3 years	2018 Avg 2018
ME	0.09%	0.01%	0.01%	0.00%	0.00%	0.00%
NH	0.66%	0.18%	0.13%	0.04%	0.00%	0.00%
MA	8.74%	8.11%	10.80%	11.25%	10.44%	8.87%
RI	9.20%	8.67%	10.25%	12.49%	13.26%	10.76%
CT	0.97%	0.80%	1.08%	1.22%	1.56%	2.19%
NY	21.53%	20.91%	21.18%	21.45%	21.29%	24.48%
NJ	17.55%	16.26%	14.82%	11.87%	10.14%	2.55%
DE	0.49%	0.40%	0.39%	0.63%	0.33%	0.29%
MD	1.72%	1.63%	1.88%	1.66%	1.34%	1.24%
VA	7.74%	6.95%	5.88%	5.06%	5.16%	4.66%
NC	34.19%	34.43%	29.73%	29.51%	30.35%	34.75%
GA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FL	2.99%	3.04%	3.90%	4.84%	6.11%	10.21%
Total	105.85%	101.39%	100.03%	100.02%	100.00%	100.00%

Issue 4: Quota Transfer Processes

Recreational to Commercial Transfers

- The successful development of sector allocations that adequately reflect recent fishing trends will reduce the need for sector transfers.
- The transfer provisions are a very useful tool for adaptive management.
    - If the ability to transfer quota across sectors are removed from the FMP, ensure it is added as a frameworkable action that can be included again in the future.
- Many anglers prefer some aspect of catch-and-release and do not want released fish transferred to the commercial sector.
- The FMAT requests guidance from the Council and Board on whether additional modifications to the transfer process should be considered. As it currently stands, the alternatives may be: “status quo” and “remove the provisions”.
    - Additional modifications may include: 1.) Guidance under what conditions transfers may occur, 2.) The upper limit bound of the transfer (currently up to 10.5 million lbs), and 3.) Guidance on potential to transfer quota from the commercial to recreational sector.
        - From 2009-2018, on average, ~4.6 million pounds of quota has been transferred from the recreational to commercial sector per year. Furthermore, on average, only 17.4% of the transfer was used per year.

Commercial State-to-State Transfers

- The successful development of commercial allocations to the states that reflect recent fishing trends will lead to fewer transfers in the short-term. Yet, transfers will likely be utilized in the long-term because bluefish are a dynamic stock that experience frequent changes in regional distribution and abundance.
- The transfer provisions are a very useful tool for adaptive management.
    - If the ability to transfer quota across states are removed from the FMP, ensure it is added as a frameworkable action that can be included again in the future.
- Each state's quota increases proportionally when quota is transferred across sectors, so the sector-based transfer supplements the state-to-state transfers.

Issue 5: Rebuilding Plan

- The Bluefish Rebuilding Plan needs to be completed by November 2021 (two years after notification). The FMAT discussed whether the rebuilding plan should be removed from the Amendment, as it would offer more time to develop/conduct the necessary alternatives and analyses for the other issues in the Amendment.
    - The FMAT noted that the rebuilding plan may rush amendment development and not leave enough time to sufficiently develop all alternatives.
    - The FMAT supports removing rebuilding to allow more time for the rest of the Amendment.
- The review of scoping comments suggest that fishing pressure caused the change in stock status.
    - The FMAT suggests that fishing is probably not the driver of this stock shift.
        - Changes in the data caused this disruption – the model needs to settle and then things may change over the next few years.
- Projections to run:
    - Catch in 2020 and 2021 of 7,385 with a rebuilding f that rebuilds the stock in 10 years – constant rebuilding f
        - Requires a modification to the Council risk policy because the catches will most likely exceed the catches associated with the p* approach.
    - Catch in 2020 and 2021 of 7,385 with a rebuilding f that rebuilds in 7 years – constant rebuilding f
        - Requires a modification to the Council risk policy because the catches will most likely exceed the catches associated with the p* approach.
    - Constant harvest strategy that will allow the fishery to be rebuilt in 10 years – highest catch possible equal across all years
    - Run p* with catch in 2020 and 2021 of 7,385 until the stock is rebuilt – 100% CV (use the new p* approach)
    - Constant harvest of the 7,385 ABC that rebuilds in 4-5 years

Issue 6: Other

- Many of the "other" comments discussed were related to actions that can be addressed through specifications (e.g., regulations with minimum sizes).

- The FMAT recommends the Council/Board offer guidance on sector-specific management uncertainty. Management uncertainty falls under "ABC=ACL" in the flow chart. The Council/Board indicated at a previous meeting that they may want to add a management uncertainty box that can be applied to the recreational and commercial sector, separately.
    - There is no standard across all management groups on how recreational discard projections are estimated, which leads to very different discard projections. The Monitoring Committee (and/or Council/Board) has expressed interest, especially in the most recent specification cycle, in a more targeted sector approach when making recommendations concerning management uncertainty. As it currently stands, any concerns regarding recreational management measures may only be addressed by increasing management uncertainty for both sectors. This has the negative consequence of unjustifiably affecting commercial quotas (Figure 1).
- The FMAT discussed for-hire sector-separation/allowance and requests further discussion and direction from the Council/Board.
    - Some members of the public have asked for for-hire sector separation in the form of a sub-ACL allocation. Others have requested a "for-hire allowance", which would allow the for-hire sector to maintain separate measures from the recreational fishery without a separate allocation.
    - The FMAT indicated that using a recent time series to estimate a for-hire "allocation" will result in an allocation of less than ~3%.

