MARINE FISHERIES ADVISORY COMMISSION
BUSINESS MEETING AGENDA
10:00 AM
Tuesday, May 16, 2023
DMF South Shore Field Station at SMAST
836 S. Rodney French Blvd
New Bedford, MA 02744

1. Introductions, Announcements and Review of May Agenda (10:00 – 10:15)
2. Review and Approval of March 2023 Draft Business Meeting Minutes (10:00 – 10:30)
3. Comments (10:30 – 11:00)
    a. Chairman
    b. Law Enforcement
    c. Director
4. Action Items (11:00 – 1:30)
    a. Horseshoe Crab Management
    b. Summer Flounder Management
    c. Menhaden Management
    d. Groundfish Maximum Retention and Electronic Monitoring Exemption
5. Discussion Items (1:30 – 2:15)
    a. Interstate Fisheries Management Update
        i. Emergency Action on Striped Bass
        ii. Review of May ASMFC Meeting
        iii. Atlantic Bonito Minimum Size
        iv. Smooth Dogfish Trip Limits
    b. Update on Ongoing Rule Making and Future Public Hearings
    c. Federal Fisheries Management Update
6. Other Business (2:15 – 2:30)
    a. Commission Member Comments
    b. Public Comment
7. Adjourn (2:30)

All times provided are approximate and the meeting agenda is subject to change. The MFAC may amend the agenda at the start of the business meeting.

There will be a short recess with a working lunch served following the conclusion of actions on horseshoe crabs.

Future Meeting Dates

June 13, 2023
Katharine Cornell Theater
Tisbury Town Hall
51 Spring Street
Tisbury, MA 00568

MARINE FISHERIES ADVISORY COMMISSION
March 21, 2023
Via Zoom

In attendance:
Marine Fisheries Advisory Commission: Raymond Kane, Chairman; Michael Pierdinock, Vice-Chairman; Kalil Boghdan; Shelley Edmundson; Bill Amaru; Bill Doyle; Arthur "Sooky" Sawyer; Tim Brady; and Lou Williams.

Division of Marine Fisheries: Daniel McKiernan, Director; Mike Armstrong, Deputy Director; Bob Glenn, Deputy Director; Kevin Creighton, Assistant Director; Story Reed, Assistant Director; Jared Silva; Julia Kaplan; Nichola Meserve; Melanie Griffin; Stephanie Cunningham; Anna Webb; Kelly Whitmore; Wendy Mainardi; Matt Ayer; Sam Truesdell; Kristen Thiebault; and Derek Perry.

Department of Fish and Game: Ronald Amidon, Commissioner

Massachusetts Environmental Police: Major Chris Baker; Lt. Matt Bass

Members of the Public: Beckie Finn, Gerry O'Neill, Phil Coates, Bill Sargent, Eric Morrow, Dan Smith, Sharl Heller, Lizzie Roche, and Keith.

INTRODUCTIONS AND ANNOUNCEMENTS

Chairman Ray Kane called the March 21, 2023 Marine Fisheries Advisory Commission (MFAC) business meeting to order.

REVIEW OF MARCH 21, 2023 BUSINESS MEETING AGENDA

Ray Kane stated he would like to amend the agenda to handle all discussion items prior to upcoming emergency rule making measures for recreational fisheries. **Mike Pierdinock made a motion to amend the agenda accordingly. Bill Amaru seconded the motion. A roll call vote was taken and the motion passed unanimously.**

REVIEW AND APPROVAL OF FEBRUARY 13, 2023 DRAFT BUSINESS MEETING MINUTES

Chairman Kane asked for a motion to approve the February 13, 2023 draft business meeting minutes. **Sooky Sawyer made the motion to approve the December 20, 2022 business meeting minutes. Shelley Edmundson seconded the motion. A roll call vote was taken and the motion passed unanimously.**

CHAIRMAN'S COMMENTS

Chairman Ray Kane thanked everyone for their attendance. Ray also mentioned the upcoming Massachusetts Lobstermen's Association's (MLA) Annual Weekend and Tradeshow ("Annual Weekend") on March 25 and March 26 in Hyannis. Ray encouraged MFAC members to attend. He then turned the floor over to the Commissioner Amidon.

COMMISSIONER'S COMMENTS

Commissioner Ron Amidon thanked Wendy Mainardi and Story Reed for their work on at Seafood Expo North American, a seafood show held annually at the Boston Convention and Exhibition Center. Ron noted he planned to attend the MLA Annual Weekend.

LAW ENFORCEMENT COMMENTS

Lt. Matt Bass handled the comments for the Massachusetts Environmental Police (MEP). He stated they are in the process of hiring fourteen officers and are currently conducting interviews. Additionally, MEP has finished gear removal work to protect right whales and wasnow monitoring activity around them in state waters.

Kalil Boghdan asked about MEP staffing levels once the 14 new officers are onboarded. Lt. Bass stated this would bring the ranks up to about 90 officers.

Ray Kane commended fixed gear fishers for removing the gear from state waters in advance of the closure.

DIRECTOR'S COMMENTS

Director Dan McKiernan mentioned that DMF is looking forward to the MLA Annual Weekend and stated that DMF staff will be conducting a roundtable discussion with industry and MEP. The Atlantic States Marine Fisheries Commission (ASMFC) was currently conducting a public comment period on a draft addendum to the fishery management plan (FMP) that sought to introduce management measures to enhance stock resiliency. He anticipated this would be a point of discussion and contention with industry at the trade show.

Dan discussed DMF's Derelict Gear Task Force. The Task Force was convened last summer to develop a white paper analyzing how to improve the state's framework for the management and removal of derelict fishing gear. The task force is comprised of DMF and DFG staff; industry representatives, including MFAC members; and the conservation community. The task force completed its draft white paper and it was currently under review internal executive branch review.

Sooky commended DMF staff for their work on the white paper and thanked Dan for adding an in-person public hearing in Quincy regarding the ASFMC's lobster resiliency addendum. Lou Williams expressed concern over a potential gauge increase proposed in the addendum.

DISCUSSION ITEMS

Federal Fisheries Management Update

Melanie Griffin briefed the MFAC on recent happenings at the New England Fishery Management Council (NEFMC). The briefing focused on: (1) continued efforts to address sea scallop access to the Northern Edge habitat management area on Georges Bank; (2) the NEFMC risk policy working group; (3) science and statistical committee meetings on Amendment 23 to the Northeast Multispecies FMP and ecosystem based management; (4) an Enforcement Committee meeting to review on-demand fishing gear research by the Northeast Fisheries Science Center, (5) the draft Atlantic salmon aquaculture framework, gillnet interactions with protected species, and law enforcement priorities; and (6) the Loper Bright v. US Secretary of Commerce case likely proceeding to the Supreme Court.

Sooky Sawyer expressed concern regarding the opening of the Northern Management Area and the potential for gear conflicts between trap fishers and scallopers. Melanie stated this was an issue being considered by the NEFMC. Chairman Kane and Melanie discussed prior agreements between user groups regarding access and gear conflicts, and Melanie indicated she would provide the relevant information to the MFAC.

Mike Pierdinock briefly discussed NEFMC meetings he attended regarding climate change and geographic shifts in stock distribution. Mike P. asked if DMF were aware of whether guidance documents would be provided at the Northeast Regional Climate Center meeting in May. Nichola indicated NOAA Fisheries would be providing such documents.

Dan McKiernan concluded the NEFMC discussion by stating that John Pappalardo and Jackie Odell were the primary candidates recommended to fill the open NEFMC seats.

Protected Species Management Update

Bob Glenn provided the MFAC with an update on protected species management issues. In February 2023, DMF submitted to NOAA Fisheries a draft Habitat Conservation Plan (HCP) for reducing impacts to right whales, leatherback turtles, and loggerhead turtles in the Massachusetts' mixed species trap/pot fishery. The federal review process will require a National Environmental Protection Act (NEPA) analysis and may take up to one-year. Once finalized, the HCP will serve as the basis for DMF's Incidental Take Permit application.

Bob Glenn then discussed DMF's gear retrieval program within the seasonal fixed gear closure to protect right whales. He provided the number of buoy lines and traps retrieved this year compared to last year, as well as maps that compared gear density.

In summary, there was far less gear left in the closure this year as compared to last year and it was comprised mostly of single trap gear. Bob Glenn concluded his comments by thanking MEP and the contracted fishermen who help DMF with the work.

DMF submitted a petition to the Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NHESP) to delist humpback whales under the Massachusetts Endangered Species Act (MESA). This follows a 2016 federal action by the Obama Administration to federally delist humpback whales, as the population was not found to be at risk of extinction, mortalities continue to be below potential biological removal, the stock continues to grow, and high abundance has provided resilience to anthropogenic mortality. Review of this request by NHESP is pending.

The Southeastern Massachusetts Pine Barrens Alliance also petitioned NHESP to list horseshoe crabs as a species of special concern under MESA. He briefly discussed the petition and added that DMF was conducting an internal analysis of it and would consult with NHESP on the subject.

Kalil Boghdan stated he is glad DMF is reviewing was reviewing the MESA petition for horseshoe crabs and expressed the importance of hearing concerns from stakeholders.

<u>Update on Grant Programs for Gear Marking, Vessel Trackers, Resiliency, and Atlantic Herring Disaster Relief</u>

Gear Marking Grant Program
Dan McKiernan briefly discussed gear marking grant programs and asked Kevin Creighton to speak to the issue. Kevin stated applications were mailed out in February for grants to help cover second sets of buoy lines for fishers who fish in state and federal waters. The application period closes April 1.

Vessel Trackers
Dan then discussed vessel trackers, which are now required for all federal lobster trap fishers. VMS are not sufficient to meet this requirement, as the trackers must have a higher ping rate. Many of the devices use cellular technology allowing them to be more affordable than satellite technologies, including VMS. DMF is administering a grant program to assist in the acquisition of these devices. $1,500 will be earmarked per eligible fisher to cover the cost of the unit and several years of service.

Lou Williams asked if he will need a vessel tracker where he has VMS already installed. Dan McKiernan stated he will need to have the vessel tracker given the ping rate requirements for the lobster fishery. Lou then asked if it would require power like VMS. Story Reed stated DMF will follow-up with the power specs, but he believed it runs directly off the battery, does not need to be turned off and on, and requires little power.

Sooky Sawyer asked if the device vendors are able to keep up with demand. Story Reed stated that they currently have enough units. Story noted that Massachusetts

rolled out this program in advance of other states (e.g., Maine) to manage potential supply issues.

Environmental Resiliency Grants
Story Reed discussed environmental resiliency grants and proposals were currently under final DMF review. He expected a wide variety of projects would be approved.

Atlantic Herring Disaster Relief
Several years ago, New England governors—including Governor Baker—requested the federal government issue a disaster declaration for the sea herring fishery. This disaster request was issued and Congress appropriated relief funding. States are currently implementing a disaster relief program. Dan expected payouts would occur later this spring or summer to commercial fishers and dealers.

Shellfish Advisory Panel Meeting Summary
Dan McKiernan described the origin and the makeup of the Shellfish Advisory Panel. He then gave a summary of the of the topics discussed at the virtual March 2, 2023 business meeting.

DMF determined not to pursue a pilot program to expand bulk tagging opportunities for shellfish aquaculturists this year given concerns this would just shift enforcement and compliance burdens from the harvester to the dealer. Certain SAP members objected to this action and DMF agreed to continue discussions on the subject. DMF met with the Department of Environmental Protection to continue discussions regarding challenges state regulated commercial fisheries are facing related to the use of the Wetlands Protection Act to restrict and permit certain fishing activities (e.g., hydraulic surf clam and ocean quahog dredging) in wetlands resource areas. DMF will convene a sub-committee of SAP members to analyze municipal aquaculture permit transfer rules with the goal of potentially recommending best practices. DMF and DPH discussed proposals submitted to the Interstate Shellfish Sanitation Conference for review at their upcoming biennial meeting. Lastly, SAP members expressed concerns regarding perceived shortages of seed shellfish; DMF intended to work with the SAP to investigate this issue more thoroughly.

Anticipated Public Hearing and MFAC Meeting Schedule
Jared Silva recalled the draft regulatory proposals discussed at the February MFAC meeting. Initially, Jared anticipated public hearings would have occurred in March, however, due to unforeseen delays in the rule making process, the public hearings are likely to occur in late-April. DMF was moving to adjust the MFAC meeting schedule in response. The April MFAC business meeting would be cancelled and DMF would instead convene the permitting sub-committee. The May meeting would feature votes on DMF's recommendations regarding the upcoming public hearing proposals. To accommodate public interest, the meeting was being moved from the Vineyard to a mainland location. The June meeting would then be held on the Vineyard.

UPCOMING EMERGENCY RULE MAKING FOR RECREATIONAL FISHERIES

Dan McKiernan described why DMF has to rely on its emergency rule making authority to implement annual recreational fishing limits for certain species and how this process differs from normal rule making. Dan then went on to discuss a survey that was distributed by DMF staff to recreational anglers that provided great feedback which contributed to decision making on black sea bass limits.

Scup and Sea Bass

Nichola stated that coastwide states are required to cut recreational black sea bass and scup harvest by 10% coastwide compared to 2022. This is occuring despite robust stock conditions and cuts would have been more substantial if not for the harvest control rule. This is because harvest under status quo management is projected to exceed the recreational harvest limit for these species.

For black sea bass, Massachusetts is achieving this mandatory cut using a state-specific approach. Following a public comment period, DMF prefers increasing the minimum size limit by ½" to 16.5", which would also allow DMF to open the season on the third Saturday of May and add several days to the season in early September. The bag limit will remain at four fish per angler.

For scup, the mandatory cut is being achieved through a regional approach, whereby the states of Massachusetts, Rhode Island, Connecticut, and New York are all implementing the same measures. This regional approach will remove January – April from the open season, increase the minimum size by ½" to 10.5" for vessel-based anglers, and decrease the for-hire bonus season possession limit from 50 fish to 40 fish. Additionally, it will allow states to reduce the shore-based minimum size by ½" to 9.5" to address environmental justice issues, as shore-based anglers tend to have more limited access to larger sized fish.

Table 1. DMF recommended options for recreational scup and black sea bass management in 2023.

SCUP				**BLACK SEA BASS**			
Mode	**Season**	**Bag**	**Size**	**Mode**	**Season**	**Bag**	**Size**
Private Vessels	~~Jan 1 – Dec 31~~ **May 1 – Dec 31**	30 fish*	~~10" min~~ **10.5" min**	Private Vessels, Shore, & For-hire Vessels	~~May 21 – Sep 4~~ **May 20 – Sep 7**	4 fish	~~16"~~ **16.5"**
Shore	~~Jan 1 – Dec 31~~ **May 1 – Dec 31**	30 fish	~~10" min~~ **9.5" min**				
For-hire Vessels	~~Jan 1 – Apr 30~~	~~30 fish~~	~~10" min~~ **10.5" min**				
	May 1 – Jun 30	~~50 fish~~ **40 fish**					
	Jul 1 – Dec 31	30 fish					

* 150 fish/vessel maximum

Nichola welcomed questions from the Commission.

Kalil Boghdan asked about the processes in decision-making at ASMFC. Nichola and Dan elaborated on the processes as well as bonus seasons.

Mike Pierdinock expressed disappointment over the mandatory harvest reduction for both scup and black sea bass given stock conditions. Mike P. stated that the commercial scup fishery only catches about 40% of their quota, and he recommended DMF petition ASMFC and MAFMC for flexibility regarding transfers of catch allocation between the commercial and recreational fisheries. Nichola recommended a letter be written to the Mid-Atlantic Fishery Management Council requesting the change. Dan stated that DMF will write a letter. He was interested in pursuing this action given the commercial scup quota will likely stay under-utilized at its current elevated level due to market conditions and management.

With regards to black sea bass, Mike Pierdinock expressed concerns regarding the impact DMF's preferred option would have on the for-hire fleet. He stated the for-hire fleet strongly favored a split-mode approach, particularly so-called "Option 6" presented during public scoping. Tim Brady and Bill Amaru supported split-mode management given they make income off the resource and higher limits make their services more marketable.

There was then some discussion among Chairman Kane. Mike P., and DMF staff regarding climatic conditions shifting stock distribution and how this is impacting resource availability and management.

Kalil Boghdan asked about what options other states were considering. Nichola then presented tables with options being presented in other northern region states—Rhode Island, Connecticut, and New York.

Dan asked if there were any objections to DMF moving the proposals to emergency action. Mike P. reluctantly agreed to support Option 1 and hopes that his earlier comments will be taken into consideration for next year. Overall, the MFAC ultimately supported DMF's proposed measures.

<u>Cod and Haddock</u>
Melanie provided a brief background surrounding federal rulemaking for Gulf of Maine (GOM) cod and haddock and Georges Bank (GB) cod. The NEFMC recommended NOAA Fisheries adopt the fishing limits described in the table below for the upcoming May 1, 2023 – April 30, 2024 fishing year. NOAA Fisheries was currently reviewing the recommendation and was expected to publish draft rules for comment shortly. DMF intended to match federal rules once they were announced.

Stock	Mode	Season	Bag Limit	Size Limit
Gulf of Maine Cod	All Anglers	**September 1 – October 31** ~~**April 1 – April 14**~~ ~~**September 1 – October 7**~~	1 fish	22"
Georges Bank Cod	All Anglers	**May 1 – May 31** **September 1 – April 30** ~~**August 1 – August 30**~~	5 fish	**23"** ~~**22" to <= 28"**~~
Gulf of Maine Haddock	All Anglers	May 1 – February 28 April 1 – April 30	**15 fish** ~~**20 fish**~~	**18"** ~~**17"**~~

Mike P. was interested in catch estimates for GB cod and how they compared to prior years. He had heard catch of cod was diminished this past year given season, bag limit, and size limit adjustments. Melanie stated she would look at the data and follow up with Mike.

Mike P. was also concerned about federal rule making timelines given the substantial delays in implementation that occurred in 2022. Melanie stated that DMF would likely comment on proposed federal rules and would underscore the importance for timely rule making. However, she did not anticipate similar substantial implementation delays this year.

PRESENTATION ON DMF CIRCLE HOOK STUDY

Deputy Director, Dr. Mike Armstrong provided the MFAC with a presentation regarding DMF's striped bass release mortality study, a striped bass citizen science program, and an update on 2022 recreational striped bass harvest.

Mike Pierdinock asked for the information on the citizen scientist program so he couldhelp get the word out.

Mike P. Mike A. and Chairman Kane discussed striped bass harvest and catch, how 2022 data compared to prior years, and the accuracy of MRIP estimates.

Kalil Boghdan expressed concern over the status of the striped bass stock and poor recruitment in recent years. He asked what management practices would need to be put in place to preserve the species. Mike A. stated recreational management cannot account for participation and can only control for harvest. This limits management tools to seasons, bag limits and size limits. Mike A. also expressed concerns regarding recent poor recruitment. However, he could not predict how this may impact management moving forward. Kalil advocated for a proactive management approach.

Chairman Kane recommended the recreational striped bass fishery suggest solutions to the ASMFC's Striped Bass Management Board.

OTHER BUSINESS

Commission Member Comments
Tim Brady thanked everyone and stated he is happy to be back attending Commission meetings.

Kalil Boghdan appreciated how everyone conducted themselves today.

Mike Pierdinock highlighted public comment periods regarding bluefin tuna.

PUBLIC COMMENTS

Eric Morrow stated he is a for-hire fisherman and was concerned about the state's management of the recreational scup and black sea bass fisheries. He expressed various concerns regarding public scoping meetings held via Zoom; survey distribution techniques; the region-wide approach to scup management; DMF's preferred management option for black sea bass; and a general lack of understanding of the for-hire industry by DMF.