Table 3. Summary of landings and catch representing for-hire sector separation/allowance using MRIP calibrated estimates.

Landings: A+B1

Bluefish Time Series	Years	Private/Shore %	For-Hire %
Base Years	1981-1989	86%	14%
5 Most Recent Years	2014-2018	99%	1%
10 Most Recent Years	2009-2018	98%	2%
15 Most Recent Years	2004-2018	98%	2%

Catch: A+B1+B2

Bluefish Time Series	Years	Private/Shore %	For-Hire %
Base Years	1981-1989	87%	13%
5 Most Recent Years	2014-2018	98%	2%
10 Most Recent Years	2009-2018	98%	2%
15 Most Recent Years	2004-2018	98%	2%

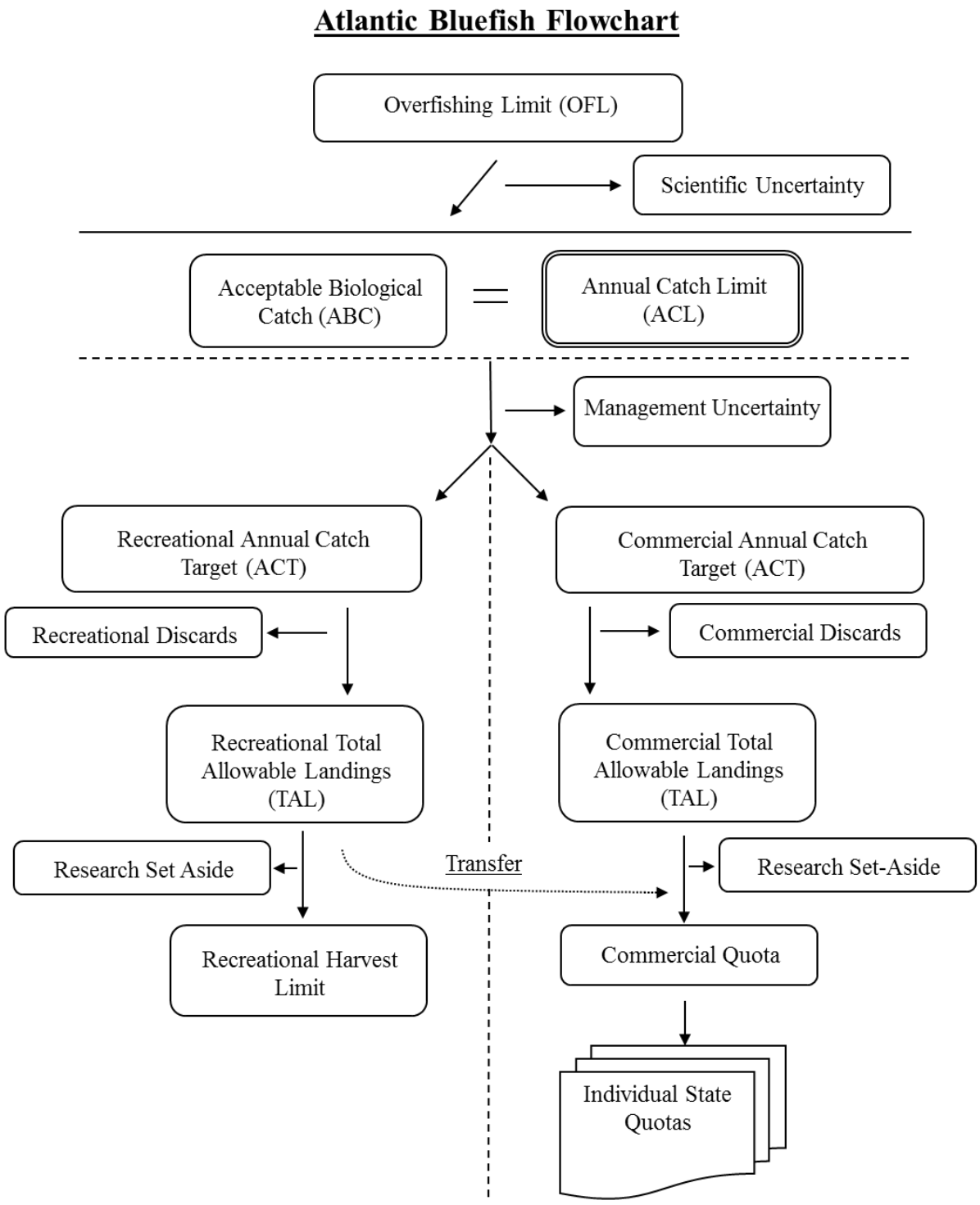

Figure 1. Bluefish flowchart detailing specifications and management measures.

Summer Flounder, Scup, Black Sea Bass
Commercial/Recreational Allocation Amendment

FMAT Meeting 1 Summary
April 14, 2020, 1-4 PM

This document is part of a joint management action being considered by ASMFC and MAFMC. It was developed through the combined efforts of ASMFC's Plan Development Team (PDT) and MAFMC's Fishery Management Action Team (FMAT). For ease of readability, both groups will be referred to as FMAT throughout the document. The Fishery Management Action Team (FMAT) met by webinar to provide recommendations to the Council and Board on the scope of this action, including broad categories of alternatives to potentially include in the amendment. The FMAT discussed example approaches and alternatives assembled by staff, which were informed by scoping comments and are listed below. These examples were provided for discussion purposes and were not necessarily endorsed by staff or other members of the FMAT. FMAT comments and recommendations are provided under each category of approaches. The appropriate structure of the alternatives will be determined at a later date.

FMAT members in attendance: Kiley Dancy (MAFMC Staff), Julia Beaty (MAFMC Staff), Karson Coutre (MAFMC Staff), Dustin Colson Leaning (ASMFC Staff), Caitlin Starks (ASFMC Staff), Emily Keiley (GARFO), Greg Ardini (NEFSC), Marianne Ferguson (GARFO), Mark Terceiro (NEFSC), Gary Shepherd (NEFSC)

Others in attendance: Matt Seeley (MAFMC Staff), Mike Waine (ASA), Steve Cannizzo (NY RFHFA), Tony Wood (NEFSC), Greg DiDomenico (GSSA), Joe Cimino (NJ DEP; Council and Board member), Adam Nowalsky (Council and Board member)

Recommendation Summary

Category	Approach	Summary of FMAT Recommendation
1. No Action/Status Quo	1. No Action/Status Quo	Must include in amendment.
2. Revised percentages based on different data or time series	2.1 Existing base years with revised data	Keep for further development. May not be viable for catch-based options for summer flounder and black sea bass.
	2.2 Revised base years based on recent landings/catch	Keep for further development; however, should be evaluated for bias toward recreational sector for some species given recent sector performance.
	2.3 Revised base years based on post-rebuilding years	Keep for further development; however, may be similar in outcome to recent base years and should be evaluated for bias toward recreational sector as with option above.
	2.4 Based on socioeconomic analyses	Keep for further development; explore possible data sources for this type of analysis.
	2.5 Allocate in numbers instead of pounds	Recommend removing from consideration in this action.

3. Allocations attempting to maintain roughly status quo harvest by sector from the most recent year prior to last assessment update		Keep for further development; additional analysis needed before FMAT can determine whether this is a fair & equitable approach.
4. Recreational sector separation	4.1 Separate allocations to for-hire vs. private sectors	Keep for further development.
	4.2 Separate management measures for for-hire vs. private sectors	Keep for further development.
5. Harvest control rule based approaches		Keep for further development; however, needs additional evaluation and detail to determine whether it addresses amendment purpose or should be considered via a separate process.
6. Recreational accountability alternatives (e.g., more frequent overage paybacks or in-season closure)		Additional accountability could be built into allocation options, but current suggestions may represent reversal of recent changes to accountability measures.
7. Recreational catch accounting alternatives	7. Mandatory private angler reporting, issuing tags, mandatory tournament reporting, requiring VTRs for state for-hire vessels, reinstating did not fish reports.	Keep for further development; however, major modifications to the current catch accounting systems are likely beyond the intended scope of this action on the current timeline.
8. Dynamic allocation approaches and options for future revisions	Moving average approach	Keep for further development.
	Allocation changes through frameworks/addenda	Keep for further development; however, the benefits of expediency versus reduced public input need to be considered
	Trigger approach	Keep for further development.
9. Allocation transfers and set-asides	9.1 Transfer of allocation between sectors	Keep for further development.
	9.2 Allow one sector to buy allocation from another	Recommend removing from consideration in this action.
	9.3 Allow a certain amount of allocation to be set aside through specifications	Keep for further development. Concerns about equity considering that the recreational sector is not as easily held to its limits as the commercial sector.

General comments

NEPA analysis

One FMAT member noted that as currently presented, the example alternatives would have mostly socioeconomic impacts. If the final range of alternatives is similar to that discussed at the first FMAT meeting, it is anticipated that an Environmental Assessment would be required under the National Environmental Policy Act (NEPA), rather than a more detailed Environmental Impact Statement.

Red snapper lawsuit

The FMAT briefly discussed a legal case regarding reallocation between the commercial and recreational red snapper sectors in the Gulf of Mexico. The court determined that this reallocation was inconsistent with National Standard 4[1] based on the justification provided. One FMAT member emphasized that it is not sufficient to argue that the allocations should change just because the data changed. Consideration also needs to be given to other implications of allocation changes, including fairness and equity. The red snapper case provides a reminder that each alternative considered through this action should have a robust justification and the consistency of each alternative with National Standard 4 should be evaluated.

Allocation utilization

Adam Nowalsky (speaking as a member of the public and not in his capacity as Board chair) noted that many of the example options presented would move allocation from the commercial fishery to the recreational fishery. He noted that for a species like scup with a high level of biomass and very liberal recreational measures, managers should consider the implications of an action that could potentially increase recreational allocation for a species where it may not be needed or fully used. Council staff noted that for scup, under the revised Marine Recreational Information Program (MRIP) estimates, restrictions in recreational measures may be needed if allocations are not revised, given that the current harvest limit is lower than recent MRIP estimates for scup. Potential changes could appear drastic because measures would have to be dramatically reduced to notably impact harvest. This highlights the issue that for all three species, the revised MRIP estimates could result in increased difficulty constraining harvest to the harvest limits under current allocations.

Catch vs landings based allocations

The FMAT agreed that alternatives for both catch-based and landings-based allocations should be developed, and the pros and cons of each should be further explored.