ADJOURNMENT

Chairman Ray Kane requested a motion to adjourn the March MFAC business meeting. **Sooky Sawyer made a motion to adjourn the meeting. The motion was seconded by Tim Brady. The motion was approved by unanimous consent.**

MEETING DOCUMENTS

- March 2023 MFAC Agenda
- February 2023 Draft MFAC Meeting Minutes
- Emergency Scup and Sea Bass Regulations Presentation and Proposal
- Scoping Comments for Black Sea Bass and Scup
- Summary of Testimony from Public Scoping Meeting
- Summary of DMF Black Sea Bass Survey Results
- Emergency Cod and Haddock Regulations Presentation and Proposal
- NEFMC Update Presentation
- Protected Species Update Presentation
- March 2023 Shellfish Advisory Panel Meeting Summary

UPCOMING MEETINGS

May 16th, 2023
9AM
DMF's South Coast Field Station
836 S. Rodney French Blvd
New Bedford, MA

June 13th, 2023
9AM
Katharine Cornell Theatre
51 Spring St
Vineyard Haven, MA

The Commonwealth of Massachusetts
Division of Marine Fisheries

(617) 626-1520 | www.mass.gov/marinefisheries

MAURA T. HEALEY, Governor | KIMBERLEY DRISCOLL, Lt. Governor | REBECCA L. TEPPER, Secretary | THOMAS K. O'SHEA, Commissioner | DANIEL J. MCKIERNAN, Director

MEMORANDUM

TO: Marine Fisheries Advisory Commission (MFAC)

FROM: Daniel J. McKiernan, Director

DATE: May 10, 2023

SUBJECT: **Recommendation on Commercial Horseshoe Crab Management**

This memorandum contains my recommendations regarding the management of the horseshoe crab fishery. This includes fishery management actions requiring approval of the Marine Fisheries Advisory Commission (MFAC)[1], as well as permitting[2] and reporting[3] measures, which do not require formal MFAC approval. However, on the permitting and reporting recommendations, I seek the MFAC's input and am hopeful these are viewed as consensus positions. Before laying out my recommendations, I wanted to generally discuss the management of horseshoe crabs in Massachusetts, DMF's regulatory proposals, and the public comment received.

The Atlantic States Marine Fisheries Commission's (ASMFC) most recent stock assessment (2019) for horseshoe crabs indicates the northern region (RI-ME) stock improved from poor condition to neutral condition compared to the 1998 baseline. This improvement was driven largely by Massachusetts' indices. DMF's spring and fall trawl surveys show improving abundance of horseshoe crabs north and south of Cape Cod both in terms of stratified number of horseshoe crabs caught per tow and (Figure 1 and Figure 2) and percentage of tows with horseshoe crabs present (Figure 3 and Figure 4). Additionally, the spawning beach survey continues to show improved numbers along most spawning beaches both north and south of Cape Cod (Table 1).

All along the east coast, one of the most significant threats to Horseshoe crabs is degradation of coastal beaches and loss of spawning habitat. As noted in the 1998 ASMFC management plan:

> *Beach areas provide essential spawning habitat for horseshoe crab adults. In addition, nearshore, shallow water, intertidal, and subtidal flats are considered essential habitat for the development of juvenile horseshoe crabs. Deep water areas are used by larger juveniles and adults to forage for food. Of the habitats used by horseshoe crabs, beaches provide the most critical habitat as this is where spawning and egg deposition occurs. The primary threats to essential habitat include coastal erosion combined with human*

[1] G.L. c 130, §17A requires a majority of the Marine Fisheries Advisory Commission approve all DMF regulations affecting the manner, sizes, seasons, quantities, and areas where fish may be taken.
[2] G.L. c 130, §80 solely authorizes the DMF Director to promulgate rules and regulations relevant to the forms, contents, and use of permits.
[3] G.L. c. 130, §21 authorizes the DMF Director to, "devise a system of statistical information useful to the commercial and recreational fishing industry".

development (particularly shoreline stabilization iv structures such as bulkheads and revetments) along the estuaries of the Atlantic Coast.

DMF's Habitat Program provides comments to permitting agencies concerning all costal alteration projects to raise concern about impacts to horseshoe crabs.

It is my view that DMF and the MFAC have been appropriately managing the harvest of horseshoe crabs to achieve an exploitable biomass that can sustain a fishery with steady and predictable harvest rates. Additionally, our management strategy has benefited from federal closures to the Monomoy National Wildlife Refuge and the Cape Cod National Seashore (Figure 5). However, there is sufficient cause to believe exploitation in our fishery would increase under status quo management given recent trends in the bait fishery (Figure 6) and the introduction of a second biomedical firm (in 2022). As a result, I believe a more precautionary management approach is warranted for several interconnected reasons, which I describe below.

In 2022, biomedical harvest approached 175,000 crabs, substantially higher than in prior years (for which landings are confidential under state law[4] and consistent with the management of fisheries data at the federal level and along the Atlantic coast). Given this harvest, DMF estimates approximately 26,500 crabs died post-bleeding. Fortunately, the bait fishery did not achieve its full quota, offsetting this increased biomedical exploitation. SAFIS dealer data for the 2022 bait fishery indicate reported landings were 134,753 crabs, about 82% of its 165,000-crab quota. As a result, total estimated mortality was about 160,500 crabs. Please note, biomedical mortality estimates are extrapolated by applying the 15% figure used in the stock assessment to total reported biomedical landings, and total mortality figures are extrapolated by adding the estimated biomedical mortality to the bait harvest. Moreover, this discussion of horseshoe crab mortality does not account for pre-bleeding mortality in the biomedical fishery that may occur during harvest, handling, and penning; nor does it account for any sub-lethal impacts of bleeding on horseshoe crabs fitness or spawning activity, which are currently not well understood.

Under status quo management, we should anticipate an increase in horseshoe crab exploitation in future years. This assumption is driven by the expectation that biomedical exploitation would continue to grow and would result in increased biomedical landings and increased reliance on the "rent-a-crab" program[5], which could enhance bait quota utilization. There are two facts that underlie this assumption. First, 2022 biomedical harvest would have been even higher had the new biomedical firm, Charles River Laboratories, been operational at the start of the fishing season. Second, public comment from the biomedical fishery and industry supports a higher biomedical medical quota than the 200,000-crab limit proposed by DMF (e.g., 250,000 – 300,000 crabs). Should this occur—and should bait harvest return to 2018 – 2021 levels (Figure 6) when we approached or exceeded the quota—then our estimated total harvest could exceed 465,000 crabs, with total mortality likely exceeding 200,000 crabs annually. This far surpasses harvest and mortality levels experienced since 2005, when enhanced data collection from the bait and biomedical fishery began.

Horseshoe crabs are a long-lived and slow growing animal, generally reaching maturity around 10-years of age. While our survey trends are strong, we primarily observe animals that are three-to-four years away

[4] G.L. c. 130, §21 requires DMF hold commercial and recreational fishing data collected by the agency "strictly confidential" except that such data may be released "in aggregate or summary for which does not directly or indirectly disclose the identity or business of any person who submits such statistics." To this we apply the so-called "rule of three" which requires any publicly disclosed data summary to include landings from at least three dealers, three harvesters, and three vessels."

[5] Commercial bait fishers are required to sell their horseshoe crab catch to a bait dealer authorized as a primary buyer. These primary purchases are reported by the bait dealer to DMF and count against the state's bait quota. The "rent-a-crab" program allows a biomedical processor to temporarily obtain horseshoe crabs harvested against the bait quota from bait dealer for bleeding prior to sale as bait. This optimizes the utility of a bait crab by allowing its blood to be extracted before use as bait.

from maturity and older in our trawl survey and only mature adults are observed in the spawning beach survey. Unlike the lobster fishery—where we conduct a survey deploying DMF biologists with SCUBA to enumerate young of the year lobsters that has a demonstrated ability to project future recruitment—no similar surveys or indices exist for horseshoe crabs. While egg densities surveys have been conducted in other regions (e.g., Delaware Bay), reviews of these surveys showed they are not predictive of future recruitment given the horseshoe crab's long time-to-maturity and high natural mortality in early life stages. For these reasons, DMF has not committed resources to conducting such surveys in Massachusetts. As a result, we have to wait for adolescent crabs (several years after hatching) to be captured in our trawl surveys to observe any impacts from increased harvest to stock abundance.

Absent an early warning system regarding recruitment, precautionary management is appropriate given we anticipate harvest and mortality would substantially increase under status quo rules. If we wait until our current survey indices show declining trends to take action, it is likely we will have to take more substantial, reactionary measures compared to what is recommended herein. Additionally, we can expect this will heighten existing calls to ban the harvest of horseshoe crabs outright. The public comment received is already requesting this action be taken despite the positive abundance trends seen in our surveys. Moreover, the Southeastern Massachusetts Pine Barren's Alliance has filed a petition with the Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NHESP) to list horseshoe crabs as a species of special concern[6] and across the region we are seeing increased legislative interest in pursuing statutory changes to mandate additional conservation.

I also want to recognize that the management of horseshoe crabs is dissimilar to the management of other fisheries. In most fisheries, we set fishing limits to optimize utilization while preventing overfishing. The challenges we face are typically related to how much fish may be caught and how that catch is allocated among user groups. While we certainly face these challenges in horseshoe crab management (as evidenced by the public comment received), we also have a conservation community that strongly prefer we preserve horseshoe crabs for their perceived ecological, social, and cultural values. This conservation community includes naturalists involved with bird-related tourism, concerned citizens, and environmental NGOs. There is substantial, demonstrated public interest in managing horseshoe crab populations for abundance and not exploitation. DMF received approximately 1,350 written comments from this community during this public comment period—principally in support of a spawning closure that extends into or through June and requesting DMF and the MFAC to completely phase out horseshoe crab bait harvest. DMF also received similar testimony at the well-attended April 24, 2023 public hearing in Plymouth (comment at the Gloucester public hearing was limited to testimony from one trawler who participates in the biomedical fishery).

These issues and concerns underlie my recommendations. I view success in managing this fishery as maintaining a population that can be harvested to meet bait and biomedical demand while promoting an abundant resource that provides cultural value. To achieve this, I believe a more precautionary management approach is necessary at this time. Accordingly, I am recommending prioritizing: (1) the conservation of spawning horseshoe crabs to promote improved recruitment and abundance; and (2) capping total harvest and mortality at near current levels to prevent potential overfishing which we may not detect until the adult population is already in decline.

I am also recommending we reduce the bait quota by 15% as a de facto allocation from the bait fishery to the biomedical fishery. This will allow for some minor expansion of the current biomedical fishery, which is important given the public health interest in Limulus Amebocyte Lysate ("LAL") production. The bait

[6] Southeastern Massachusetts Pine Barrens Alliance. "Proposal to State to List Horseshoe Crabs as Species of Special Concern". *www.pinebarrensalliance.org*. 2023. www.pinebarrensalliance.org/wp-content/uploads/2023/03/HC-Species-Listing-Proposal.02252023.pdf.

fishery should continue to meet demand in the whelk pot fishery at this diminished level, given the declines seen in pot-fishing effort (i.e. traps hauled and traps fished) in the whelk pot fishery over the past 10-years and the likelihood it continues to decrease. Additionally, should spawning protections be implemented, I will consider increasing daily bait harvest allowances in the post-spawning period to ensure bait crab demand is met and bait crabs are available to the biomedical industry through the rent-a-crab program.

Lastly, I am recommending a series of housekeeping, permitting, and reporting measures aimed at improving the transparency of how this fishery is managed and promoting the data being collected to better inform management challenges moving forward.

Extensive discussion of each recommendation and the public comment received regarding the subject follows.

Spawning Closure

I begin my horseshoe crab management recommendations with the spawning closure. It is the proposal that generated the most interest and controversy. It is also the lynchpin of the various conservation and management measures recommended herein.

I recommend the MFAC vote in favor of an April 1 – May 31[7] spawning closure whereby all harvesters (inclusive of bait and biomedical fishers) will be prohibited from possessing, retaining, or landing horseshoe crabs. If approved, this will go into effect in 2024 and will replace the existing five-day lunar closures around each new and full moon between April 16 and June 30. Exempt from this would be pot fishers in possession of horseshoe crabs for bait, provided they can document its lawful source (e.g., bait dealer receipt).

Horseshoe crabs are particularly vulnerable to harvest during the spawning season and have a life history strategy that is prone to localized depletion. Crabs are easily located and removed from the waters edge during the spawning period, particularly during new and full moon tides. With this in mind, DMF enacted lunar closures in 2010. While the lunar closures do afford protection during peak spawning periods, hand harvesters have been able to effectively continue to catch horseshoe crabs along the spawning beaches outside of these closed periods. While we have seen reduced participation in the hand harvest fishery since 2010, landings have remained fairly static with some interannual variability when compared to 2008 and 2009 pre-lunar closure period (Table 4).

DMF's spawning beach survey data show that both north and south of Cape Cod horseshoe crab spawning activity typically begins as early as April, peaks in mid-May, and concludes by mid-to-late June (Figure 7 and 8). According to these data, the recommended closure will protect approximately 80% of spawning females, postponing harvest until after spawning for the vast majority of animals.

The proposed spawning closure was largely supported by the conservation community, which is evidenced by the near 1,350 comments received from these constituents. However, it is noteworthy that many sought additional protections. This included extending the spawning closure until at least June 15. As stated in my February 8, 2023 memorandum, I do not think extending this closure into June is necessary at this time, as it would additionally constrain harvest opportunities for all user groups and would provide little in additional spawning protection. The conservation community also suggested

[7] Please note that further on in this memorandum, I recommend a January 1 – March 31 bycatch allowance limit for horseshoe crabs designed to prevent the regulatory discarding of horseshoe crabs incidentally caught by shellfish dredge boats.

ending the bait fishery and phasing out biomedical harvest, which are well beyond the scope of the proposed regulations.

The proposed closure will also bring us in line with what is occurring in other states. Massachusetts is one of four states—along with Rhode Island, Maryland, and Virginia[8]—to have both a bait and biomedical fishery. Of these four states, the other states' rules governing protection of spawning crabs provide more spawning protection than ours. Rhode Island prohibits bait harvest in May and has lunar closures in May for its biomedical fishery; Maryland prohibits the harvest of females, prohibits horseshoe crab fishing from December 1 – June 8, and bans fishing inside 1-mile from shore from June 9 – July 15; and Virginia prohibits bait harvest within 1,000 feet of shore from May 1 – June 7 and bans the harvest of females in waters east of the COLREGS line (i.e., ocean zone).

When considering these spawning protections, it is unavoidable that one user group—hand harvesters—will be disproportionately impacted. This is because their mode of fishing is to target horseshoe crabs when they are vulnerable to harvest as they stage in the shallows and spawn along the waters-edge. As a result, any spawning protections are going to have de facto allocative impacts, as the management measure will restrict hand harvesters' access to the resource.

Landings data show the hand harvest fishery begins in mid-April, peaks in May, and continues into June; there are nominal landings after July 1. During the most recent five-year time series (2017 – 2021), hand harvesters took 70% of their annual landings during April and May; the remaining 30% were taken after June 1, with nearly all of those landings occurring in June (Table 2 and Table 3[9]). It is unsurprising that peak hand harvest would also occur during the peak spawning period given the fishing strategy. About 20-30 individuals participate in the hand harvest fishery annually and that number has been steadily declining over the past decade (Table 4). Public comment and public hearing testimony from these fishers argue the closure will eliminate their access to the fishery. They further opined that the spring fishery makes up a sizeable amount of their annual fishing income; provides them with an initial seasonal fishing income during the spring; and is a source of economic resiliency, given the many other fisheries restrictions that have resulted in reduced opportunities and access. As stated above, the impacts of spawning closures on hand harvesters are undeniable. I am doubtful access will be eliminated completely, as landings data shows some harvest occurs in June. However, harvest opportunities will be delayed until later in the year and overall harvest will likely be diminished by reduced access to the resource. This will have a proportionate negative economic impact on these fishers.

There are also concerns that the closure will impact the availability of bait to the springtime whelk pot fishery. This was expressed in the public comment by bait fishers, conch potters, and bait dealers.

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[8] It is worth noting here that the harvest of horseshoe crabs in Maryland and Virginia include crabs from the Delaware Bay region. The ASMFC's Horseshoe Crab FMP acknowledges this region is the epicenter of horseshoe crab abundance and spawning activity along the Atlantic coast and horseshoe crab eggs laid in the region provide a crucial food source for migratory shorebirds—particularly the red knot, a species listed as threatened under the Endangered Species Act. Beginning in 2004, the FMP has considered this relationship between spawning horseshoe crabs and shorebirds with regards to the management of Delaware Bay horseshoe crabs. At present, the FMP employs an adaptive resource management framework to set harvest levels for horseshoe crabs in the region given the important ecological role of horseshoe crabs. This is not a required of states outside of the region, including Massachusetts, given the lack of spatio-temporal linkage between horseshoe crab spawning and shorebird migration. Horseshoe crab eggs hatch within four weeks (Botton et al., 2010), and with Massachusetts' spawning surveys showing spawning activity peaks in May and concludes by the end of June, we can expect the eggs to be hatched by late-July. This is before shorebirds, such as red knots, arrive in Massachusetts during their return migration in the late summer and early fall (Harrington et al., 2010). Red knots are considered "unusual" in Massachusetts during their northward spring migration (Harrington et al., 2010).

[9]The data in Table 2 and 3 are parsed out by seasons, rather than monthly, to avoid data confidentiality issues.

Industry testimony explains that the springtime horseshoe crab fishery restocks the supply of crabs held by bait dealers and makes bait available to whelk potters for the April 15 start of their fishing season. Additionally, it limits the need for bait dealers to store and freeze bait over the winter to ensure stock is available for the spring. Prohibiting horseshoe crab fishing in April and May could certainly reduce access to horseshoe crabs as whelk bait early in the season resulting in reduced whelk fishing effort. In turn, this may increase the for bait storage, likely inflate bait costs, or cause fishers to augment their bait use by relying on other non-preferred baits (e.g., green crabs). It is noteworthy that a 2015 DMF survey of whelk potters demonstrates they are only using about one-quarter of a crab per trap, many are using bait reduction devices (e.g., bait cups), and incorporating a mix of bait. These factors work to reduce the quantity of horseshoe crabs needed per pot haul.

With regards to whelk fishing effort generally, we have seen a stark decline in seasonal and annual effort data characterized by the number of pot hauls (Figure 9) and pots fished (Figure 10). This is likely attributable to both the status of the channeled whelk resource—overfished with overfishing occurring[10]—and DMF's ongoing management efforts to raise the gauge size incrementally on a multi-year schedule to eventually protect a proportion of mature females from harvest[11]. It is noteworthy that the whelk pot fishery activity is also bi-modal with high activity in a spring fishery that peaks in June and a more substantial fall season that peaks in October (Figure 10). Figure 10 also shows a near 40% reduction of the number of conch pots fished during the spring period from the peak 2010-2014 time series as compared to the more current 2015 – 2019 time series. Moreover, we are seeing larger reductions in total traps fished during the spring period as compared to the fall period. This is not surprising given that the fishery is recruit dependent and whelks tend to grow very little during the winter months resulting in limited legal-sized catch available in the spring; the fall fishery targets those whelks that were just sub-legal during the spring that grow to legal size throughout the calendar year. Anecdotal reports from harvesters and dealers also indicate there has been a reduction in whelk pot effort during the spring in recent years, particularly 2022.

The state's two biomedical firms—Associates of Cape Cod ("ACC") and Charles River Laboratories ("CRL")—also oppose this action. Both express concerns that this will seasonally limit their access to obtain crabs to produce LAL, as crabs will not be available until June 1 through the biomedical fishery and the rent-a-crab program. ACC adds that such a change would impact their employment model as they rely on having crabs available in the spring to train their seasonal workforce. ACC tends to seek college and graduate students to fill these positions, and if these crabs are not available, then ACC worries they cannot onboard the personnel in May and they will likely lose them to employment elsewhere. Alternatively, ACC suggests a limited harvest model whereby the spawning season is regulated by a sub-quota and lower trip limits.

I do not take this recommendation lightly and understand the potential negative impacts it may have on hand harvesters, the whelk fishery, bait dealers, and biomedical firms. However, I think it is in the best interest of the Commonwealth to move forward with an April 1 – May 31 spawning closure whereby all horseshoe crab harvest is prohibited. With ongoing incremental habitat loss, it is a prudent strategy to provide horseshoe crabs with the advantage of more successful spawning events on our local beaches. I am convinced the lunar closures enacted in 2010 were in part responsible for the recent increases observed horseshoe crab abundance, as seen in our fishery independent surveys. This next step could provide even more recruitment benefits, although it will take many years to detect the success when the adolescent crabs appear in the annual trawl survey.