Scup currently has a catch-based allocation, meaning that the Acceptable Biological Catch (ABC), including both landings and discards, is allocated 78% to the commercial fishery and 22% to the

[1] National Standard 4 states that "Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation; and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege."

recreational fishery. Summer flounder and black sea bass have landings-based allocations, meaning that the percentage allocations in the FMP apply only to the landings portion of the total ABC. Discards are divided based on Monitoring Committee recommendations using recent year trends in discards by sector. Under this approach, if one sector has higher discards, that sector will likely receive more of the discards portion of the ABC in the following years, resulting in a lower allocation to the other sector. This can lead to unrealistic discard projections by sector and could provide an advantage to a sector that sees increased discards.

If discards are included directly in the allocation (i.e., a catch-based allocation), there may be a greater incentive for each sector to reduce discards in order to increase their allowable landings. This was part of the rationale for creating a catch-based allocation for scup.

1. No action/status quo alternative

The no action/status quo alternative would keep the existing allocations as specified in Table 1.

Table 1: Current allocations for summer flounder, scup, and black sea bass.

	Allocation	
Summer flounder: 1980-1989 (landings-based allocation)	**Com**	60%
	Rec	40%
Scup: 1988-1992 (catch-based allocation)	**Com**	78%
	Rec	22%
Black sea bass: 1983-1992 (landings-based allocation)	**Com**	49%
	Rec	51%

FMAT comments and recommendations:

The revised MRIP estimation methodology resulted in much higher recreational catch estimates than those used to calculate the current allocations. Commercial discard estimates have also changed. Allocations based on the older data pose challenges for constraining the fisheries, especially the recreational sector, to their catch and landings limits.

2. Example alternatives for allocations based on different data or time series

The following example approaches would revise the percentage allocations based on modified base years or different data sets. Both catch-based and landings-based allocation options are included within these categories and could be developed into sub-alternatives where appropriate. The examples below were derived from scoping comments and were presented to the FMAT for the purposes of discussion.

2.1 Keep existing base years but update with the most recent recreational and commercial data.

This method would maintain the existing base years shown in **Table 2** and re-calculate the percentage allocations using the most recent best available data for each species. In some cases, data may need to be pulled from multiple sources given the varying time series available for different data streams, as described below in **Table 2**.

Table 2: Example allocations using existing base years updated with recent data.

		Catch-based	Landings-based
Summer flounder: 1981-1989[a]	**Com**	[b]	55%
	Rec	[b]	45%
Scup: 1988-1992	**Com**	65%	57%
	Rec	35%	43%
Black sea bass: 1983-1992	**Com**	[b]	45%
	Rec	[b]	55%

[a] Summer flounder base years are 1980-1989; however, MRIP data is only available back to 1981, so these calculations are based on 1981-1989.
[b] Discards in weight for both sectors only available from 1989-present.
Data sources: Summer flounder data are from the most recent benchmark stock assessment (2018). Scup data are from the most recent stock assessment update (2019). For black sea bass, the recreational data are from MRIP and the commercial data are from the ACCSP as the black sea bass assessment does not include all of the allocation base years.

FMAT comments and recommendations:

The FMAT noted that reliable discard estimates are not available for all base years for all three species. If catch based allocation alternatives are developed, the FMAT should look carefully at the reliability of discard estimates for each sector. Catch-based allocations may not be possible using the existing base years for all species if reliable discard estimates are not available.

The example modified allocations shown in Table 2 would move 5% of the commercial summer flounder allocation to the recreational sector, 13% of the commercial scup allocation to the recreational sector, and 4% of the commercial black sea bass allocation to the recreational sector. Given recent recreational harvest levels, this change may not be enough to prevent future recreational sector restrictions for some species. Some FMAT members also noted that some scoping comments expressed concerns with continuing to use the 1980s and early 1990s as base years given that the fisheries were very different during that time period.

2.2 Revised base years, based on recent catch or landings averages

This concept uses more recent base years, for example, the last 5, 10, or 15 years of catch or landings as shown in **Table 3**. These examples were all suggested through scoping.

Table 3: Example allocations based on revised base years of catch or landings from the last 5 years, 10 years, and 15 years.

		5 Years: 2014-2018		10 years: 2009-2018		15 years: 2004-2018	
		Catch-based	**Landings-based**	**Catch-based**	**Landings-based**	**Catch-based**	**Landings-based**
Summer flounder	**Com**	40%	41%	43%	45%	44%	45%
	Rec	60%	59%	57%	55%	56%	55%
Scup	**Com**	62%	57%	61%	57%	60%	56%
	Rec	38%	43%	39%	43%	40%	44%
Black sea bass	**Com**	25%	22%	24%	22%	28%	27%
	Rec	75%	78%	76%	78%	72%	73%
Data from most recent assessment updates with data through 2018 (final 2019 data is not yet available).							

FMAT comments and recommendations:

The FMAT noted that these changes would represent fairly substantial shifts in allocation for all three species. Shifts of this magnitude may not be politically feasible. In addition, using recent years to define allocations is complicated by the fact that these are all years when the fisheries were theoretically constrained by the current allocations. However, the FMAT also noted that the commercial fisheries have been closer to their allocation in each of these years than the recreational fishery. In general, recreational fishery performance relative to recreational limits has been more variable than commercial fishery performance, with some years of substantial recreational overages and/or underages depending on the species.

The FMAT also discussed that although these calculations show that there was a higher percentage of recreational catch and harvest in these years than previously thought, this does not necessarily mean that the recreational sector exceeded their limits, since revised MRIP estimates cannot be compared to recreational limits set using the prior assessments with old MRIP data.

A member of the public noted that the use of these recent base years seems arbitrary and that managers should consider the different management histories of these species in setting allocations.

2.3 Revised base years based on time period after rebuilding

A concept suggested during scoping was developing revised base years using the 5 years following the rebuilt declaration for each species (**Table 4**).

Table 4: Example allocations based on the 5-year time period following rebuilding for each species. Data are from the most recent assessment updates.

		Catch-based	Landings-based
Summer flounder: 2012-2016	**Com**	39%	42%
	Rec	61%	58%
Scup: 2010-2014	**Com**	60%	58%
	Rec	40%	42%
Black sea bass: 2010-2014	**Com**	24%	24%
	Rec	76%	76%

FMAT comments and recommendations:

As with the approaches described above, the FMAT noted that these changes would represent fairly substantial shifts for all three species, shifting 18% of landings to the recreational fishery for summer flounder, 18% of catch to the recreational fishery for scup, and 25% of landings to the recreational fishery for black sea bass. Shifts of this magnitude may not be politically feasible. As noted above, this method also relies on base years when the fisheries were theoretically constrained by the current allocations. During these years, the commercial fishery generally stayed closer to its allocation while the recreational fishery has had more variable performance relative to their limits, depending on the species.

In particular for black sea bass during these post-rebuilt years (2010-2014), the recreational fishery tended to exceed its limits, at times substantially. A member of the public noted that during these years, black sea bass was managed under a constant catch approach due to the lack of an accepted stock assessment and as such the fisheries were inappropriately constrained during this time. Some members of the FMAT agreed that these years may not be appropriate base years for black sea bass given that the catch limits at the time did not reflect biomass. Recreational overages during this time period occurred as the result of high availability combined with artificially low catch limits. Meanwhile, the commercial fishery was constrained by quotas that in retrospect were lower than biologically necessary.

The rationale provided for this approach during scoping was that the 5 years post-rebuilding would be more appropriate base years than recent years since higher availability in recent years would bias the allocations in favor of the recreational sector. The FMAT discussed whether using post-rebuilding years would actually be substantially different than recent years, as the example percentages shown in **Table 3Table 2** and **Table 4** seem fairly similar for these species. Some FMAT members questioned whether availability was substantially higher in recent years compared to the 5 years after rebuilding. The FMAT considered recommending removal of this option due to these factors, but noted that it may be worth exploring variations on this idea such as a combination of high and low availability years. It would also be beneficial to look at trends in biomass pre- and post-rebuilding for each species.

2.4 Alternatives for allocations based on socioeconomic considerations

Alternatives could be based on socioeconomic information such as evaluating the economic efficiency of the recreational and commercial fisheries. There is currently a project in development for summer flounder which aims to determine which allocations would maximize marginal benefits to the commercial and recreational sectors, by combining recreational and commercial spatial discrete choice models to simulate behavior under alternative allocations between the sectors. This project was initially completed in 2016 by Rob Hicks and Kurt Schnier and is being updated with revised MRIP data. The results may be available in summer 2020. Ideally, the FMAT

will be able to review preliminary results at their next meeting in mid- to late May 2020. This project is only applicable to summer flounder.

Other economic approaches beyond this specific model could also be used to develop alternatives if the resources and expertise are available within the time frame of this action.

FMAT comments and recommendations:

It is unclear at this time what the economic model results will show. This type of evaluation is unavailable for scup and black sea bass so different approaches would need to be used for these species.

One FMAT member noted that the NEFSC created an input/output model for the commercial fishery which can be used for socioeconomic evaluations. The NEFSC Social Sciences Branch representative on the FMAT will check with other SSB staff on what information may be available for the recreational sector, and the FMAT will revisit what types of social and economic evaluation could be performed to inform allocation alternatives.

2.5 Allocations derived from historical catch or landings in numbers of fish (as opposed to pounds)

A few scoping comments suggested that allocation should be in numbers of fish instead of in pounds, at least for the recreational fishery.

FMAT comments and recommendations:

The FMAT advises against further consideration of allocating in numbers of fish in this commercial/ recreational allocation amendment given the concerns described below.

The FMAT noted that while allocating in numbers of fish instead of pounds may produce different allocation percentages, it is unclear how this approach would work in terms of the methodology and implications. For example, because the overall catch limits are in pounds, it is not clear how an allocation in numbers of fish would work and whether it would have any advantages over the current methods of allocating in pounds. At some point in the specifications setting process there would need to be a conversion from pounds to numbers, which could introduce additional uncertainty.

Several FMAT members agreed that the perceived benefits of this approach are more related to development of recreational management measures, rather than allocation between the commercial and recreational sectors. Projected harvest in numbers of fish is already used by the Technical Committee in many ways in the development of recreational measures, but managers could evaluate where it may be beneficial to rely more on numbers of fish in the recreational specifications setting process, such as in the evaluation of the performance of management measures. This would be more appropriate for a separate process from this amendment.

3. Allocations attempting to maintain roughly status quo commercial harvest and recreational management measures compared to the years before the most recent stock assessments were incorporated into management

This concept is designed to allow for approximately status quo commercial landings and recreational management measures compared to 2018 (for summer flounder) or 2019 (for scup and

black sea bass), which are the years prior to catch limit revision based on stock assessments incorporating the new MRIP information. This approach would not result in status quo allocations in terms of the percent allocated to each sector, and it also would not guarantee status quo measures indefinitely. This approach has not been thoroughly developed. The FMAT discussed it as a concept and staff showed some preliminary example allocation percentages.