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[10] Division of Marine Fisheries. "A Stock Assessment of Channeled Whelk in Nantucket Sound, Massachusetts". Technical Report TR-66. *www.mass.gov/marinefisheries*. 2018. www.mass.gov/doc/marine-fisheries-technical-report-66/download.

[11] The whelk gauge size has increased by ¼" from 2 $^{7}/_{8}$" to 3 $^{1}/_{8}$" since DMF initiated gauge increases in 2013. At the industry's request, DMF also delayed the scheduled $^{1}/_{8}$" gauge increase for 2023 until 2024 and amended the schedule so that the gauge increases by $^{1}/_{8}$" every third year, rather than biennially.

As stated earlier in this document, I strongly support taking a precautionary approach to manage this resource to ensure we continue to see increasing abundance and so that we can continue to meet bait and biomedical demand. Enhancing spawning protections—particularly given increased biomedical harvest and the uncertainty regarding the sub-lethal impacts biomedical processing may have on horseshoe crab fitness and spawning activity—is an important management strategy. While the potential impacts of this action cannot be understated, I think it is an important protection to enhance horseshoe crab populations and support the long-term viability of the resource and fishery.

Quota Management

I recommend the MFAC vote to: (1) adopt a biomedical quota of 200,000 horseshoe crabs to be allocated equally among the biomedical processors; and (2) reduce the bait fishery quota by 25,000 horseshoe crabs from 165,000 crabs annually to 140,000 crabs annually. If approved, both changes would go into effect for the 2023 season.

These recommendations aim to manage the commercial horseshoe crab fishery for total mortality by capping harvest and mortality at near present levels. The biomedical quota of 200,000 crabs allows for some growth in the biomedical fishery compared to 2022 (an increase of ~25,000 crabs). Increased exploitation by the biomedical fishery is also offset by a 25,000-crab reduction in the bait fishery quota. This considers the critical importance of LAL production to public health and safety. The reduction in the bait fishery quota would not be extraordinary—it is in line with the 10-year mean for reported landings (Figure 6) and is similar to bait landings in 2022 (134,753 crabs). This reduced quota should be sufficient to meet local bait demand in our whelk pot fishery, particularly given diminished effort (Figure 9 and Figure 10) in terms of pot hauls and increased use of bait reduction techniques (e.g., bait cups and bait mixes). Additionally, I am hopeful that capping biomedical harvest just above 2022 levels will encourage interest and investment by the biomedical firms in the rent-a-crab program as a means for growth in their LAL production. DMF strongly supports the rent-a-crab program because it maximizes the utility of each crab harvested.

The implementation of a biomedical processor quota was not supported by the biomedical industry. ACC plainly state they do not support the biomedical quota, whereas CRL object to the proposal as being "wholly unprecedented". CRL also provides some additional context to their objection, arguing that such a quota is not necessary because there is no indication the biomedical fishery negatively impacts populations. CRL lastly advocate that if a biomedical processor quota is adopted, it should be adopted at a higher level (e.g., 250,000 horseshoe crabs) and it should allow for unused quota to be reallocated among processors if the total quota is not utilized. A biomedical dealer working on behalf of CRL did not object to the quota but did object to it being allocated equally among processors, favoring the quota be managed by the market. Certain biomedical fishers also objected to the proposal and advocated for a higher biomedical quota (e.g., 300,000 crabs), should one be adopted.

The purpose of the recommended 200,000 horseshoe crab quota is to cap harvest and mortality at near current levels. This is being done as a precautionary measure to reduce the likelihood that increased exploitation will negatively impact horseshoe crab abundance. Increasing the available quota above 200,000 horseshoe crabs will result in additional harvest and mortality. Whereas estimated mortality at a 200,000-crab quota is 30,000 crabs, estimated mortality increases to 37,500 horseshoe crabs at a 250,000-crab quota and 45,000 crabs at a 300,000-crab quota. Those represent substantial increases in annual estimated mortality, particularly when compared the period of 2005 – 2021 when harvest and total mortality was relatively stable. Moreover, these mortality estimates do not account for pre-bleeding mortality or any potential sub-lethal impacts of bleeding on horseshoe crab fitness and spawning activity. If we were to adopt a higher value for the biomedical quota, as suggested, then we might need to consider potential deeper offsetting cuts to the bait fishery quota to cap total mortality at near current levels. This would decrease the bait quota well below its ten-year mean, further impacting the bait fishery and bait

availability. Certainly, more science is needed to better understand the lethal and sub-lethal impacts of biomedical processing, and as stated in my February memo, I will endeavor to obtain funding for such work.

With regards to comments on the equitable allocation of the biomedical quota, DMF is concerned the implementation of the quota will lead to a derby style fishery where biomedical firms move to take the quota as expediently as possible. I anticipate such a fishery could result in poorer handling practices. Moreover, it would likely increase the reliance on the penning horseshoe crabs and doing so for long periods of time with enhanced lethal and sub-lethal impacts. I believe an allocative approach would prevent this and would allow each processor to use their quota in a manner that meets their needs and rely on the rent-a-crab program to further meet demand. However, I do recognize this approach may not be the most efficient model and may result in the underutilization of the biomedical quota if one processor does not take its share. Accordingly, this is a component of the rule that I am willing to revisit in future years should the recommended approach prove ineffective or unduly constraining.

The bait quota reduction was also not supported by many commentors, including bait harvesters, bait dealers, and one biomedical firm—ACC. The objections raised focused on: (1) the fairness of allocating quota away from the bait fishery to supplement the biomedical fishery; (2) limiting economic opportunities that will already be constrained by the recommended spawning closure; and (3) potentially exacerbating bait shortages that may occur as a result of the recommended spawning closure. These objections also cited that DMF had previously reduced its horseshoe crab quota from 330,337 crabs to 165,000 crabs in 2008.

DMF's horseshoe crab quota was established by Addendum I to the ASMFC's fishery management plan (FMP). The initial 330,337 crab quota was developed based on harvest estimates from 1995-1997, well prior to the adoption of the current robust mandatory harvester reporting system. Given this, DMF (and other states) are skeptical about the veracity of the data used to develop state-by-state quotas in the ASMFC's FMP. Accordingly, in 2008, DMF reduced the quota by ~50% to 165,000 crabs. At the time, we did not view this as a conservation measure, as the fishery was not harvesting at the allowed level, rather it was a right-sizing of the quota to contemporary harvest levels. Rhode Island and New York also adopted lower self-imposed bait quotas.

I believe it is justifiable to cap total mortality and reallocate quota from the bait fishery to the biomedical fishery given the importance of LAL production to public health. Moreover, the revised bait quota will exceed actual landings last year (2022) and will be in line with the 10-year mean. I'm also uncertain to what extent the recommended bait quota reduction will impact economic opportunities or bait supply. While I understand the speculation, I think the actual impact of a reduced quota on harvest and bait availability will likely be nominal given recent performance and the potential impacts of the recommended spawning closure. The bait demand will also be influenced by the availability of crabs taken by mobile gear and whelk fishing effort—as well as demand in other states bait markets of which DMF has no control. As previously stated, whelk fishing effort in Massachusetts has been trending downward over the past decade and will likely continue given the condition of the resource and the pending gauge increase next year. However, this is an issue I intend to monitor closely, and it may require we consider in-season adjustments to trip limits to ensure bait is available.

Despite the objections raised from industry stakeholders, I think it is a reasonable management approach to cap total harvest and mortality at near current levels and reallocate some bait quota (that will likely go unused) to the biomedical fishery to ensure LAL production. I believe this action—in combination with the recommended spawning closure—are necessary components of a precautionary management scheme necessary to contribute to the long-term health of the resource and viability of the fishery. Status quo management, as well as the alternative approaches suggested in public comment by some stakeholders,

will only serve to increase harvest and mortality in the short-term while enhancing the risk that DMF and the MFAC will face having to implement more stringent management measures in the future.

Bait Fishery Trip Limits
Should the recommended spawning closure be adopted, I recommend the MFAC vote to:

(1) Establish a 400-horseshoe crab trip limit for all permit holders for 2024. This trip limit will apply during the post-spawning closure period (i.e., June 1 – December 31 or upon reaching quota closure), and like all other trip limits will apply per calendar day or per trip, whichever period of time is longer.
(2) Establish a 100-horseshoe crab limit for the pre-spawning period of January 1 – March 31, principally to provide shellfish dredge fishers a bycatch allowance.

The purpose of this first trip limit recommendation is to allow for the bait fishery to better access the available quota during the post-spawning closure period to meet potential bait demand and make horseshoe crabs available to the biomedical firms via the rent-a-crab program. The purpose of the second recommendation is to reduce the regulatory discarding of horseshoe crabs caught incidentally by shellfish dredges in the winter pre-spawning period. As stated above, this recommendation is contingent upon adoption of the spawning closure; if the spawning closure is not approved, then I will rescind this recommendation and trip limits will remain status quo. If approved, the recommendation will go into effect in 2024.

There was limited public comment regarding this proposal and those comments received—both in writing and at the Plymouth and Gloucester public hearings—generally favored moderate trip limit increases for permit holders. Given the impact the spawning closure may have on landings and the potential for a bait shortage, I support of establishing a 400-crab trip limit for all permit holders. This maintains the existing trip limit for hand pickers after June 1, but increases the mobile gear limit back up to 400 crabs. DMF reduced the mobile gear trip limit to 300 crabs in 2013 in response to an industry-based request prompted by concerns about potential summer flounder discarding when summer flounder trip limits. This request was made when summer flounder quotas and trip limits were much lower—the summer flounder quota was about 859,000 pounds, the trip limit for trawlers was 300 pounds, and participation in the trawl fishery was almost double what it is currently. For these reasons, I do not anticipate summer flounder discards remaining a significant issue should we move this trip limit back up to its historic levels.

I do not intend to increase the open access trip limit for trawlers who do not have a horseshoe crab endorsement above the current 75-crab limit. Nor do I intend to regularly issue Letters of Authorization to these commercial trawlers allowing them to retain horseshoe crabs above the 75-crab limit. I initially proposed this due to my concerns regarding decreased participation in the inshore summertime trawl fishery south of Cape Cod and my interest in making the fishery profitable for those who remain. However, the proposal is exceptionally unpopular among permit holders and is not something I am interested in pursuing at this time. Rather, I will continue to work through the MFAC's Permitting Sub-Committee to address broader permit transferability issues, which may allow these trawlers to more easily obtain a horseshoe crab endorsement through transfer. It is also notable that the data seemingly indicate the inshore summertime trawl fishery catch levels south of Cape Cod operates in two modes (Figure 11). One mode reflects vessels retaining horseshoe crabs caught incidentally as bycatch, typically landing about 100 horseshoe crabs or fewer per trip and the other mode targeting horseshoe crabs and generally landing up to the legal limit. Accordingly, I do not anticipate that maintaining the existing 75-crab open entry limit will result in substantial regulatory discarding.

Different here from my initial proposal is the allowance for a bycatch limit of 100 crabs during the pre-spawning closure period of January 1 – March 31. It should be noted this represents a decrease from the

current 300-crab limit but is less restrictive than the public hearing proposal of having the spawning closure apply during the period of January 1 – March 31. Horseshoe crab landings during this wintertime period are generally nominal and attributable to a small number of shellfish dredge boats that encounter horseshoe crabs on shellfish beds in the nearshore waters of eastern Nantucket Sound; horseshoe crab landings data for this time period by this gear are confidential under G.L. c. 130, §21. The recommended limit is designed primarily to allow these vessels to retain and land a nominal bycatch and avoid regulatory discarding, which likely has a high mortality rate given the gear type. DMF does not anticipate this will increase harvest above current levels. In short, I prefer a management strategy that allows these fishers be able to retain a small amount of crabs they incidentally catch during the winter months and have these crabs enter the bait market and count against the quota instead of forcing these crabs to be thrown back overboard subject to some level of discard mortality. Landings data suggest a 100-crab trip limit would be in the midrange of what has been seasonally landed per trip in recent years.

Codifying Biomedical Dealer and Processor Permit Conditions

I am recommending the MFAC vote in favor of housekeeping actions to codify longstanding biomedical dealer and processor permit conditions as regulation. This includes requiring: (1) biomedical dealers and processors handle, transport, and store crabs in containers no more than two-thirds full; (2) biomedical dealers and processors to store crabs in containers where they can be kept moist and are segregated by source; (3) biomedical dealers and processors maintain temperature-controlled environments where ambient air temperature can be held between 50°F and 60°F in transit and below 70°F at the processing facility; (4) biomedical processors mark all bled crabs with a distinct mark established annually by DMF; (5) biomedical processors and dealers return bled crabs to sea with hand harvested crabs returning to the shellfish growing area where harvested and trawl caught crabs returning to an adjacent body of water—this activity may be contracted out to third parties; (6) biomedical dealers and processors not keep horseshoe crabs out of seawater for a period longer than 36 consecutive hours; and (7) biomedical processors report to DMF and maintain records of observed mortality at all stages of the biomedical process. If approved this recommendation will go into effect in 2024; the 2023 permits have already been conditioned to contain these requirements.

These requirements follow the best management practices (BMP) established by the ASMFC for the biomedical harvest and handing of horseshoe crabs[12]. The BMPs were developed to "sustain the horseshoe crab population and ensure a steady and reliable supply of product to the pharmaceutical market." DMF has annually adopted these BMPs through individualized permit conditions issued to each biomedical dealer and processor, but now seeks to adopt them as regulations to enhance the transparency of the management of the state's horseshoe crab resource.

There were limited comments on this proposal at public hearing and in written comment. While CRL did not comment on this measure, ACC supported it. However, at the April 24 public hearing, ACC requested DMF clearly define the term "segregated by source." DMF recognizes the need to do so and will clearly state in the regulation that it means separating crabs by harvest source (e.g., Massachusetts biomedical, out-of-state biomedical, rent-a-crab) and area of harvest (e.g, shellfish growing area), consistent with current practices.

Codifying Biomedical Harvester Permit Conditions

I am recommending the MFAC vote in favor of: (1) requiring biomedical harvesters sell only to a biomedical processor or biomedical dealer; (2) preventing fishers from participating in the bait and biomedical fishery at the same time; (3) prohibiting biomedical fishers from retaining, possessing, or landing a horseshoe crab with the current year's mark to prevent rebleeding; and (4) requiring horseshoe

[12] Atlantic States Marine Fisheries Commission. "Horseshoe Crab Best Management Practices." *www.asmfc.org*. 2011. www://asmfc.org/uploads/file/63ebd89abiomedAdHocWGReport_Oct2011.pdf.

crabs be retained in containers that are actively fed by sea water. If approved this recommendation will go into effect in 2024; the 2023 permits have been and will be conditioned to contain these requirements.

My recommendation differs from the public hearing proposal in two ways. First, it does not require trawlers limit their tows to 30 minutes with winches locked. This was a BMP adopted to limit the potential for turtle bycatch in trawl fisheries in the south Atlantic. Moreover, at public hearing and in written comment biomedical trawlers indicated the primary source of injury and mortality in the biomedical fishery is when the net is unloaded onto the boat and argued restricting tow time will require them to perform more tows to target the same number of crabs thereby increasing the risk of injury and mortality. I think these are legitimate reasons to not adopt this requirement. Second, I am not requiring biomedical trawlers limit their storage of horseshoe crabs to two-thirds full containers provided the crabs are being actively fed by seawater. The purpose of the public hearing proposal was to limit the physical impact stowage may have on horseshoe crabs thereby reducing the likelihood of injury and mortality. However, running sea water keeps the horseshoe crabs suspended in water, rather than being layered on top of each other. This reduces the physical impacts of stowage and likely buffers the need for this requirement. This change is supported by both public comment from biomedical trawlers and observation by DMF biologists during the 2022 fishing season.

Outside of the comments addressed in the above-described modifications to my final recommendation, there was limited comment on this subject. Similar to the codification of biomedical dealer and processor permit conditions, this recommended action is designed to match the ASFMC's BMPs, which were previously required by permit condition, to enhance management transparency.

Permitting

DMF is moving forward a set of permitting and reporting requirements for the commercial horseshoe crab fishery, inclusive of the bait and biomedical fisheries. This includes: (1) creating a new wholesale dealer biomedical horseshoe crab processor permit for any entity processing horseshoe crabs for blood—this permit may be endorsed with a primary buyer authorization to purchase horseshoe crabs directly from biomedical harvesters; (2) establishing a May 16, 2023 control date to limit the issuance of new biomedical processor permits; (3) creating a new wholesale biomedical horseshoe crab dealer permit for any entity purchasing horseshoe crabs directly from biomedical harvesters for use by a named biomedical processor; and (4) limiting the issuance of biomedical harvester permits to those persons who have been endorsed by a biomedical dealer or processor. These new permitting rules will go into effect for 2024.

At present, DMF issues dealer permits with extensive permit conditions to any processor or dealer involved in the biomedical fishery and limits the issuance of biomedical harvester permits to persons who have a relationship with said dealer or fisher. This proposal will codify this requirement for the purpose of regulatory transparency. As described in my February memo, this current practice was a "one-size-fits all approach to permitting to accommodate this activity through an existing dealer permit type." For the purpose of management transparency, DMF will now require a new wholesale dealer permit type to authorize this activity. Moreover, the control date is aimed to limit the proliferation of new biomedical processing activity that may enhance biomedical demand, and to prevent the use of satellite firms to gain access to the recommended biomedical processor quota. This will result in a minor fee change for biomedical processors or dealers. Currently, the bait dealer annual fees established by ANF regulations are $65 for resident entities and $130 for non-resident entities; the new permits fall within the wholesale dealer permit category and will be subject to annual fees of $130 for resident entities and $260 for non-resident entities. These permits will be required regardless of whatever other dealer permits the entity may need to hold for other non-biomedical horseshoe crab related business. There were no comments objecting to this new permitting program.

With regards to biomedical harvesters, DMF will require by regulation—rather than matter of practice—that a biomedical dealer or processor has to endorse a biomedical harvester to obtain a biomedical harvester permit. The purpose of this requirement is to ensure all horseshoe crabs harvested for biomedical purposes will be sent to a biomedical dealer or processor for bleeding, thereby preventing the unnecessary holding of horseshoe crabs for which there is no market sale. There were no comments objecting to codifying this permitting requirement. However, one bait harvester was concerned about access to the biomedical fishery being limited, which is not being proposed here and DMF cannot require biomedical dealers or processors work with certain harvesters.

Reporting
DMF will require bait and biomedical endorsement holders to electronically report all trips regardless of target species, location fished, or gear type prior to landing (if vessel based) or transport (if shore based). This new reporting requirement will go into effect in 2024.

This will raise the standard of reporting up to the current federal standard. Additionally, it will enhance the timeliness of data collection, allowing DMF to better query harvester data to conduct spatial and gear type analyses. Additionally, real-time daily reporting will enhance enforcement and compliance. These enhancements are critical given the public interest in horseshoe crab management. In fact, for these reasons, DMF is considering moving towards this reporting format eventually for all fisheries to capitalize on current and emerging technologies.

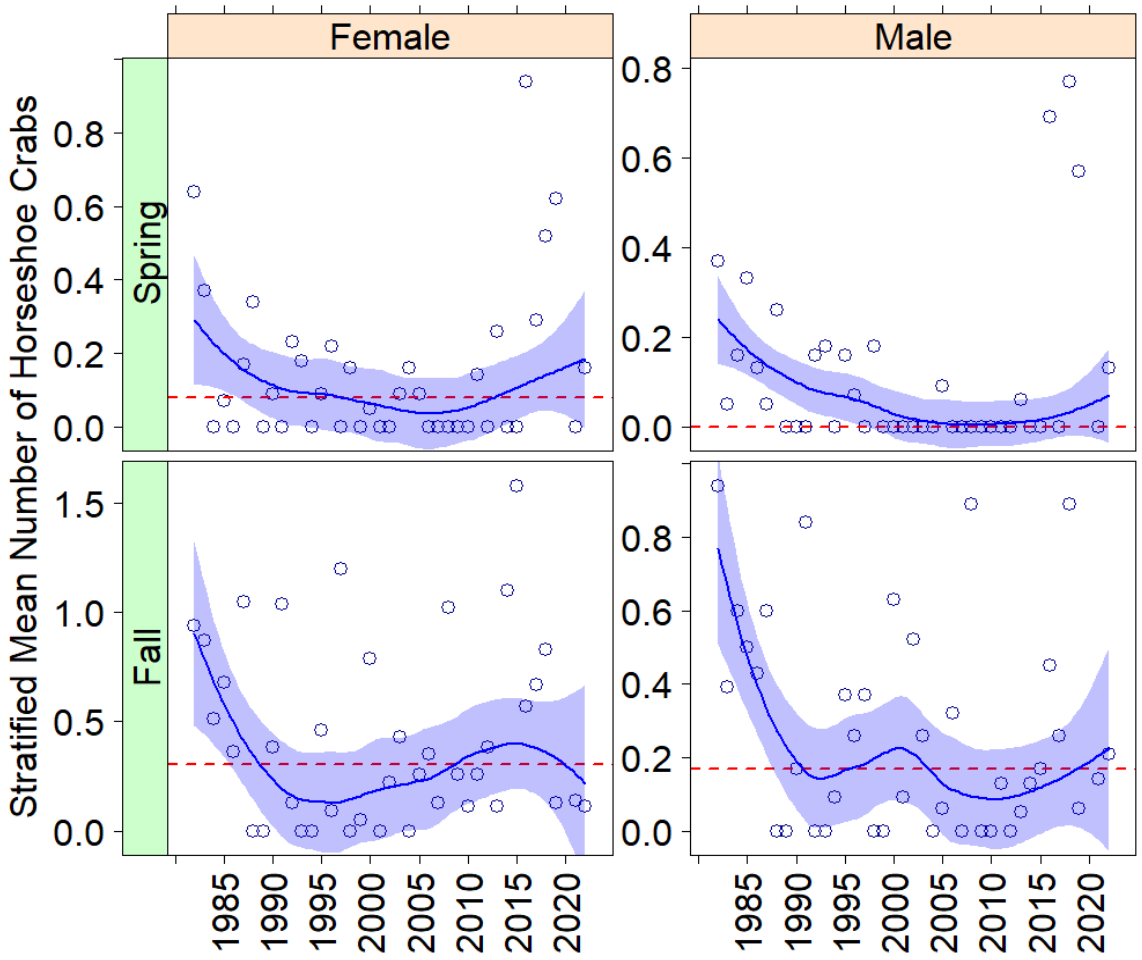
Daily electronic reporting can be done through a free mobile application available via the Apple App Store or the Google Play Store on your cell phone or tablet. Fishers will be required to report their catch at the trip level as they would on their current monthly reports, similar to existing federal vessel trip report (VTR) requirements[13]. The application allows for data to be entered outside of cell service and then it can be uploaded to the database upon return to port or at home. The reporting system is user friendly and is already in use by other Massachusetts' fishers. I do not anticipate this will create a substantial compliance burden and DMF staff will be available to educate fishers on how to report through the fisheries statistics program's help desk.

There was limited comment on this subject. Some commercial fishers did some limited concerns about the requirement, particularly related to cellular connectivity at sea. However, I am of the opinion that the technology exists to accommodate the universal implementation of this reporting mode, and with proper outreach and education these stakeholders will be able to use the program and provide accurate real-time harvest data.

Attachment
Written Public Comment

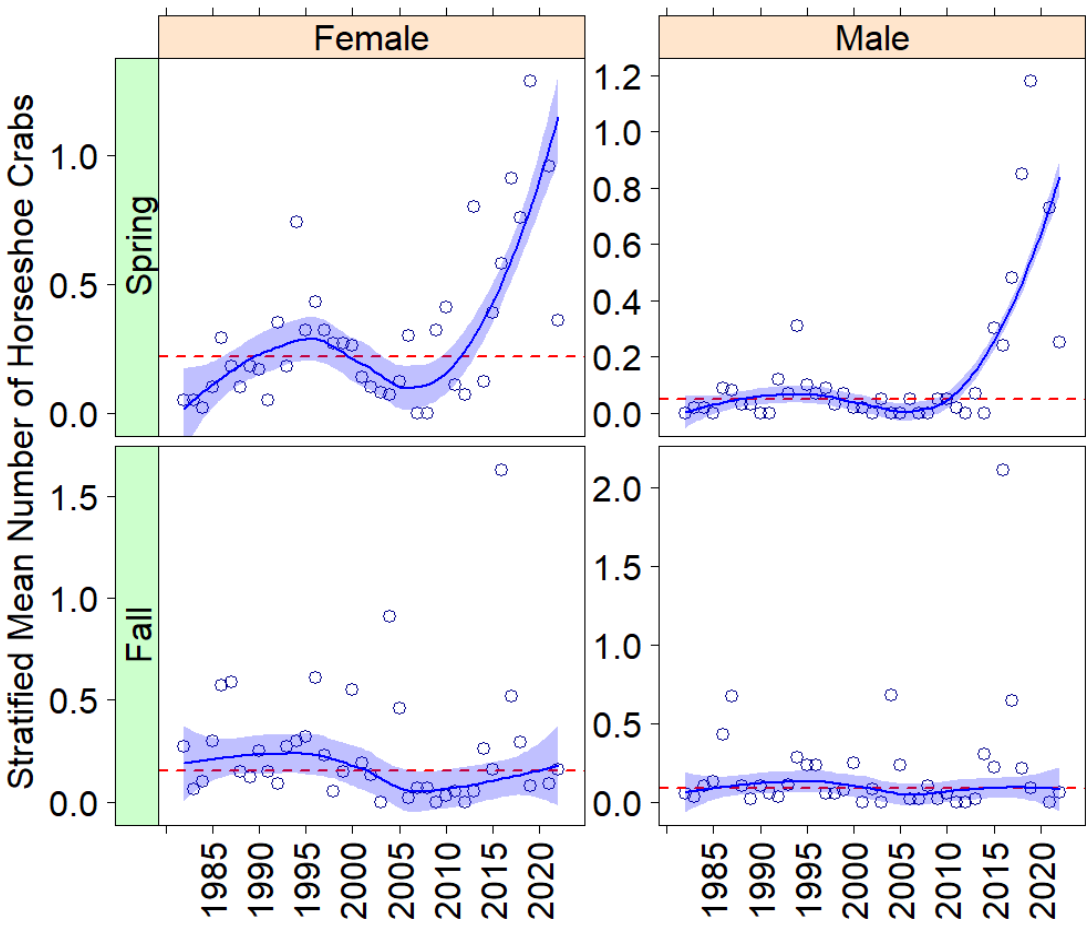
[13] Commercial fishers reporting federally via VTR would be exempt from duplicative state reporting. Federal electronic VTR reporting began in November 2021.

Figure 1. Stratified Mean Number of Horseshoe Crabs Per Tow – North of Cape Cod



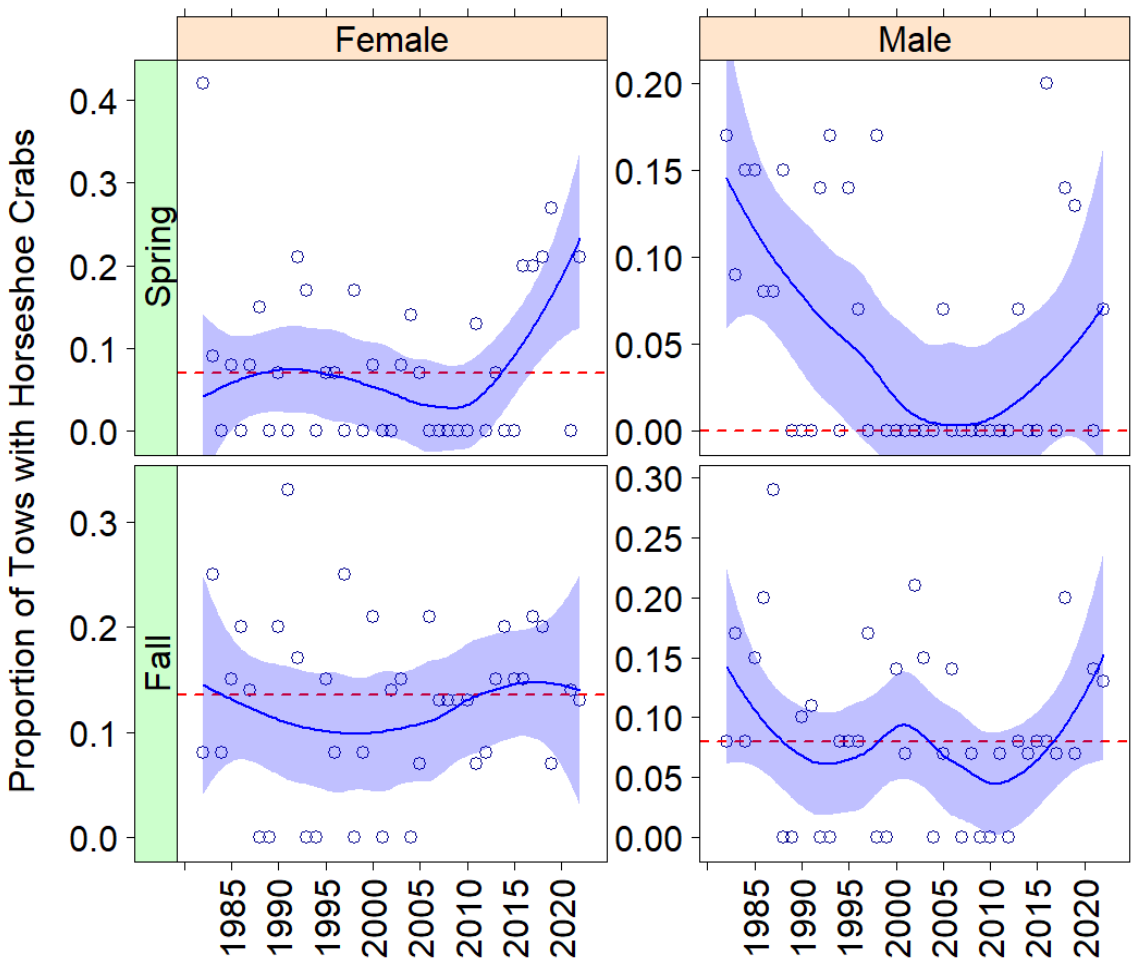
DMF Trawl Survey North of Cape Cod. Red, dashed line is the time series median, loess fitted line is blue, the light blue shaded area is an approximate 95% confidence interval for the loess fitted line.

Figure 2. Stratified Mean Number of Horseshoe Crabs Per Tow – South of Cape Cod



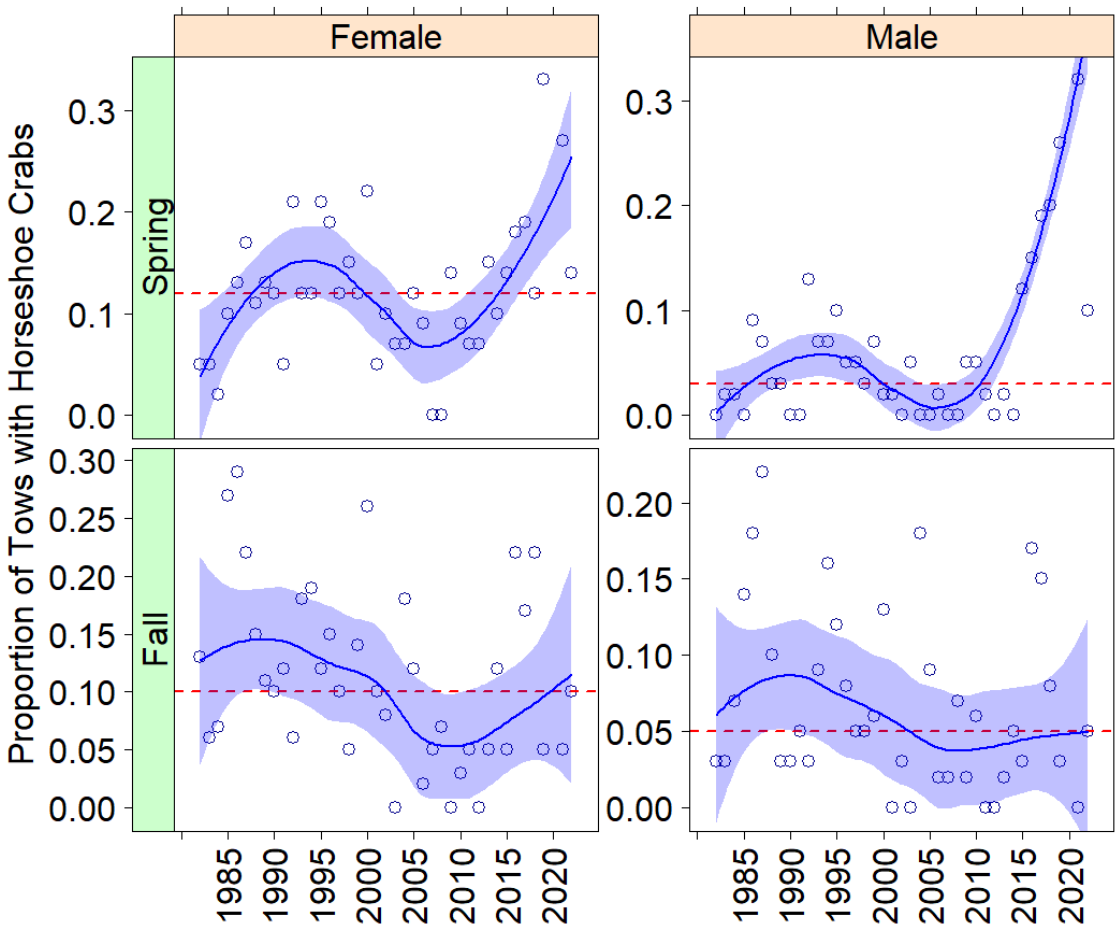
DMF Trawl Survey South and East of Cape Cod. Red, dashed line is the time series median, loess fitted line is blue, the light blue shaded area is an approximate 95% confidence interval for the loess fitted line.

Figure 3. Proportion of Tows with Horseshoe Crabs Present – North of Cape Cod



DMF Trawl Survey North of Cape Cod. Red, dashed line is the time series median, loess fitted line is blue, the light blue shaded area is an approximate 95% confidence interval for the loess fitted line.

Figure 4. Proportion of Tows with Horseshoe Crabs Present – South of Cape Cod



DMF Trawl Survey South and East of Cape Cod. Red, dashed line is the time series median, loess fitted line is blue, the light blue shaded area is an approximate 95% confidence interval for the loess fitted line.

Figure 5. Year-Round Spatial Closures to Horseshoe Crab Fishing

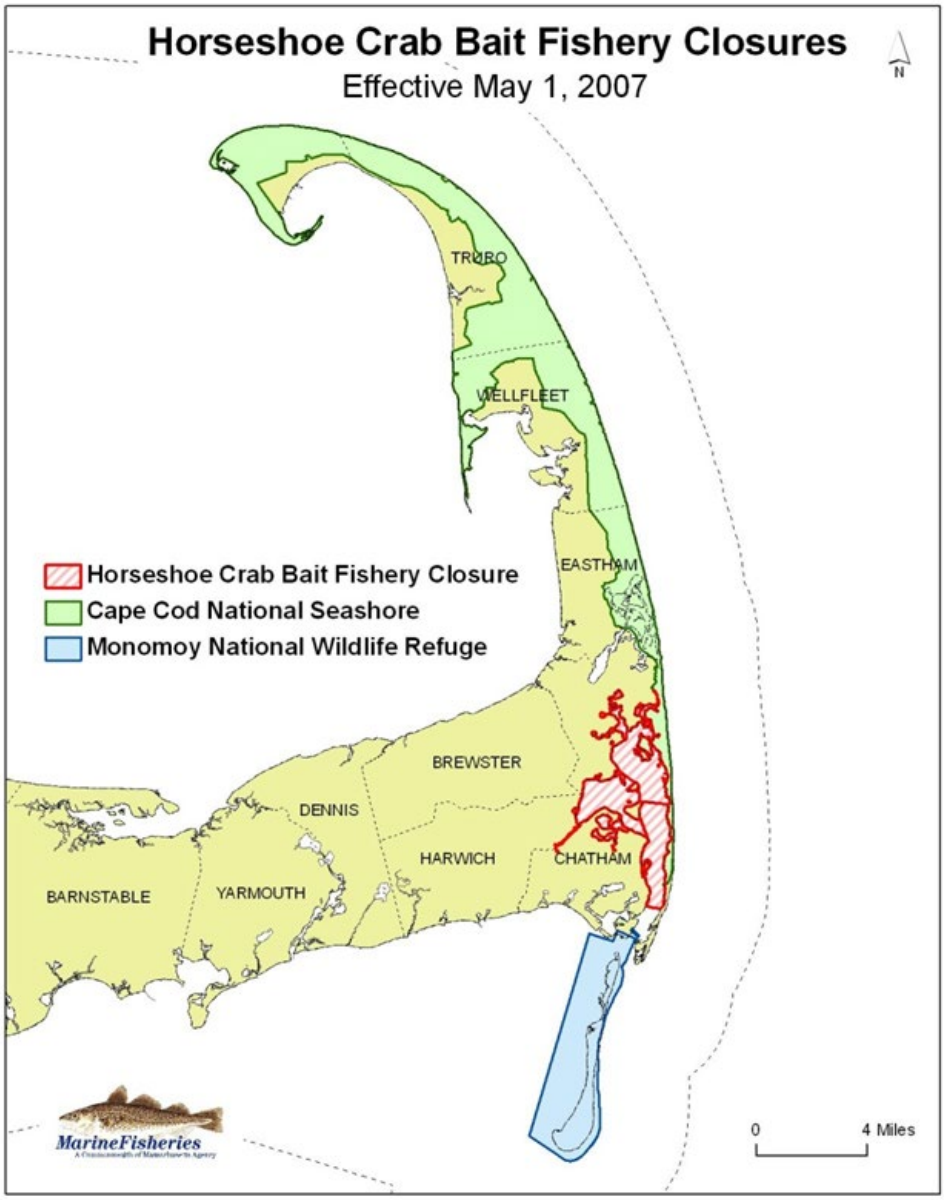
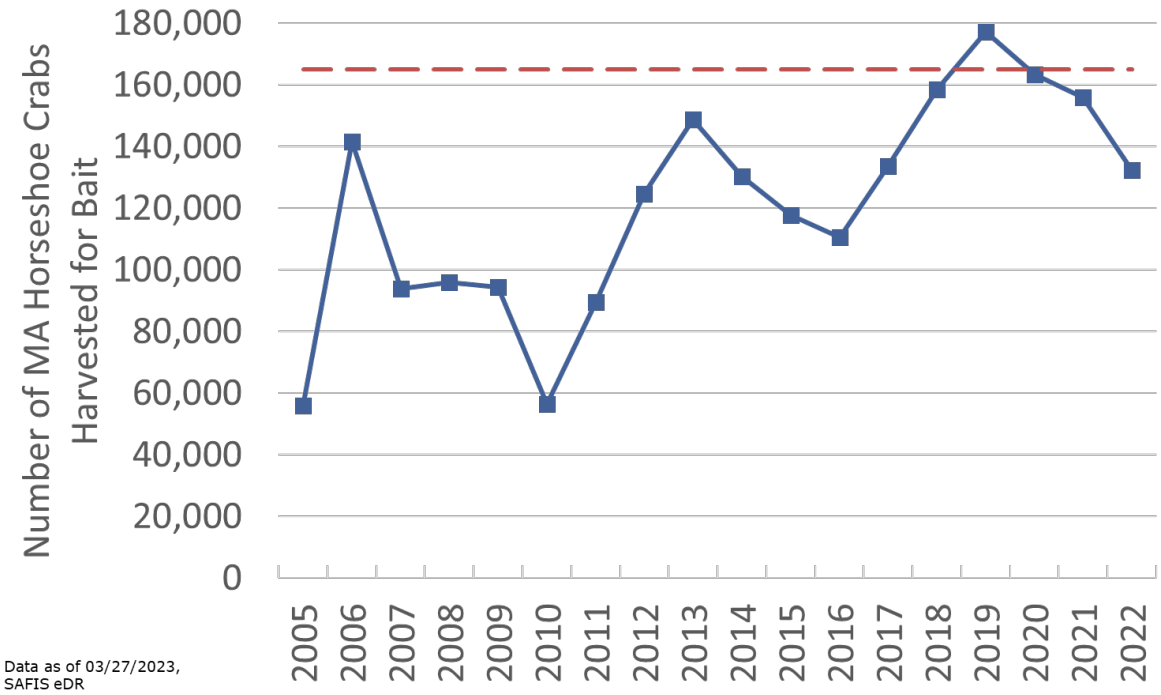


Figure 6. Annual Reported Landings in Massachusetts Bait Fishery for Horseshoe Crabs (2005 – 2022).