The most recent assessments incorporating the revised MRIP data took place in 2018 (for summer flounder) and 2019 (for scup and black sea bass), with revised catch limits applied in the following years. For summer flounder, this resulted in a 49% increase in the commercial quota and RHL in 2019. Despite the increase in the RHL, the recreational management measures could not be liberalized because the revised MRIP data showed that the recreational fishery was already harvesting close to the increased RHL. A similar situation occurred for black sea bass after the 2019 operational stock assessment. That assessment resulted in a 59% increase in the black sea bass commercial quota and RHL. Status quo recreational measures for black sea bass were expected to result in an overage of the increased 2020 RHL; however, the Council, Board, and NMFS agreed to maintain status quo recreational management measures for 2020 to allow more time to consider how to best modify recreational management in light of the new MRIP data. For scup, the 2019 operational stock assessment resulted in a decrease in the commercial quota (-7%) and RHL (-12%) in 2020 compared to 2019. Status quo recreational measures for scup in 2020 were maintained based on similar justifications described above for black sea bass as well as the expectation that the commercial fishery would continue to under-harvest their quota.

Given these circumstances, it may be possible to modify the allocations for all three species such that commercial landings and recreational management measures could remain similar to pre-2019 levels for summer flounder and pre-2020 levels for scup and black sea bass (i.e., the years prior to implementation of the most recent stock assessments for all three species), at least in the short term.

FMAT comments and recommendations:

The FMAT reviewed preliminary calculations of potential allocations under this approach. Preliminary calculations attempted to allow for RHLs which were close to the average recreational harvest (under the revised MRIP estimates) during 2018-2019 (years with roughly status quo measures for all three species) and commercial quotas which were close to 2018 commercial landings for summer flounder and 2019 commercial landings for black sea bass and scup (i.e., the years prior to implementation of quotas based on the most recent assessments). A two-year average was used to define status quo for the recreational sector to account for variation in recreational harvest under constant management measures. A single year was used to define status quo for the commercial fishery because the commercial sector landings are generally very close to the commercial quota for summer flounder and black sea bass. For scup, commercial landings have been below the quota since 2007. A two-year average may be more appropriate for the scup commercial fishery and could be considered in future refinements of this approach. This example approach calculated landings-based allocations for summer flounder and black sea bass and catch-based allocations for scup, consistent with the current allocations. The resulting allocations are shown in the table below. It should be emphasized that these are preliminary example allocations

and this method should be further refined if this type of alternative is to be retained in the amendment.

Table 5: Example allocations which could allow status quo commercial landings and recreational management measures for upcoming years compared to 2018 for summer flounder and 2019 for scup and black sea bass. The examples shown below assume the summer flounder and black sea bass allocations remain landings-based and the scup allocation remains catch-based.

Sector	Summer flounder	Scup	Black sea bass
Commercial	**43%**	**54%**	**34%**
Recreational	**57%**	**46%**	**66%**

One FMAT member questioned how this would be different than using 2018 as the base year for summer flounder allocation and 2019 as the base year for scup and black sea bass allocations. Another FMAT member calculated example scup allocations using 2018-2019 as the base years, which changed each sector's allocation by 4% compared to the example above. She agreed to calculate example allocations using 2018 as the base year for summer flounder and 2018-2019 for black sea bass for comparison after the meeting.

The FMAT supported continued exploration of this concept, but noted that the resulting percentages may not differ substantially from other options currently under consideration. In addition, as the example calculations suggest, it may result in substantial modifications to allocations. This would be of concern if the ABCs were to decrease in the future as it could require notable reductions in the commercial fishery, which would go against the intent of this approach.

A member of the public asked for confirmation that this would not allow the commercial sector to retain the increase in quota they received for summer flounder and black sea bass from incorporating the new MRIP data into the assessment. Staff confirmed that this is the case given that this approach would attempt to maintain roughly status quo landings levels from prior to the assessment updates. The member of the public noted that this is almost the same as saying only the recreational sector should get an increase and he could not support this approach. He also questioned what it would mean for each sector if total catch limits were to decrease in the future.

4. Recreational sector separation

The FMAT emphasized that separate allocations for the for-hire sector and private anglers should be presented as a distinct, though potentially related, concept from separate management measures for the two recreational sectors. A clear distinction should be made between developing a policy for separate management measures versus allocating quota between two sub-sectors. The implications of each approach in practice need to be thought through carefully and conveyed to the public. Considerations for each approach are summarized below.

4.1 Separate sub-allocation of the recreational annual catch limit or recreational harvest limit to for-hire sector and private anglers

MRIP catch data could be used to define allocation percentages for the party/charter and private recreational sectors (**Table 6**); however, this is just one example of the several possible ways to look at these splits as discussed below.

Table 6: Example approaches to calculating separate sub-allocations to private and for-hire sectors, based on current base years, post-rebuilding years, and recent years. These percentages are based on MRIP total catch in numbers of fish, including harvest and live discards. See FMAT notes regarding other data that could be explored for these allocations.