The Red Dashed Line is the current Massachusetts bait quota of 165,000 crabs.

Figure 7. Spawning Beach Survey and the Cumulative Percent of Spawning Females Observed by Week North of Cape Cod

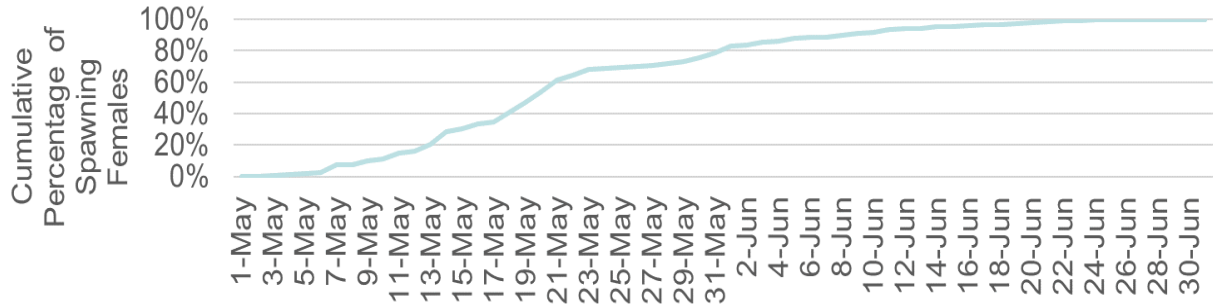


Figure 8. Spawning Beach Survey and the Cumulative Percent of Spawning Females Observed by Week in Southern Massachusetts and Outer Cape Cod

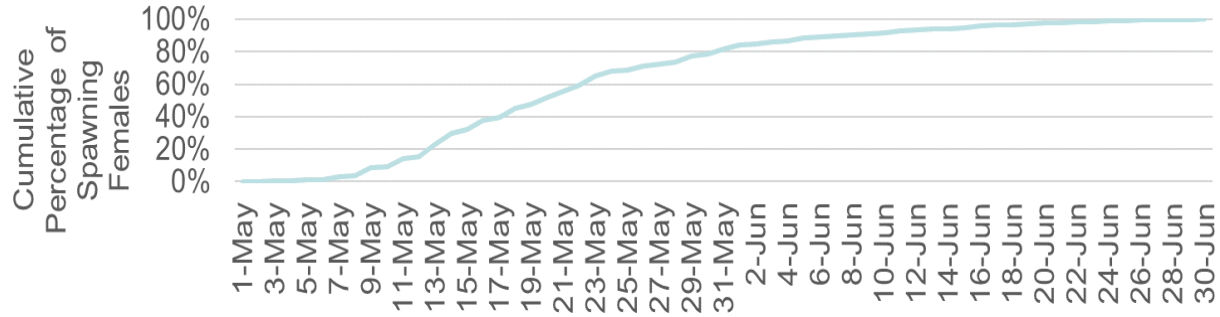


Figure 9. Total Whelk Pot Hauls by Year (2000 – 2021)

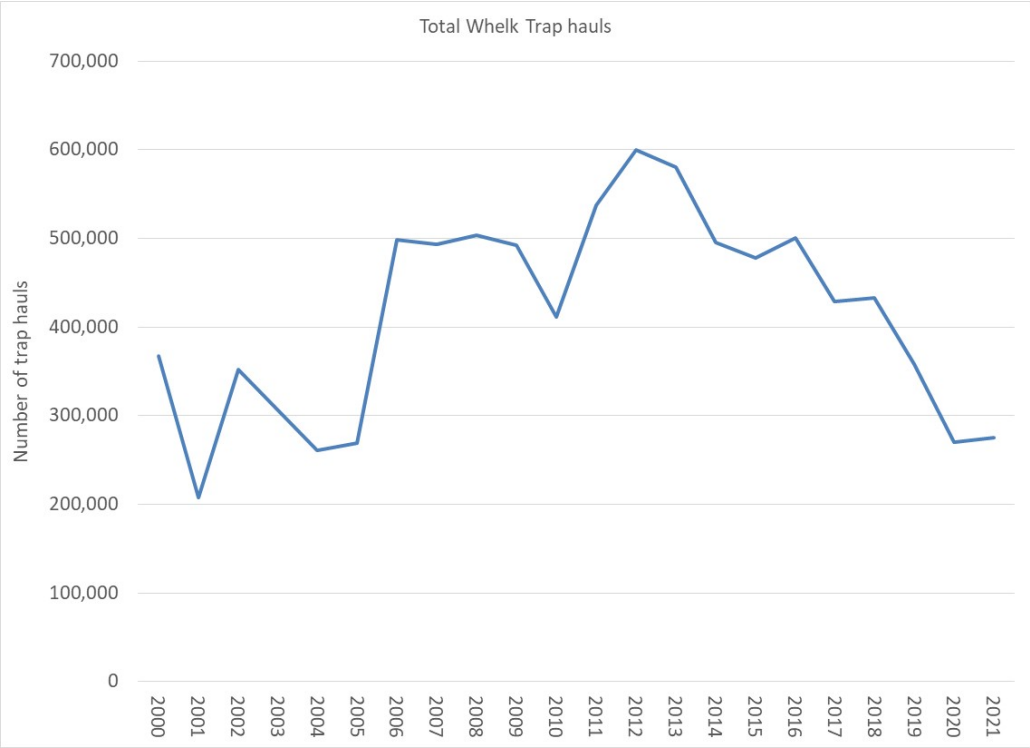


Figure 10. Maximum Whelk Pots Fished in Nantucket Sound (SRA10) by Week Averaged across 2010 – 2014 and 2015 – 2019.

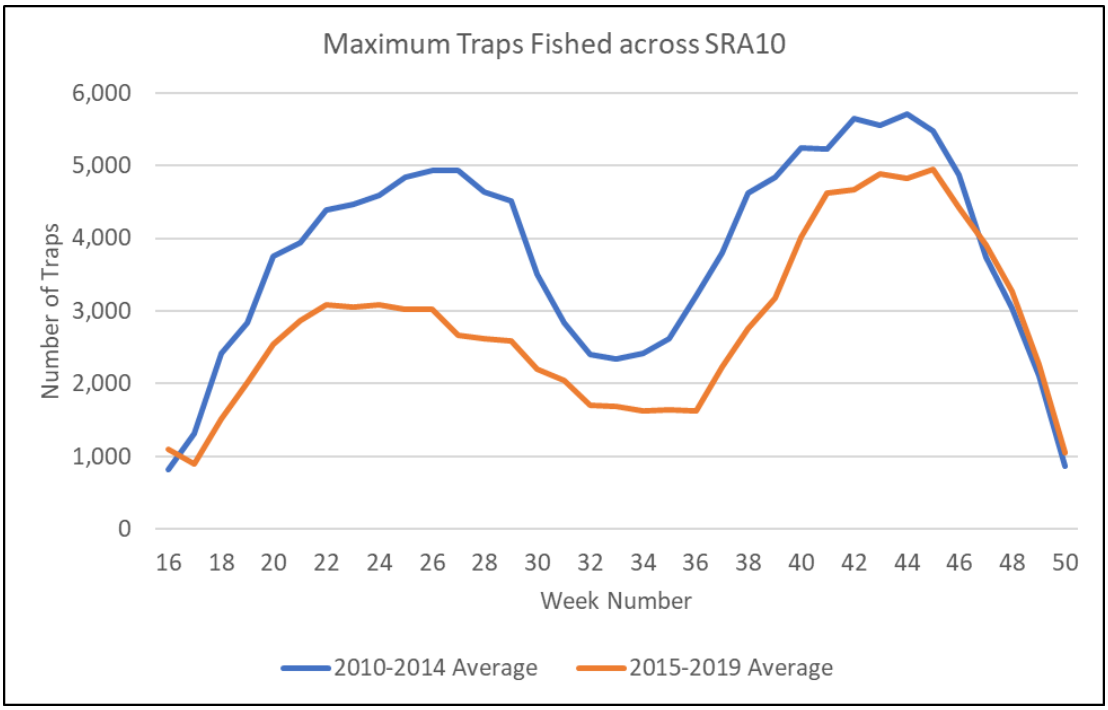


Figure 11. Frequency of Horseshoe Crab Landings per Trip by Trawlers

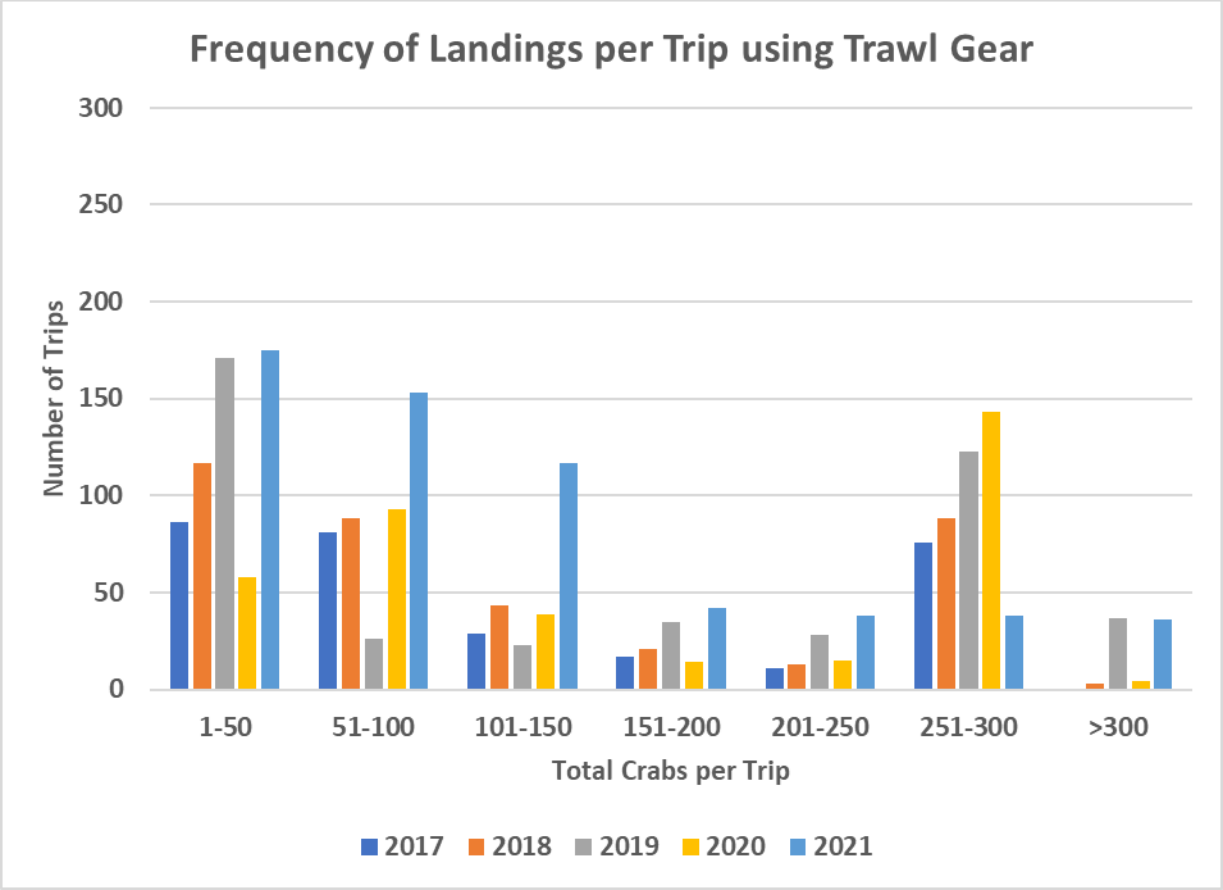


Table 1. 2022 Spawning Beach Survey Compared to Time Series Median and 5-Year and 10-Year Trends

Beach	Region	Time of Day	2022 vs Median	10-year trend	5-year trend
Duxbury	Cape Cod Bay	Day	above	decreasing	increasing
Duxbury	Cape Cod Bay	Night	above	decreasing	increasing
Long Beach	Cape Cod Bay	Day	above	N/A	N/A
Long Beach	Cape Cod Bay	Night	above	N/A	N/A
Millway	Cape Cod Bay	Day	above	increasing	increasing
Millway	Cape Cod Bay	Night	above	increasing	increasing
Long Pasture	Cape Cod Bay	Day	above	increasing	increasing
Long Pasture	Cape Cod Bay	Night	above	increasing	increasing
Sanctuary Beach	Cape Cod Bay	Day	above	increasing	increasing
Indian Neck	Cape Cod Bay	Day	equal	increasing	increasing
Indian Neck	Cape Cod Bay	Night	below	decreasing	decreasing
Great Island	Cape Cod Bay	Day	above	increasing	increasing
Priscillas Landing	Outer Cape Cod	Day	above	increasing	increasing
Marsh 2-3	Outer Cape Cod	Day	above	increasing	increasing
Erica's Beach	Outer Cape Cod	Day	below	increasing	increasing
Stage Harbor	Nantucket Sound	Day	N/A	N/A	N/A
Stage Harbor	Nantucket Sound	Night	N/A	N/A	N/A
Bass River	Nantucket Sound	Day	above	N/A	increasing
Bass River	Nantucket Sound	Night	above	N/A	increasing
Monomoy	Nantucket Sound	Day	above	increasing	increasing
Monomoy	Nantucket Sound	Night	above	increasing	decreasing
Warrens Landing	Nantucket Sound	Day	above	increasing	increasing
Warrens Landing	Nantucket Sound	Night	above	increasing	increasing
Tashmoo	Nantucket Sound	Day	below	increasing	increasing
Tashmoo	Nantucket Sound	Night	below	increasing	decreasing
Tahanto	Buzzards Bay	Day	above	decreasing	increasing
Tahanto	Buzzards Bay	Night	N/A	increasing	increasing
Swifts Beach	Buzzards Bay	Day	below	decreasing	increasing
Swifts Beach	Buzzards Bay	Night	below	decreasing	decreasing

Table 2. Hand Harvest Landings (# Crabs) by Season (2010-2021)

MA HSC Bait Hand Fishery Annual Landings (# of Crabs)		
YEAR	**JAN 1 - MAY 31**	**JUNE 1 - DEC 31**
2010	43,815	5,612
2011	28,882	6,303
2012	50,030	3,049
2013	59,716	10,681
2014	49,640	27,395
2015	55,168	12,898
2016	54,554	9,381
2017	46,113	22,441
2018	43,149	27,494
2019	52,044	27,142
2020	54,833	12,019
2021	39,525	13,421
DATA SOURCES: MATL Reports, NMFS VTRs		

Table 3. Percent Hand Harvest Landings (#Crabs) by Season (2010-2021)

MA HSC Bait Hand Fishery Percent Annual Landings		
YEAR	**JAN 1 - MAY 31**	**JUNE 1 - DEC 31**
2010	89%	11%
2011	82%	18%
2012	94%	6%
2013	85%	15%
2014	64%	36%
2015	81%	19%
2016	85%	15%
2017	67%	33%
2018	61%	39%
2019	66%	34%
2020	82%	18%
2021	75%	25%
DATA SOURCES: MATL Reports, NMFS VTRs		

Table 4. Annual Bait Fishery Landings and Active Permit Count by Gear Type

MA Bait Horseshoe Crab Landings (Count) and Active Permits by Gear Type							
	Landings (Count)				Active Permit Count		
YEAR	HAND	MOBILE	OTHER	% MOBILE	HAND	MOBILE	OTHER
2008	64,822	20,397	3,706	22.94%			
2009	59,117	18,118	1,527	23.00%			
2010	49,427	21,169	1,428	29.39%	41	20	5
2011	35,185	37,468	13,750	43.36%	29	18	14
2012	53,079	56,346	9,128	47.53%	47	21	7
2013	70,396	85,609	3,856	53.55%	60	29	10
2014	77,035	50,902	2,567	39.00%	49	36	4
2015	68,065	45,270	3,065	38.89%	41	32	9
2016	63,936	46,925	967	41.96%	38	31	3
2017	68,554	58,588	4,681	44.44%	31	34	10
2018	70,643	84,378	3,981	53.07%	35	34	3
2019	79,186	85,606	1,823	51.38%	33	30	5
2020	66,852	76,721	*	53.44%	26	23	2
2021	52,546	89,603	2,784	61.82%	28	21	7

Data Sources: MA ACR and TL Reports, NMFS VTRs
*Confidential

The Commonwealth of Massachusetts
Division of Marine Fisheries

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MAURA T. HEALEY, Governor | KIMBERLEY DRISCOLL, Lt. Governor | REBECCA L. TEPPER, Secretary | THOMAS O'SHEA, Commissioner | DANIEL J. MCKIERNAN, Director

MEMORANDUM

TO: Marine Fisheries Advisory Commission (MFAC)

FROM: Daniel J. McKiernan, Director

DATE: May 10, 2023

SUBJECT: **Recommendation on Commercial Summer Flounder Management**

Background

Massachusetts' annual summer flounder quota has been rising since its all-time low in 2017 (Table 1). In recent years (2021 and 2022), the growth in the quota has been substantial in response to increases to the coastwide quota as based on the results of the most recent stock assessments[1] and a change in how the coastwide quota is allocated among the states resulting in a heightened share for Massachusetts[2]. For 2022, Massachusetts quota was set at 1.39 million pounds—the highest level it has been in more than a decade—and for 2023, the quota remains similarly elevated at about 1.36 million pounds.

However, Massachusetts has not been able to achieve its full quota allocation since 2018. Over the past several years, DMF has attempted to enhance quota utilization through moderate trip limit increases. While these trip limit increases have improved utilization, we are still experiencing quota underages. It is my belief that this is a product of diminished effort resulting from a series of complicated economic and environmental factors, which I have discussed in detail in prior memos on commercial summer flounder management. It is also worth noting that these underages are not unique to Massachusetts and have been occurring in other states along the Atlantic coast.

Recommendations

The mission of the Division of Marine Fisheries (DMF) is to, "manage the Commonwealth's living marine resources in balance with the environment, resulting in sustainable fisheries and contributions to our economy; the stable availability of diverse, healthy seafood; and enriched opportunities that support our coastal culture." Accordingly, I continue to seek regulatory means to enhance the performance of this fishery to achieve its quota to the benefit of the Massachusetts seafood industry.

This memorandum contains five separate recommendations regarding the management of the summer flounder fishery aimed at improving performance by increasing landings and enhancing efficiency. These recommendations consider the discussion at the December 2022 stakeholder meeting in New Bedford; written public comment received during the recent March 31 – May 1 public comment period; and

[1] The 2021 stock assessment (used to set 2022 and 2023 specifications) demonstrates summer flounder are not overfished and overfishing is not occurring. Spawning stock biomass was estimated to be 86% of the target and trending upwards, while fishing mortality was estimated to be 19% below the threshold. The resulting coastwide commercial quotas for 2022–2023 are more than 30% above the 2020–2021 level.

[2] Beginning in 2021, when the coastwide quota exceeds 9.55 mlb, MA receives a 12.375% share of all quota above this level, and its historic share of 6.82% of all quota below this level. Based on the size of the coastwide quota, the state's quota share was effectively increased to roughly 8.1% for 2021 and 8.9% for 2022–2023.

testimony received at the April 24 public hearing in Plymouth and the April 25 public hearing in Gloucester.

I am recommending the MFAC vote in favor of the recommendations enumerated below and further described in Table 3:

1. From January 1 – April 22 (Period I), establish a 10,000-pound trip limit.
2. Increase the trip limits for the summertime period (April 23 – September 30).
    a. From April 23 – August 31, establish a 600-pound trip limit for net fishers and a 400-pound trip limit for hook and line fishers.
    b. From September 1 – September 30, establish a 1,500-pound trip limit for all gear types if more than 20% of the quota remains; if less than 20% of the quota remains the trip limits for the April 23 – August 31 period will apply.
3. From October 1 – December 31, establish a 10,000-pound trip limit provided more than 5% of the quota remains; if less than 5% of the quota remains the trip limits from the September 1 – September 30 period will apply.
4. Revise the bycatch allowance rule to match the federal fishery management plan (FMP) and prohibit any vessel fishing with mesh smaller than 5.5" diamond or 6" square from retaining, possessing, or landing more than 100 pounds of summer flounder.
5. Adjust the summer flounder landing window to allow vessels to land summer flounder between 6AM and 10PM.

Period I Trip Limit
The Period I fishery occurs from January 1 – April 22. Landings during this period typically come from federally permitted vessels fishing offshore. The period is allocated 30% of the overall quota. The regulatorily established trip limit is 3,000 pounds, however, DMF and the MFAC increased the trip limit to 10,000 pounds in 2023 through an in-season adjustment. With quota increases in recent years, DMF has managed this fishery through higher trip limits to encourage the landing of fish lawfully caught in federal waters in Massachusetts' ports.

In 2023—at the elevated 10,000-pound trip limit—the Period I fishery landed about 22% of the annual quota. This demonstrates that we can effectively encourage fish to be landed in Massachusetts by setting trip limits comparable with other states, particularly those in the Mid-Atlantic with high wintertime trip limits. As documented by the summer flounder stock assessment, the species' geographic distribution is shifting to the north and the east. As a result, wintertime fishing activity is now occurring closer to New England ports (but still offshore). By setting the trip limit at this elevated level, Massachusetts permit holders are able to land this fish closer to the fishing grounds and avoid long steams to other states to offload. This is also to the benefit of the Massachusetts seafood dealers who are able to purchase this fish.

Given the continued underutilization of the summer flounder quota in recent years, I want to set limits that encourage the wintertime fishery to take as much of its quota allocation as possible. Accordingly, I am recommending the MFAC vote in favor of increasing the regulatorily established Period I trip limit from 3,000 pounds to 10,000 pounds. Landings during this period will remain capped at 30% of the overall quota, and should the allocation be reached, the trip limit is reduced to 100 pounds.

This recommended action is consistent with what was proposed at public hearing. Public comment on this subject was generally favorable. Vessels and dealers who participate in this fishery supported this action. Additionally, the general sentiment among the summertime fishery participants was to allow the offshore fishery access to available quota during the winter (and fall) periods.

Summertime Fishery Trip Limits

The Period II fishery is allocated 70% of the annual quota plus whatever portion of the allocation that is not taken by the Period I fishery. Historically, the inshore summertime fishery would take the annual quota by the late summer or early fall. However, this has not occurred since 2018 and the fishery has remained open throughout the rest of the calendar year, allowing for a fall and early winter offshore fishery.

Performance in the inshore fishery has been greatly impacted by reduced effort (Figure 1). From 2010 through present, landings are down more than 50%, driven by a similar reduction in the number of active permits and trips taken. This reduced effort is observed across the gear types but is particularly pronounced among commercial anglers. The reasons for this are complicated and diverse: (1) the fleet is aging with the average age for permit holders being about 60 years[3]; (2) profit margins for this fishery are becoming more narrow with overhead costs increasing (e.g., dockage, fuel, maintenance), while the average ex-vessel value has remained relatively stable (Figure 2); (3) the loss of other inshore seasonal trawl fishing opportunities (e.g., groundfish) likely affects overall profitability of dayboat draggers and impacts effort and activity; (4) with the northward and eastward shift in geographic distribution of this resource, local abundance may be moving out of Buzzards Bay, Vineyard Sound, and Nantucket Sound towards the cooler waters offshore (particularly larger, market grade fish); and (5) there have been reports from trawlers regarding the presence of large amounts of marine filamentous algae in inshore waters, likely attributable to nearshore nutrient pollution, that make working conditions difficult. In combination, these factors have forced participants out of the fishery or encouraged opportunistic shifts in fishing effort into other, more profitable fisheries such as lobster and sea scallop, which have been experiencing record high ex-vessel values[4].

Since 2019, DMF and the MFAC have worked to liberalize fishing limits in an attempt to enhance participation in this fishery by keeping it profitable for participants and creating economic incentives for others to participate. This has primarily focused on increasing the the trawl fishery trip limits from 300 pounds to 400 pounds (2020) and then 400 pounds to 500 pounds (2022); increasing the hook and line trip limits from 200 pounds to 250 pounds (2020) and then 250 pounds to 300 pounds (2022); adopting and renewing a pilot program for trawlers to allow them to possess and land consecutive daily trip limits (2019 – 2022); eliminating closed fishing days to optimize fishing opportunities and promote fishing safety (2022); and opening the directed fishery earlier (2022) on April 23, as opposed to June 10, to take advantage of high seasonal ex-vessel values (Figure 4) and mitigate against poor squid fishery conditions.

During these years, I have also proposed and considered more extensive changes to how the fishery is managed, including more substantial trip limit increases. While there has been some support for these measures from seafood dealers and commercial fishers, most inshore fishers have preferred more moderate changes. Their concerns focus around how this could alter the small dayboat composition of the summertime fishery and encourage larger trip boats to fish inshore, in turn potentially impacting ex-vessel value, catch per unit effort, and access to other fisheries. Many argue that it would make them fish harder for the same profit. Ultimately, I have not moved forward with these proposals in response to these concerns.

This year, I offered two discrete options for the summertime fishery: (1) a weekly aggregate landing program and (2) a trip limit increase up to 800 pounds coupled with the continuation of the existing

[3] In 2021, DMF made the "fluke endorsement" transferable for all commercial fishers, subject to actively fished criteria and or as latent permit bundled with an active Coastal Access Permit or another active rod and reel permit endorsement. DMF and the MFAC's Permitting Sub-Committee are currently reviewing the actively fished criteria for this endorsement and others to enhance transferability and allow new participants to enter the fishery.

[4] SAFIS dealer data demonstrates the average ex-vessel value for lobster and shucked sea scallop meats in 2021 is $7.48 per pound and $15.25 respectively.

consecutive days limit pilot program. Landings data (Figure 3) suggest the net fishery can take advantage of the additional access afforded by either of these proposals. However, industry's response was mixed. Concerns persist about how increasing harvest may negatively impact markets and fishing conditions. As such, there was generally limited support for the aggregate program among the inshore fleet, but some support among offshore fishers. There was also limited support for increasing the trip limit up to 800 pounds. Most of the inshore fleet supported either status quo or a more nominal increase up to 600 pounds.

While I am interested in a weekly aggregate landing program, given the late timing of rulemaking this year, I prefer a simple trip limit increase for 2023. My preference is to increase the trip limit up to 600 pounds consistent with the public comment received. However, if the MFAC prefers a trip limit increase up to 800 pounds, I will reconsider my recommendation accordingly. I will also renew the consecutive days limit pilot program for this year effective June 1. There is a new stock assessment due out later this year that I expect will be used for management beginning in 2024. DMF staff will meet with the fleet this fall to discuss the impacts of the stock assessment on quotas and fishery management. If quotas remain elevated at or near recent levels, I intend to seriously consider an aggregate program in 2024 and will begin working on the framework for such a program over the winter.

I did not propose changes to the hook and line trip limit at public hearing because the data do not show most of the hook and line fleet is capable of fishing at a more elevated limit (Figure 6). However, I did receive written public comment and testimony at the Plymouth public hearing from commercial anglers who supported a trip limit increase to 400 pounds should DMF increase the trip limit for net fishers. They stated they are capable of taking the additional fish and this would offset potential decreases in ex-vessel value. Moreover, by setting the trip limit at 400 pounds for hook and liners and 600 pounds for net fishers, it would maintain the historic trip limit differential between gear types, whereby the hook and line trip limit is two-thirds that of the net trip limit. While I did not propose this measure, I am willing to accommodate it in the final rule, as it is consistent with the purpose of the proposed actions to enhance quota utilization and fishery performance. Accordingly, I am recommending a 400-pound trip limit for commercial hook and liners.

With regards to the early-fall trip limit (beginning September 1), I proposed increasing it to 1,000 pounds if more than 20% of the annual quota remains. However, we received a comment from a prominent dealer requesting the trip limit for this period be set at 1,500 pounds. They argue that the market can sustain the additional landings during this period and would benefit the local fleet. I tend to agree. Higher trip limits may also be beneficial in maintaining participation in this fishery into the fall and offset days lost to worsening weather and the increased overhead that may be associated with having to fish further offshore to target summer flounder as they migrate to deeper waters. Accordingly, I am recommending increasing the September 1 – September 31 trip limit to 1,500 pounds, provided 20% of the quota remains available.

Fall Fishery Trip Limits

Typically, by October 1 the summer flounder resource has moved out of state waters and the fishery is predominantly occurring offshore in federal waters. Accordingly, DMF and the MFAC have managed the October 1 – December 31 fishery similar to the Period I fishery by establishing an elevated trip limit to encourage vessels to land product lawfully harvested in federal waters in Massachusetts' ports. Public comment generally favored this approach. For these reasons, I am recommending increasing the regulatorily established trip limit from 3,000 pounds to 10,000 pounds, provided more than 5% of the annual quota remains; if less than 5% of the quota remains the trip limits for the September 1 – September 30 remain in place. This is commensurate with the 2022 in-season adjustment enacted for this period.

Small Mesh Bycatch Allowance
The interstate and federal fishery management plans establish a 100-pound summer flounder bycatch limit when fishing with net mesh less than 5.5" diamond or 6" square. Our current state regulations go a step further and implemented this 100-pound limit on any vessel possessing more than 250 pounds of squid. This requirement was implemented in 2022 when we revised the summer flounder fishing seasons to allow the directed summer flounder fishery to occur concurrent with the squid fishery. The purpose of the rule was to eliminate the opportunity to unlawfully target summer flounder with small mesh. However, an unintended consequence was that it restricted the ability of offshore trawlers to fish with both large mesh and small mesh to target summer flounder and squid during the same trip. Additionally, if the vessel were permitted in another state (e.g., Rhode Island) they would land the catch there, as other states do not have this additional restriction.

To better accommodate the landing of fish in Massachusetts, I proposed amending the bycatch allowance rule to match the federal and interstate FMPs and apply the 100-pound bycatch limit only when fishing with small mesh and not apply it to vessels in possession of more than 250 pounds of longfin squid. There was limited public comment and testimony on this proposal and the comment received did not object to it. Accordingly, I am moving to recommend the MFAC vote in favor of this regulatory amendment.

Landing Window
Historically, DMF prohibited the offloading of summer flounder between 8PM and 6AM. This was done as a measure to facilitate enhanced enforcement, as there was concern that the trip limits were being exceeded by vessels landing under the cover of darkness. With higher trip limits, the incentive to bring in non-conforming quantities of fish is lower.

At the December 2022 public scoping meeting, DMF heard from dealers and commercial fishers regarding how the landing window has become inconvenient and makes operations less efficient, particularly during the summertime period. Given the economics of the inshore summer flounder fishery in recent years, fewer dealers are sending fewer trucks to Cape Cod ports to pick up catch. With the summertime congestion on the Cape, it becomes difficult for dealers to service the various ports from Woods Hole to Chatham where vessels may be landing. Having to offload vessels by 8PM creates a time crunch for dealers and fishermen alike. As a result of this, commercial fishers may have to wrap up their day early to meet the truck at the dock. This is time they could spend actively fishing, particularly given elevated seasonal fishing limits and the fact that the summertime night fishing prohibition does not go into effect until ½ hour after sunset, which frequently occurs after 8PM from late-April through late-August.

Accordingly, I took public comment on adjusting the landing window by two hours to allow landing until 10PM nightly. Comments received were generally supportive or did not object; however, some commercial fishers felt the existing landing window was sufficient to accommodate offloading. I also consulted the Massachusetts Environmental Police on this action. As such, I am recommending the MFAC vote in favor of modifying the landing window so that it occurs from 6AM to 10PM, rather than 6AM to 8PM.

Attached
Written Public Comment

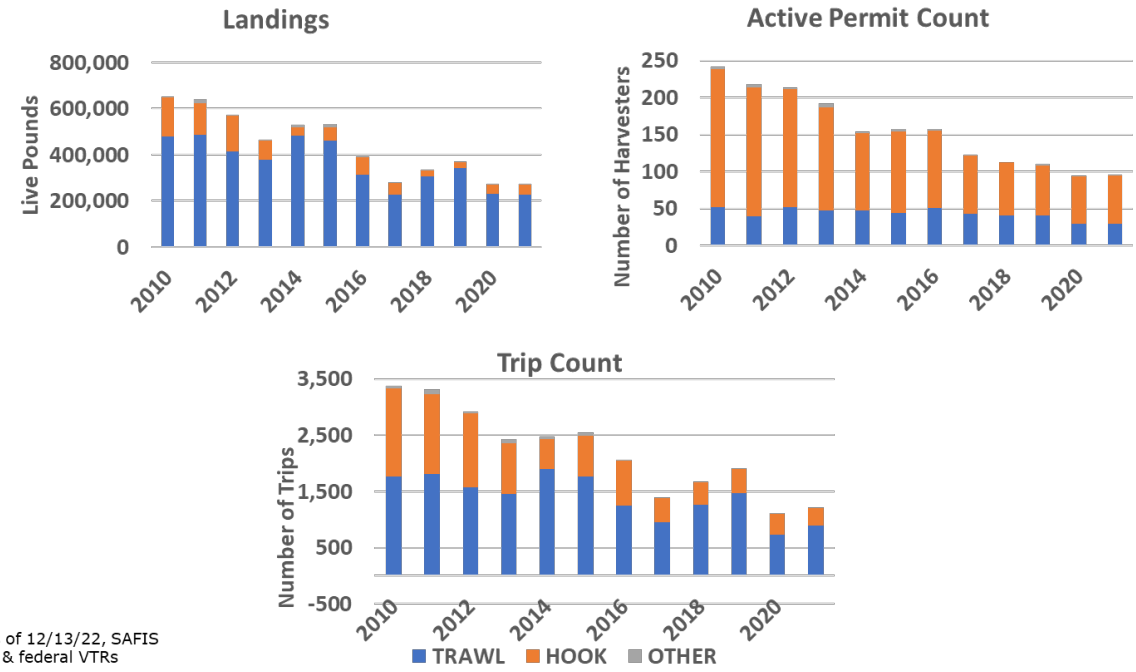
Table 1. Massachusetts Annual Summer Flounder Quota (2017 – 2023)

Year	Quota (lbs)*
2017	389,573
2018	413,361
2019	741,532
2020	795,584
2021	1,025,159
2022	1,391,379
2023	1,358,834
* Quotas are adjusted for annual transfers	

Table 2. Massachusetts Annual Quota and Landings (2017 – 2023)

Year	Quota (lb)*	Landings (lb)	Percent Utilized
2017	389,573	419,714	108%
2018	413,361	427,167	103%
2019	741,532	551,267	74%
2020	795,584	700,390	88%
2021	1,025,159	679,914	66%
2022	1,391,379	872,386	63%
2023	1,358,834	323,541	23.8%
* Quotas are adjusted by transfers. ** Landings for 2023 current as May 9, 2023			

Figure 1. Landings and Effort Trends by Gear Type for Inshore Summertime Summer Flounder Fishery



Data as of 12/13/22, SAFIS eTRIPS & federal VTRs

Figure 2. Ex-Vessel Value Trends in Commercial Sumer Flounder Fishery 2019 – 2022

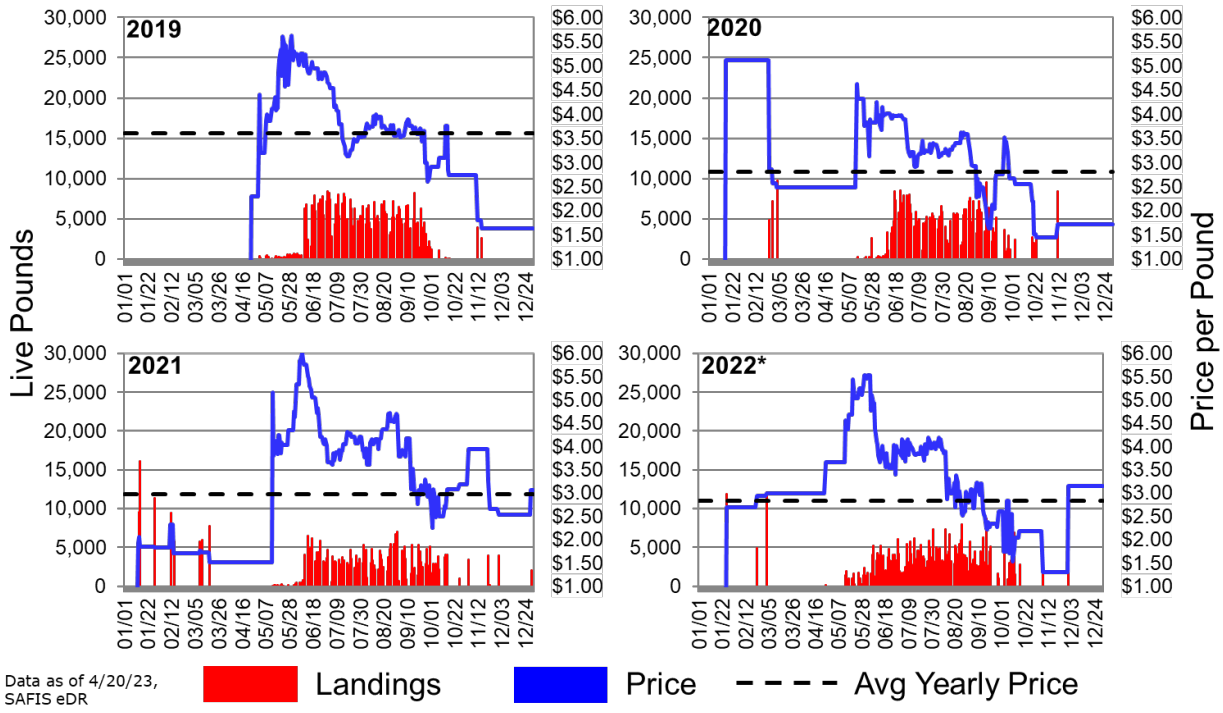
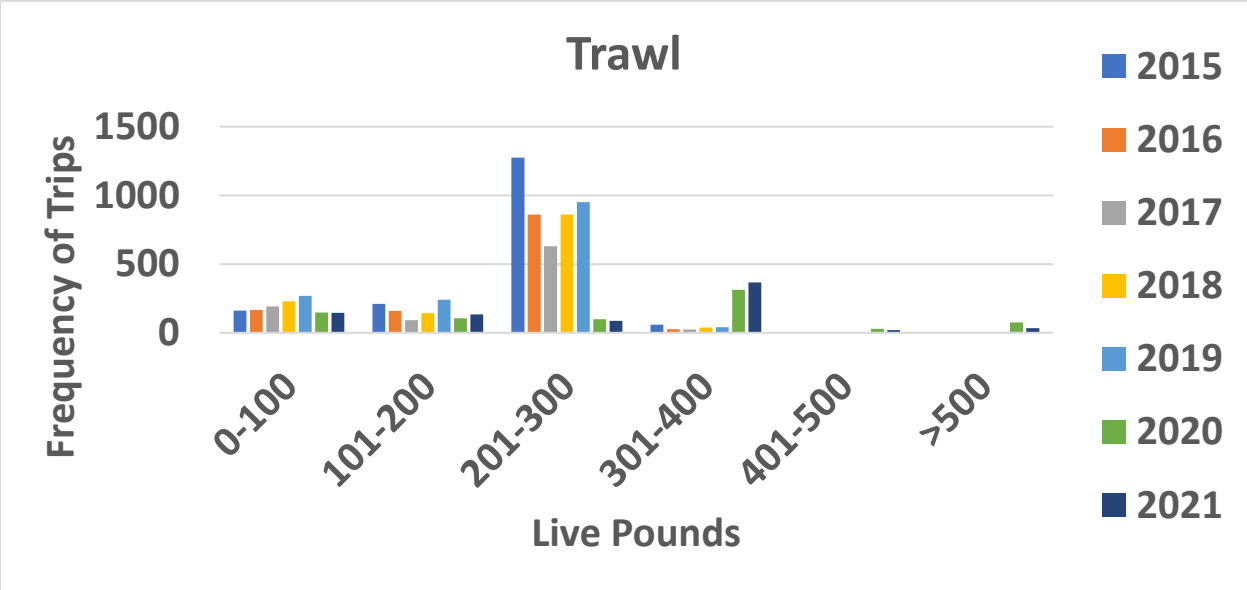