	Approach	Years	Private %	For-Hire %
Summer flounder	Base years (no data for 1980)	1980-1989	91%	9%
	5 years post rebuilt declaration	2012-2016	96%	4%
	5 most recent years	2014-2018	96%	4%
	10 most recent years	2009-2018	97%	3%
	15 most recent years	2004-2018	97%	3%
Scup	Base years	1988-1992	92%	8%
	5 years post rebuilt declaration	2010-2014	92%	8%
	5 most recent years	2014-2018	94%	6%
	10 most recent years	2009-2018	93%	7%
	15 most recent years	2004-2018	93%	7%
Black sea bass	Base years	1983-1992	74%	26%
	5 years post rebuilt declaration	2010-2014	93%	7%
	5 most recent years	2014-2018	92%	8%
	10 most recent years	2009-2018	93%	7%
	15 most recent years	2004-2018	92%	8%

FMAT comments and recommendations:

There are different potential data inputs for private vs. for-hire fisheries. A few scoping comments suggested using Vessel Trip Report (VTR) data to establish an allocation for the for-hire sector. One FMAT member said catch in numbers of fish in the VTR data is usually lower than the MRIP for-hire estimates. He also noted that only catch and harvest in numbers of fish are available from VTRs, while MRIP also provides estimates in weight. This would require either establishing allocations based on numbers of fish, developing a method to estimate weights of harvested and discarded fish from the numbers reported on VTRs, or adding a required data field for weight to the VTR electronic forms.

Another FMAT member reminded the group that some state vessels are not required to submit VTRs and cautioned that data from these groups would be missing if VTRs are used to determine for-hire allocations. There could also be a difference in the accuracy of VTRs from smaller charter boats compared to large party boats given that captains of larger party boat vessels are not as able to keep track of harvest and especially discards compared to smaller vessels.

The FMAT also noted that the development of separate allocations for the for-hire and private/rental sectors would require the development of sector-specific accountability measures, assuming the allocation is some form of a sub-allocation of the ABC or ACL, rather than a harvest target of some kind.

4.2 Create policy for development of separate management measures for for-hire vs. private rental (without separate allocation of ACL or RHL)

Rather than creating a separate allocation for the for-hire sector, several scoping comments supported separate management of the for-hire sector by setting different management measures to account for the differing priorities of and data sets for-hire vs. private anglers.

FMAT comments and recommendations:

The FMAT agreed that this concept should be considered further. Separate management measures by recreational sector are currently used in a limited manner. For example, in some states, there are different scup possession limits to the for-hire sector at certain times of year. If there is interest in a broader application of this approach, it would be beneficial to develop a policy on how separate measures are developed, how accountability is evaluated, and how necessary adjustments to measures are applied to both sectors. Stakeholders who support this concept may not support it if MRIP is used for both sectors to analyze and evaluate measures. Uncertainty in the data by mode should be considered. National Standard 4 requirements regarding fairness and equity should also be considered.

5. "Harvest control rule" based approaches

The FMAT discussed a proposal submitted by six recreational organizations, which is summarized below (see comment starting on page 146 of the final scoping comment summary). Under this approach, recreational "allocation" is not defined as a set percentage of the total catch limit but as a specific combination of bag/size/season limits preferred by recreational fishermen in each state, which would become more restrictive when estimated biomass changes declines below the target level. The restrictions would occur in a pre-determined, stepwise manner. The commercial "allocation" would be the commercial quota preferred by the commercial industry when biomass is high and it would be reduced as biomass declines below the target level in proportion with the restrictions on the recreational fishery. This approach is largely conceptual at this stage and is not yet associated with specific proposed measures.

FMAT comments and recommendations:

The FMAT noted that while this approach is an intriguing and creative way to approach setting recreational measures, it is not clear that this proposal as currently configured is directly related to the allocation of catch between the commercial and recreational sectors. The FMAT believes that such an approach may be more appropriate for a separate action or a process like the ongoing recreational reform initiative. The FMAT supports further exploration of the idea in the near-term to see if the concept can be adapted to address the purpose and need of this action.

The FMAT's main question regarding this proposal is how it would fit within the current Magnuson Stevens Act requirements for catch limits and accountability measures. Representatives of the organizations who proposed this approach state that it "redefines allocation" for the recreational fishery not as a poundage or percentage amount, but as a level of access defined by recreational bag limits, size limit, and seasons. The FMAT does not believe this definition is consistent with Magnuson requirements for annual catch limits to prevent overfishing, unless the set of recreational measures are clearly associated with a projected catch level. Without a change to the requirements of Magnuson, the FMAT notes that any approach like this would still have to fit within the requirements of constraining catch to an ACL, and have accountability measures associated with that ACL. It was also noted that it could be challenging to associate different sets of recreational measures with levels of projected catch, considering that even when recreational measures have remained fairly similar across years, the resulting MRIP estimates can vary significantly.

The FMAT noted that something like this could possibly be explored for potential application in another part of the specifications process such as the development of recreational management measures.

One FMAT member was concerned about the recommended stepwise approach and noted that near the thresholds between each step there will be political pressure to set measures at the higher level of access, and this could be especially problematic if the steps between measures are large. He suggested that it would be better to formulate this more like the Council risk policy where the probability of overfishing changes linearly with biomass up to a certain point. Another point raised is that regional differences in availability and measures would need to be considered, which could add additional challenges for this approach.

The proposal suggests that there is a limit to how much access each sector “needs” (e.g. there is a range and maximum amount of fish that recreational anglers will want to take home, and there is a limit to where profit will be maximized for the commercial fishery). One FMAT member suggested that it could be possible to define those limits and use them to calculate a ratio off of which to base the sector allocations, and then apply a harvest control rule approach after that. Another FMAT member said if this approach were used to develop allocation percentages, similar concerns about equity expressed for other approaches could also be relevant.

6. Recreational accountability alternatives

The theme of increased recreational accountability was prominent in many scoping comments. For example, some comments suggested more frequent recreational overage paybacks and bringing back recreational in-season closures.

FMAT comments and recommendations:

More frequent recreational overage paybacks and in-season closures for the recreational fishery would represent a reversal of changes made through the Omnibus Recreational Accountability Amendment (Amendment 19 to this FMP, adopted in 2013). Much of the rationale for the changes

made through Amendment 19 remains valid. For example, the timing of recreational data availability still poses challenges for in-season closures.

The FMAT noted that although some aspects of accountability could be incorporated into the development of allocation alternatives, major changes to the accountability measures and system of overage paybacks would potentially delay development of this action.

7. Recreational catch accounting alternatives

Examples of recreational catch accounting changes recommended through specifications include mandatory private angler reporting through eVTRs or other smart phone apps, issuing tags to anglers for a specified number of fish per season, mandatory tournament reporting, requiring VTRs for all for-hire vessels (not just federally-permitted vessels), and reinstating "did not fish" reports for the for-hire sector.

FMAT comments and recommendations:

Many of the ideas suggested though scoping have the potential to reduce uncertainties in the recreational data; however, they have tradeoffs associated with increasing the reporting burden on the recreational fishery and potential enforceability/compliance challenges for some approaches. One FMAT member discussed issues related to self-reporting. He noted that there seems to be a sentiment that the for-hire VTRs are not accurate because they are self-reported. MRIP is also investigating how self-reporting can be used for private anglers. He suggested that the FMAT not endorse using self-reporting until MRIP weighs in on that. Another FMAT member pointed out the need to think about what is realistic within the scope of this action and what the Council and Board could take on through other actions. Major initiatives to supplement or modify the current catch accounting systems are likely beyond the scope of this action as currently defined and would delay the amendment timeline.

A member of the public commented that the Council needs to continue the type of accounting that they have done for the past 10 years where if a species is not overfished and total catch is below the ABC but there is an overage, the sector which caused the overage is not penalized. In addition, there are "extra fish" built into the system because of the buffer between the OFL and the ABC. In this sense, the allocation percentages are not so important. He added that when there are "extra fish" (e.g., an OFL underage), neither sector should be penalized with restrictions.

8. Dynamic allocation approaches and options for future modification

The Council and Board could consider approaches that make the allocations more dynamic instead of fixed indefinitely. Consideration could be given to moving average approaches, trigger mechanisms, and allowing for allocations to be changed via a framework/addendum process. Note that the Council already has an allocation review policy[2], where allocations will be reviewed at least every 10 years.

[2] https://www.mafmc.org/s/MAFMC-Fishery-Allocation-Review-Policy_2019-08.pdf

FMAT comments and recommendations:

One FMAT member recommended consideration of a trigger approach. Under this approach, catch up to a specified ABC level would be allocated to each sector using one set of allocation percentages (e.g. the current allocations or other percentages) and any additional allowable catch above that level would be divided differently between the sectors. For example, if a higher percent of the surplus were allocated to the recreational sector, this could address some concerns that it is harder to constrain the recreational fishery in times of high availability. Other FMAT members supported including this in the scope of alternatives. One FMAT member noted that the concept helps address concerns and suggestions from the public during scoping.

The FMAT noted that allowing allocation changes through frameworks/addenda would allow for a more expedient process, but this would also reduce public input on a very contentious issue. Managers could consider allowing for explicitly temporary adjustments through a framework/addendum if appropriate. One FMAT member pointed out that even if it were an option to use a framework, the Council could still decide it is more appropriate to use an amendment if significant changes are being proposed. Being able to use frameworks could be a helpful tool in the toolbox if the changes are more minor.

9. Allocation transfers and set-asides

9.1 Allow for allocation transfers between sectors

This could be achieved through specifications or on an as-needed basis via management action, possibly defined as up to a certain percentage of the ABC or defined as a flat value in pounds.

FMAT comments and recommendations:

This could reduce the likelihood of either sector under-harvesting their landings limit, which could put additional fishing pressure on the stock over the long-term. Overall, FMAT members felt this concept should be included in the scope of alternatives at this stage. A member of the public stated that they were comfortable with quota transfers between sectors as a short-term fix, particularly for scup.

9.2 Allow one sector to buy allocation from another

Some scoping comments discussed allowing for-hire vessels to buy commercial quota, for example.

FMAT comments and recommendations:

One FMAT member noted that there is currently a lack of infrastructure to manage this type of system. A similar approach was not included in the ongoing commercial black sea bass state allocation addendum/amendment, largely for this reason. Multiple FMAT members recommended not moving forward with this type of alternative.

9.3 Allow a certain amount of allocation to be set aside through specifications to address unforeseen circumstances

This could be defined as a buffer up to a certain percentage of the ABC or defined as a flat value in pounds. This could help mitigate potential overages in either sector.

FMAT comments and recommendations:

There were some concerns about equity for this approach depending on how it would work. For example, would the commercial sector be able to use a buffer? Allocation that is set aside could be more likely to be used by the recreational fishery, which is not as easily held to its limits. Commercial stakeholders may view this option as a de-facto allocation increase for the recreational fishery. However, one FMAT member noted that recreational management measures would still need to be designed to constrain harvest to the RHL which is calculated after the set aside is removed. FMAT members supported including this in the scope of alternatives for further development.