Figure 3. Frequency of Trawl Fishery Landings (#trips) by 100-pound Bins (2015 – 2021)



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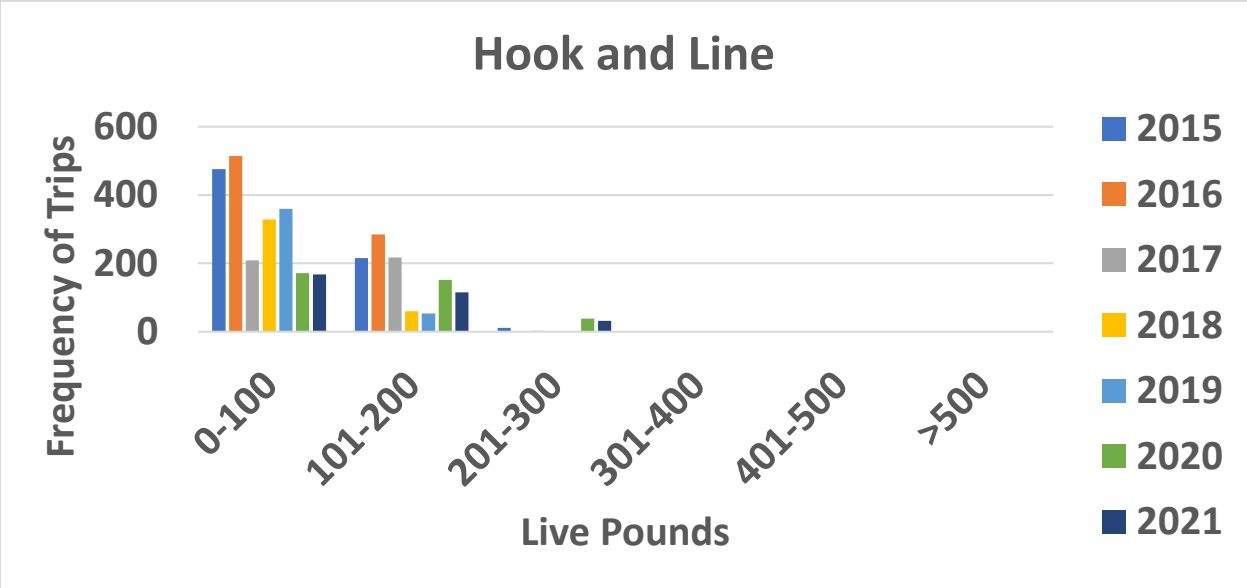

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MAURA T. HEALEY, Governor | KIMBERLEY DRISCOLL, Lt. Governor | REBECCA L. TEPPER, Secretary | THOMAS K. O'SHEA, Commissioner | DANIEL J. MCKIERNAN, Director

MEMORANDUM

TO: Marine Fisheries Advisory Commission

FROM: Daniel McKiernan, Director

DATE: May 10, 2023

SUBJECT: **Commercial Menhaden Fishery Recommendation**

Overview

My recommended revisions to the commercial menhaden regulations are enumerated below. These recommendations were informed by public comment made during the state's public hearings on April 24 and 25 and written comment collected during March 31–May 1 (attached), as well as prior scoping meetings in September 2022 and January 2023. Revisions from the public hearing proposal are underlined.

As described in my February 8 public hearing proposal memo, the overarching theme of these regulatory changes is to respond to revisions in the interstate fishery management plan requirements, manage the state's quota in a manner that balances various stakeholder interests (both within the commercial fishery and beyond to include recreational fishery and non-user groups), and improve compliance, enforcement, accountability, and transparency of measures. Please refer to that memo for more background information and rationale specific to each proposal[1]. This memo will focus on the public comment and changes from the public hearing proposal.

Recommendations

1) Define the following gear groupings for the harvest of menhaden:
    a. Small-scale directed gear: cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets.
    b. Non-directed gear: pound nets, anchored/stake gillnets, trammel nets, drift gill net, trawls, fishing weirs, fyke nets, and floating fish traps.

    Current regulations do not define these gear groupings.

2) Adopt a June 15 menhaden fishery season start date and restrict landings prior to this date to small-scale directed and non-directed gears only (i.e., no purse seines) at a 6,000-pound limit harvested from state waters, with an exception for limited access weir fishers to land at a 120,000-pound limit.

[1] Available within the MFAC's February 13, 2023 meeting materials.

Current regulations include a June 1 start date for any landings above 6,000 lb (except by weir), with purse seines restricted to a 450' long by 48' deep maximum size. Harvest is not currently restricted to state waters.

3) Revise the limited access fishery's quota use triggers and trip limits, as follows:
    a. 120,000-pound trip limit until 50% quota use
    b. 25,000-pound trip limit from 50% quota use until 90% quota use, rather than 85% as proposed for public comment.
    c. 6,000-pound trip limit from 90% quota use until 100% quota use, unless the 90% trigger is tripped after August 31, in which case the trip limit shall remain 25,000 lb until 100% quota use. This additional date-specific element for the trigger was not included in the public hearing proposal.

Current regulations include a 125,000-lb trip limit until 85% quota use and a 25,000-pound trip limit until 100% quota use.

4) Establish the following restrictions on the use of purse seines:
    a. Open fishing days of Monday–Thursday until 50% quota use, thereafter Monday–Friday until 100% quota use.
    b. State-wide closed days of Saturdays, Sundays, Memorial Day, July 4, and Labor Day
    c. State-wide, year-round night fishing closure
    d. Year-round closure of Buzzards Bay
    e. Friday closed day in Beverly Harbor
    f. Year-round closures in certain Boston Harbor areas (i.e., Charles River, Mystic River, Chelsea River, Dorchester Bay, Neponset River, Marina Bay, Weir River, and Winthrop Harbor, all upstream of established landmarks, and "A Anchorage Areas" with an exception for off Merrymount in Quincy)
    g. A maximum purse seine size of 600' in length within the Inshore Restricted Waters. This action eliminates the hand haul and 400' x 60' maximum net size requirements for the areas of Hingham Bay, Winthrop Bay, and Quincy Bay within Boston Harbor, thus enabling mechanical hauling of a 600' length net consistent with other open Inshore Restricted Waters.
    h. All purse seine nets subject to net size restrictions must be annually inspected and tagged by DMF prior to fishing for compliance with these restrictions. After its certification, any net that is altered with regards to the net size restrictions must be re-inspected prior to its use. An exemption will be granted for nets certified (with documentation) in other states under a comparable program.
    i. The Director may issue permit conditions further affecting the use of purse seines.

Current regulations do not address the use of purse seines, rather permit conditions have been used to establish parts b–g above.

5) Establish the following restrictions on the use of carrier vessels:
    a. Only limited entry permit holders operating during the 120,000-lb and 25,000-lb fisheries (i.e., from June 15 until 90% quota use) may use a carrier vessel.
    b. The harvester vessel may offload to one or more carrier vessels per day, provided the applicable limited entry trip limit is not exceeded in the aggregate. The public hearing proposal erroneously indicated that a harvester vessel would be limited to using a single carrier vessel, which is counter to the current allowance that DMF did not intend to change.

c. The carrier vessel is restricted to receiving menhaden from a single harvester vessel per day (and only on open purse seining days); restricted to receiving, possessing, and landing the applicable limited entry trip limit; and may land only once per day. The underlined section previously indicated that a carrier vessel would be restricted to receiving menhaden once per day, which was not clear. For example, a harvester vessel may make multiple sets and offload each set's catch to a carrier vessel (subject to the trip limit in the aggregate); however, the carrier vessel cannot receive fish from another vessel during the same trip or day and may only land once per day.
d. Year-round prohibition on the use of carrier vessels in Boston Harbor.

Current regulations do not address the use of carrier vessels, rather permit conditions have been used to restrict the use of carrier vessels to only limited entry permit holders during the quota-managed period; limit the number of harvester vessels from which a carrier vessel may receive fish (1–2 in recent years) and establish the carrier vessel's trip limit; and prohibit carrier vessels in Boston Harbor.

6) Restrict landings after the quota is taken to small-scale directed and non-directed gears only (i.e., no purse seines) at a 6,000-pound limit harvested from state waters.

Current regulations only prohibit purse seines greater than 450' long by 48' deep after the quota is taken, without the restriction that catch by within state waters.

7) Restrict landings during the Episodic Event Set Aside (EESA) fishery—in the event this additional in-season quota is available to Massachusetts—to a 6,000-lb trip limit (both limited access and open access) harvested from state waters; the limited access trip limit may be modified by the Director to a maximum of 120,000 pounds.

Current regulations set a 120,000-lb limited access trip limit (although permit conditions have been used to reduce this to be consistent with the trip limit just prior to the quota closure, i.e.,25,000 lb) and a 6,000-lb open access trip limit, harvested from state waters.

8) Beginning in 2024, require that all vessels used to carry or hold fish in the limited access fishery (i.e., harvester or carrier vessel) have their fish hold capacity certified and marked to demonstrate 25,000-lb and 120,000-lb storage levels by an accredited marine surveyor. Fish storage capacity over 120,000 lb does not need to be rendered unusable, as was proposed.

Current regulations do not address this issue.

9) Beginning in 2024, require the submission of daily electronic harvester reports prior to landing from all limited access permit holders.

Current regulations require all limited access permit holders and participants in the EESA fishery to report daily as a bait dealer.

10) Adopt a June 14, 2023 control date for Menhaden permit endorsements and for CAP-Purse Seine permit endorsements. (Use of the control date is subject to future rulemaking.)

Current regulations do not address this issue although menhaden permit endorsements are limited to renewals only.

Public Comment and DMF Responses

Comment Resulting in Changes to the Public Hearing Proposal

- Comment: Concern that the 85% trip limit trigger would result in quota going unused and access to the EESA being forfeit (eventually resulting in a smaller allocation for MA), and

that the Director's ability to make an in-season trip limit adjustment would not be expeditious enough.
Response: DMF used an admittedly conservative estimate of daily landings for the 6,000-lb trip limit fishery to project season length; this was based in part on prior scoping comment favoring an open season extending into the fall for small-scale access. In an effort to balance these competing motivations, DMF supports moving the trigger to go to the 6,000-lb trip limit to 90%, which is roughly projected to result in full quota utilization on August 30 (Figure 1). Note that this projection also ignores the potential for weir landings prior to June 15. If this projection is accurate, EESA access could be possible if set-aside remains. An additional condition based on season date would also be specified in the regulations; that the 90% quota use trigger needs to be reached prior to September 1 in order to move the fishery into the 6,000-lb limit. For example, if the fishery takes until September 15 to reach 90% quota use, the trip limit will stay at 25,000 pounds to encourage full quota utilization when fish availability and effort tend to be more variable.

- Comment: Concern that the vessel hold certification language about fish storage capacity above 120,000-lb being rendered unusable was impractical, unnecessary, and open to different interpretation.
  Response: DMF based this language on RI's rule but agrees with these comments. The marking of the hold's capacity will sufficiently serve the purpose of the regulation.

- Comment: Clarification was sought on several of the carrier vessel related restrictions in the public hearing proposal, including that a harvester vessel be restricted to unloading to a single carrier vessel, and a carrier vessel be restricted to receiving fish once per day.
  Response: These restrictions were erroneously included in the public hearing proposal and have been corrected herein. Consistent with current practice, an authorized harvester vessel may offload menhaden to more than once carrier vessel per day (provided the applicable limited entry trip limit is not exceeded in the aggregate), but each carrier vessel is restricted to receiving from a single harvester vessel per day. Additionally, the carrier vessel may offload from the same harvester vessel more than once in the day (for example, if the harvester vessel needs to make multiple sets to achieve the applicable limited entry trip limit in the aggregate) but is limited to a single landing per day consistent with the trip limit.

- Comment: Request for an exemption to the net certification requirement for nets certified by another state with a comparable program (currently limited to RI).
  Response: DMF agrees that this is a reasonable request to avoid a redundant burden on fishery participants without undermining the underlying objective.

Comment Not Resulting in Changes to the Public Hearing Proposal

- Comment: Request to exempt mid-water trawl gear from the June 15 start date, indicating that schools of menhaden are occasionally observed when targeting other species offshore, and would like to catch and land.
  Response: Such an allowance could encourage directed effort and large-scale landings prior to June 15, undermining the intent of the rule. The comment indicated that these schools could be avoided by the mobile gear in question unlike the stationary weir fishery for which an exemption is provided.

- Comment: Request to retain the June 1 start date on various grounds, including: fish will have already left certain areas of the Massachusetts coast by June 15 and/or learn to bypass Massachusetts, resulting in less Massachusetts access and quota underutilization; the

Massachusetts fishery should harvest the fish before they get to Maine; inshore effort and vessel congestion will be worse with a later opening resulting in localized depletion, impacts to menhaden predators (e.g., striped bass), and worsened user-group conflict.
Response: These comments to encourage earlier, more rapid quota use were counter to the vast majority of fishery participants that desired a longer season, and the June 15 season start is an integral part of the quota management approach to result in a lengthy season. Menhaden seasonal distribution can be highly variable year-to-year and within a season, and the concerns about availability and concentrated effort seem like conjecture at this point.

- Comment: Request for a modified trip limit schedule, specifically a 70% quota use trigger to scale down from 120,000 lb to a 40,000-lb trip limit, and a 90% trigger to scale down to 6,000 lb; an additional comment supported a 40,000-lb trip limit in lieu of the 25,000-lb limit to better align with some vessels' capacity, possibly applied to bigger boats only.
  Response: DMF's use of the 50% quota trigger is based on allocating to the large-scale fishery a similar amount of quota (in weight) as the 85% trigger did in prior years' under a smaller starting quota. We continue to support this rationale to preserve prior levels of access across the diverse fleet and extend season length (a 70% quota trigger to move to 40,000 lb/trip would likely result in a mid-August closure), and not exacerbate the potential for early season oversupply as others commented upon. Regarding the 40,000-lb trip limit proposal, DMF prefers to retain the uniformly-applied and long-standing 25,000-lb limit that reflects upon trip sizes during the historical reference period and which will better control the pace of landings.

- Comment: Request for a weekly landing limit for the 6,000-lb fishery (i.e., 30,000 lb per week in lieu of five days at 6,000 lb).
  Response: This request was based on Maine allowing a weekly limit during its quota managed period. However, Maine's management is notably different than Massachusetts in that it does not apply triggers and variable trip limits to reflect the different capacity of vessels involved in the fishery; rather Maine applies a uniformly low trip limit throughout the quota, but allows a weekly limit to reflect the different capacity of vessels involved. Our 6,000-lb limit is meant to accommodate small-scale landings by those without the history in the fishery needed to have a limited access menhaden permit; adopting a weekly limit larger than the limited entry daily trip limit would seem to encourage more new entrants when there is already a concern about increased participation in the fishery. In other fisheries where MA has allowed or considered a weekly limit (e.g., scup, summer flounder), the aim has been to encourage full quota utilization (which has not been a problem in the menhaden fishery) and to better accommodate multi-day fishing trips (which is not the practice in the nearshore, small boat menhaden fishery). Such allowances come with a daily reporting requirement which is not in place for the open access fishery yet. If discards are a concern with the 6,000-lb limit, DMF could consider a smaller net maximum as an alternative to a weekly trip limit.

- Comment: Request for Friday to be closed to purse seining throughout the season due to heightened recreational effort.
  Response: DMF is trying to balance this issue by closing Fridays to purse seining during the large-scale fishery when half the quota will be landed, yet accommodate business practices of smaller vessels that sell locally into the fresh market with Fridays reported to be an important day. DMF will continue to monitor for user group conflict and respond as needed.

- Comment: Opposition to the control date because it would discourage new entrance into the fishery, and/or negatively impact those that have just recently made an investment in preparation to enter the fishery.
  Response: The purpose of adopting a control date is to put fishery participants (current or prospective) on notice that their future access may be restricted, so that they may make sound business decisions. One inherent consequence of this may be to discourage new entrance. How DMF may (or may not) utilize the control date is a separate action, subject to additional public input and rulemaking, that can make various accommodations. It would be patently unfair to backdate a control date in that rulemaking, as suggested in one comment.

- Comment: Opposition to lifting the hand haul and smaller net size requirements for the "restricted" inshore net areas of Boston Harbor.
  Response: This opposition was from an individual without access to the inshore net areas. DMF supports uniform implementation of the 600' net maximum and mechanical haul allowance for all inshore net areas at this time, given the additional controls being layered on purse seine activity and carrier vessel use (e.g., purse seine closed days, carrier vessel area prohibition in Boston Harbor).

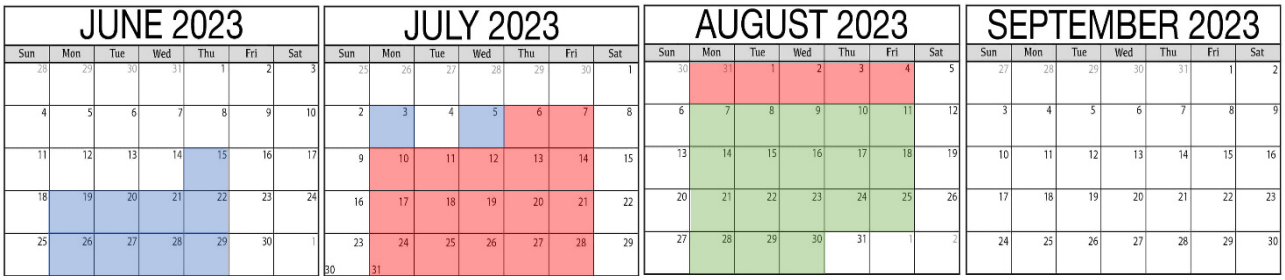
- Comment: Request to make Salem Sound an inshore net area, thereby reducing effort (because inshore net permits are limited) and addressing concerns about localized depletion and user-group conflict.
  Response: This request was from an individual with access to the inshore net areas. DMF did not propose this for public comment and could not adopt such a regulation through this round of rulemaking. The effect of newly restricting such an area to specific users would require considerable evaluation.

- Comment: Request to restrict menhaden purse seining in the Taunton River upstream of the Veteran's Memorial Bridge (Rt 6), either entirely or until after mid-July when striped bass have left, on the basis of localized depletion and predator/prey impacts.
  Response: This request was from a charter boat captain and not dissimilar from arguments about user-group conflict that DMF hears about other areas that remain open to purse seining (e.g., Boston Harbor, Salem Sound). Shifting the purse seine opening date to June 15 at reduced open days will likely address some of this individual's concerns. Additionally, DMF did not propose this for public comment and could not adopt such a regulation at this time.

- Comment: Request to double the surface gillnet maximum length size to assist this small-scale gear in landing the 6,000-lb limit and improve its economic viability.
  Response: While DMF acknowledges that this is a labor-intensive harvest method with few active participants currently, increasing the long-standing net size to make this fishery more profitable may encourage more effort and landings—particularly after the state's quota is met and purse seines are prohibited. This is contrary to the intent of Addendum I to make the states' fisheries more accountable to the quota. Accordingly, DMF did not propose this for public comment and could not adopt such a rule change at this time, but may be willing to reconsider as the impact of new regulations in Massachusetts and elsewhere transpire.

Attachment
Written Public Comment

Figure 1. Projection for Quota Managed Fishery season length under <u>recommended</u> quota use triggers, trip limits, and purse seining closed days, assuming similar daily catch rates as 2022. Blue days = 120,000-lb trip limit until 50% quota use (5.4 mlb of quota access); Red days = 25,000-lb trip limit until 90% quota use (4.3 mlb of quota access); Green days = 6,000-lb trip limit until 100% quota use (1.1 mlb of quota access).



The Commonwealth of Massachusetts
Division of Marine Fisheries

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MAURA T. HEALEY, Governor | KIMBERLEY DRISCOLL, Lt. Governor | REBECCA L. TEPPER, Secretary | THOMAS O'SHEA, Commissioner | DANIEL J. MCKIERNAN, Director

MEMORANDUM

TO: Marine Fisheries Advisory Commission (MFAC)

FROM: Daniel J. McKiernan, Director

DATE: May 10, 2023

SUBJECT: **Recommendation on Groundfish Maximum Retention and Electronic Monitoring Action to Complement Federal Rules**

Recommendation

I recommend the MFAC vote in favor of adopting regulatory language to allow (1) authorized commercial fishers to possess, land, and sell and (2) authorized dealers to acquire and possess groundfish that do not conform to the state's minimum size standards provided they were lawfully caught in federal waters by sector vessels participating in the federal maximum retention and electronic monitoring program (MREM).

Discussion

There was very limited public testimony and no written public comment received on this item. The public testimony came from Ed Barrett at the Plymouth public hearing on April 24. He noted that the state's proposal did not extend to the retention of non-conforming sized fish taken in state waters by federal permit holders participating in the MREM program and federal rules prohibit their permit holders from discarding legal fish. Accordingly, there is management incompatibility between the state and federal jurisdiction, and as a result, sector vessels participating in the MREM program may be potentially restricted from fishing for groundfish in state waters, as they would not be allowed to discard fish less than the state's minimum size standards.

I am not altering my recommendation to accommodate the retention of sub-legal sized fish caught in Massachusetts state waters based on this public comment. The recommendation is consistent with how DMF managed the initial pilot program and is currently managing implementation through Letter of Authorization. At present, only two vessels participate in the federal MREM program (one in Massachusetts) and there is precedent for DMF to require federally permitted sector vessels to adhere to more restrictive state rules. Currently, sector vessels are subject to our state waters groundfish trip and size limits when fishing in state waters. However, if the MREM program is to expand then this would be an issue that warrants further analysis.

Background

At the start of the 2018 federal fishing year (May 1, 2018 – April 30, 2019), the Gulf of Maine Research Institute (GMRI) partnered with NOAA Fisheries, the Northeast Fisheries Science Center (NEFSC), and the New England states to develop an MREM program for the federal sector managed multi-species groundfish fishery. In summary, vessels who chose to voluntarily participate in the MREM research program were allowed full retention of multi-species groundfish catch (i.e., no regulatory discarding)

subject to electronic monitoring (EM) supplemented by dockside monitoring. Its purpose was to create incentives for sector vessels to adopt EM; develop standards to effectively implement MREM on a broader scale; identify challenges; and inform future policy making decisions regarding EM programs in the region. The GMRI released an economic report on this pilot program in April 2022.

This program was initially implemented by NOAA Fisheries via a Scientific Research and Exempted Fishing Permit (EFP) accompanied by state authorizations to participating fishers and dealers in the New England states where the fish were being landed and sold. It has been ongoing for the past several years, has involved a few Massachusetts commercial fishing permit holders and seafood dealers, and was generally viewed favorably by the research partners and seafood industry participants. In 2022, the New England Fishery Management Council proceeded to formally adopt this program as part of Amendment 23 to the Northeast Multispecies Fishery Management Plan (FMP). Then Amendment 23 and the MREM program became part of the federal code of regulations on January 9, 2023. For the first part of 2023, DMF has been accommodating the MREM program through Letters of Authorization while we work on developing and implementing this recommendation.

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MAURA T. HEALEY, Governor | KIMBERLEY DRISCOLL, Lt. Governor | REBECCA L. TEPPER, Secretary | THOMAS O'SHEA, Commissioner | DANIEL J. MCKIERNAN, Director

MEMORANDUM

TO: Marine Fisheries Advisory Commission (MFAC)

FROM: Daniel J. McKiernan, Director

DATE: May 10, 2023

SUBJECT: **Emergency Regulations Affecting Recreational Striped Bass Slot Limit**

On May 2, 2023, the Atlantic States Marine Fisheries Commission's (ASMFC) Striped Bass Management Board (Board) voted to take emergency action to implement a 31" maximum size limit for all recreational fisheries, to be implemented as soon as possible and no later than July 2, 2023. The emergency action requires coastal states with ocean fisheries to implement a 28" to less than 31" slot limit for all recreational anglers, replacing the current 28" to less than 35" limit. The ASMFC will host four virtual informational hearings between May 17 and 31 (see the ASMFC press release for details).

This action was taken because recreational harvest nearly doubled from 2021 to 2022. This unexpectedly high harvest greatly reduced the probability of rebuilding the currently overfished striped bass stock by 2029, which is the goal of the interstate plan. This increased harvest was largely driven by the dominant 2015 year-class ageing into the harvestable size range, coupled with a nearshore abundance of forage attracting striped bass and the anglers who pursue then. For instance, DMF recreational sampling data from last year indicate that the 2015-year class made up 55% of harvested fish in Massachusetts.

The narrowed slot limit is expected to reduce harvest in 2023 by protecting more than half of that dominant 2015 year-class (compared to nearly zero protection with the 28" to less than 35" slot limit). The 2015 year-class is important to the future of striped bass because it is one of the few large year-classes produced over the past 20 years. We have been in a period of mostly below average recruitment since 2005, with the past four years being among the lowest recorded (Figure 1). With diminished recruitment, it is important to protect this 2015 year-class and provide it as many opportunities to reproduce as possible, and hopefully create strong year-classes should environmental conditions allow.

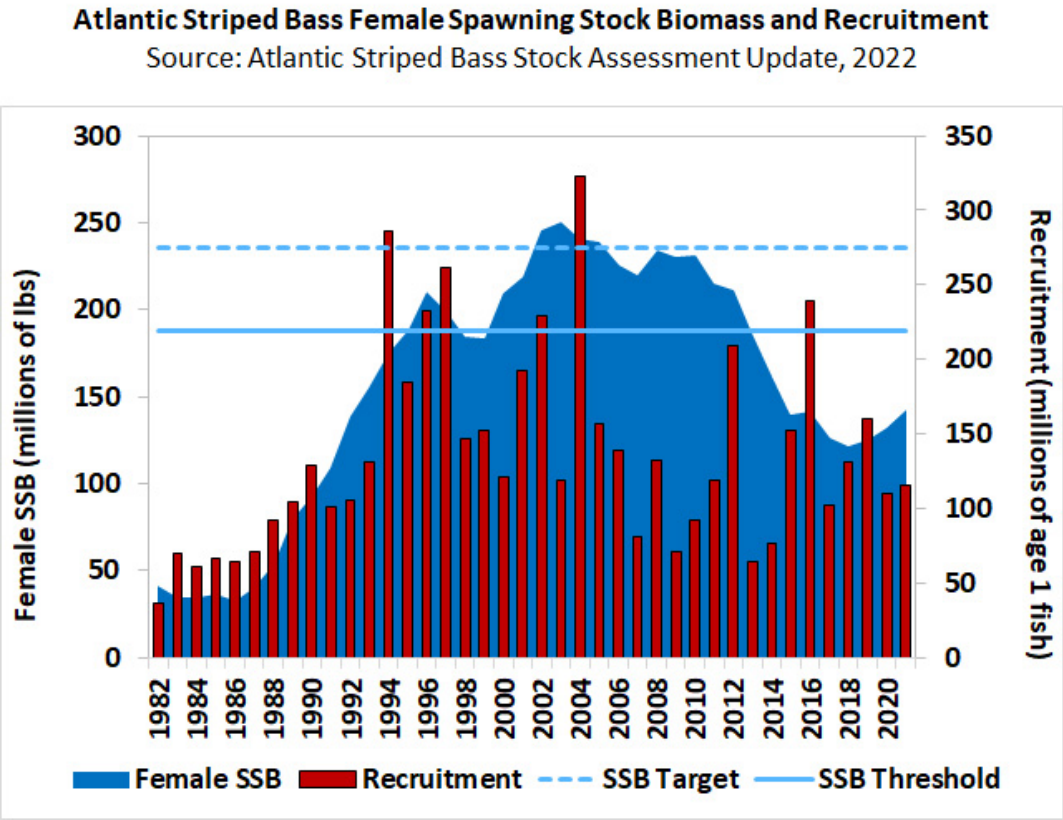
DMF has initiated the emergency rule making process to implement these measures. While the Board's motion sets a July 2 implementation deadline, the New England states are pursuing a more expedited rule making timeline with the goal of adopting this new slot limit prior to Memorial Day weekend. This expedited schedule should maximize the conservation benefits of the rule, particularly in New England as June is a peak fishing month.

I am currently requesting the Administration approve these new rules by Friday, May 26. Based on this schedule, I anticipate a state public hearing in early July and a final recommendation being brought to the MFAC at a late summer meeting. Given these changes will be occurring in season and affecting our most popular recreational fishery, DMF is working on an extensive public outreach plan to advertise these rule change, which includes an extensive Frequently Asked Questions webpage (FAQ) to educate anglers on the rule change and why the striped bass stock is at risk despite strong fishing conditions last year. Once

approved, we will announce the date of the rule change through emails to permit holders, informing media outlets and tackle retailers, signage, and through our social media channels.

It should also be noted that the ASMFC also initiated an Addendum to the FMP for 2024 measures that will investigate a range of options to reduce mortality in both the commercial and recreational fisheries to get the stock back on track for rebuilding by 2029. Measures to be considered included revised size limits and seasonal closures. This more typical approach to management action will be informed by public comment, with hearings likely occurring in the fall to allow for final action in time for 2024 implementation. This addendum also allows for the Board to respond by Board action (not an addendum) to the results of future stock assessments the next several years to ensure swift responses when needed to meet the rebuilding goal.

Figure 1. Atlantic Striped bass Female Spawning Stock Biomass and Recruitment



ASMFC Striped Bass Board Actions
May 2, 2023

- ❑ Pass Addendum I
- ❑ Initiate Addendum II
- ❑ Emergency Action

Addendum I

Options to allow for interstate transfer of commercial striped bass quota

Options for Allowing the Voluntary Transfer of Ocean Commercial Quota

- ❑ Option A (status quo): Commercial quota transfers are not permitted.
- ❑ Option B: General commercial quota transfer provision (with 5% overfished conservation tax).
- ❑ Option C: Limited commercial quota transfer provision based on stock status.
- ❑ Option D: Board discretion commercial quota transfer provision (with 5% overfished
- ❑ conservation tax).
- ❑ Option E: Limited Board discretion commercial quota transfer provision based on stock
- ❑ status.

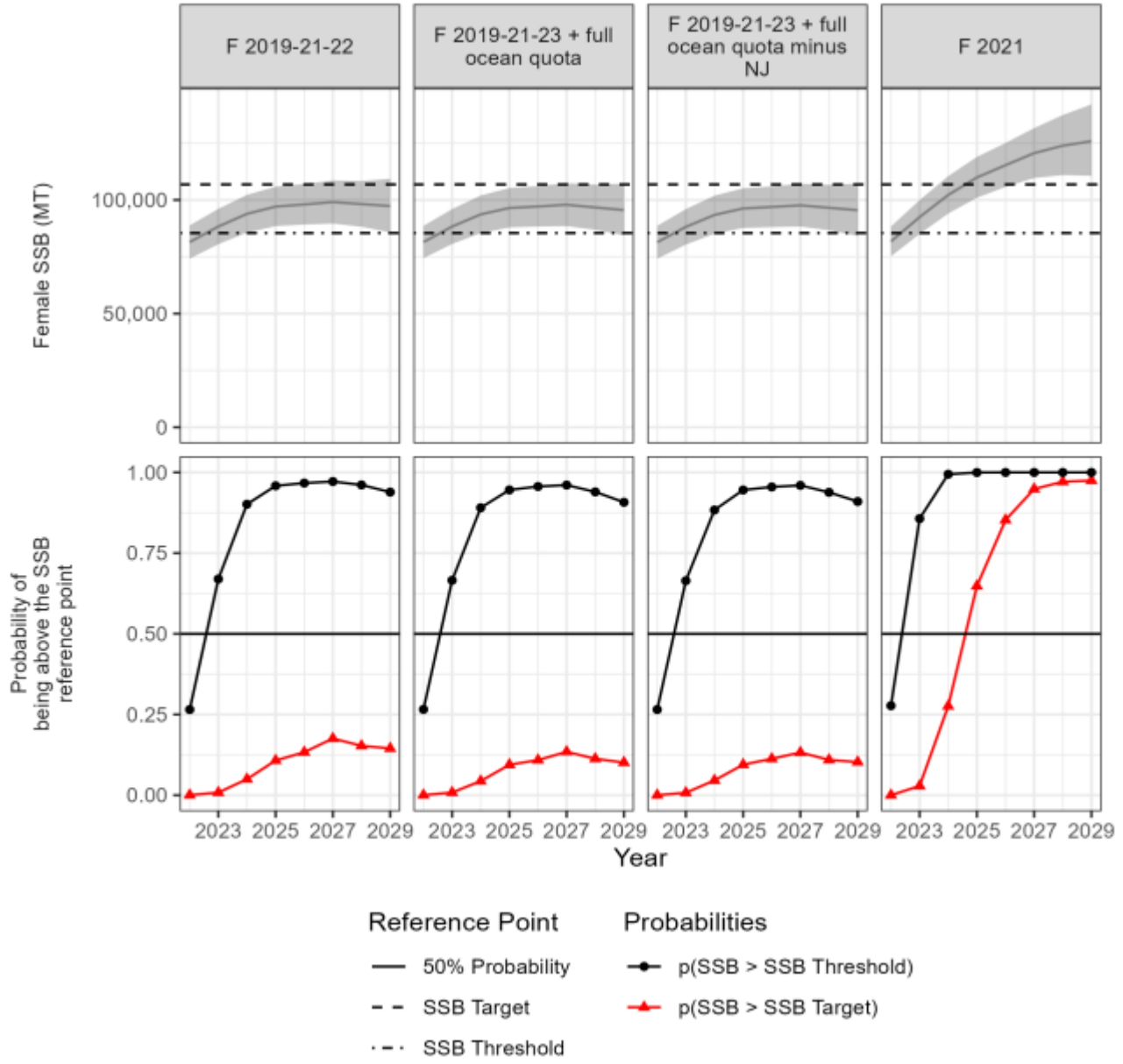
Projections by the TC showed utilizing the full commercial quota would have trivial effects on the re-building schedule but……

The Board approved Option E (10 in favor, 1 opposed, 2 abstentions, 3 null).

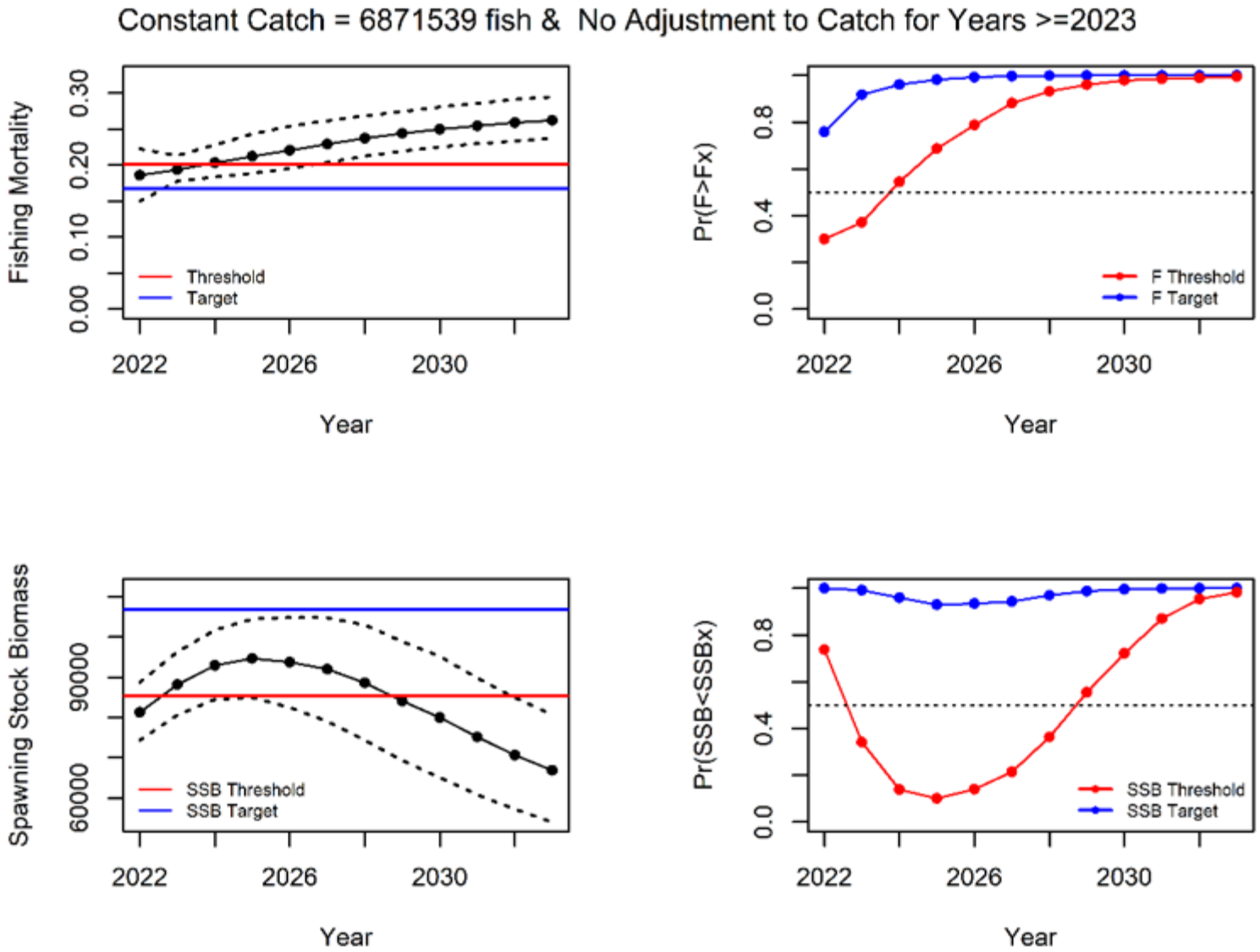
Table 1.

Description	Scenario	Year	Projected *F*	Pr SSB > target in 2029	Pr SSB > thresh-old in 2029
2021 Fishing Mortality from 2022 Stock Assessment Update	-	2022-2029	*F* in 2021	97.5 %	99.9 %
2022 Preliminary Removals	1	2022	*F* in 2022	15 %	94 %
		2023-2029	Average *F* (2019,2021, 2022)		
2022 Preliminary Removals + Full Ocean Quota in 2023	2	2022	*F* in 2022	11 %	91 %
		2023-2029	Average *F* (2019,2021, 2023+fullquota)		
2022 Preliminary Removals + Full Ocean Quota minus NJ in 2023	3	2022	*F* in 2022	11 %	91 %
		2023-2029	Average *F* (2019,2021, 2023+fullquota minusNJ)		

Figure 1 shows the SSB projection and the probability curves for reaching the SSB threshold and SSB target for each scenario. For comparison, Figure 1 also shows the SSB projection and probability curves associated with constant F_{2021} from the 2022 Stock Assessment Update.

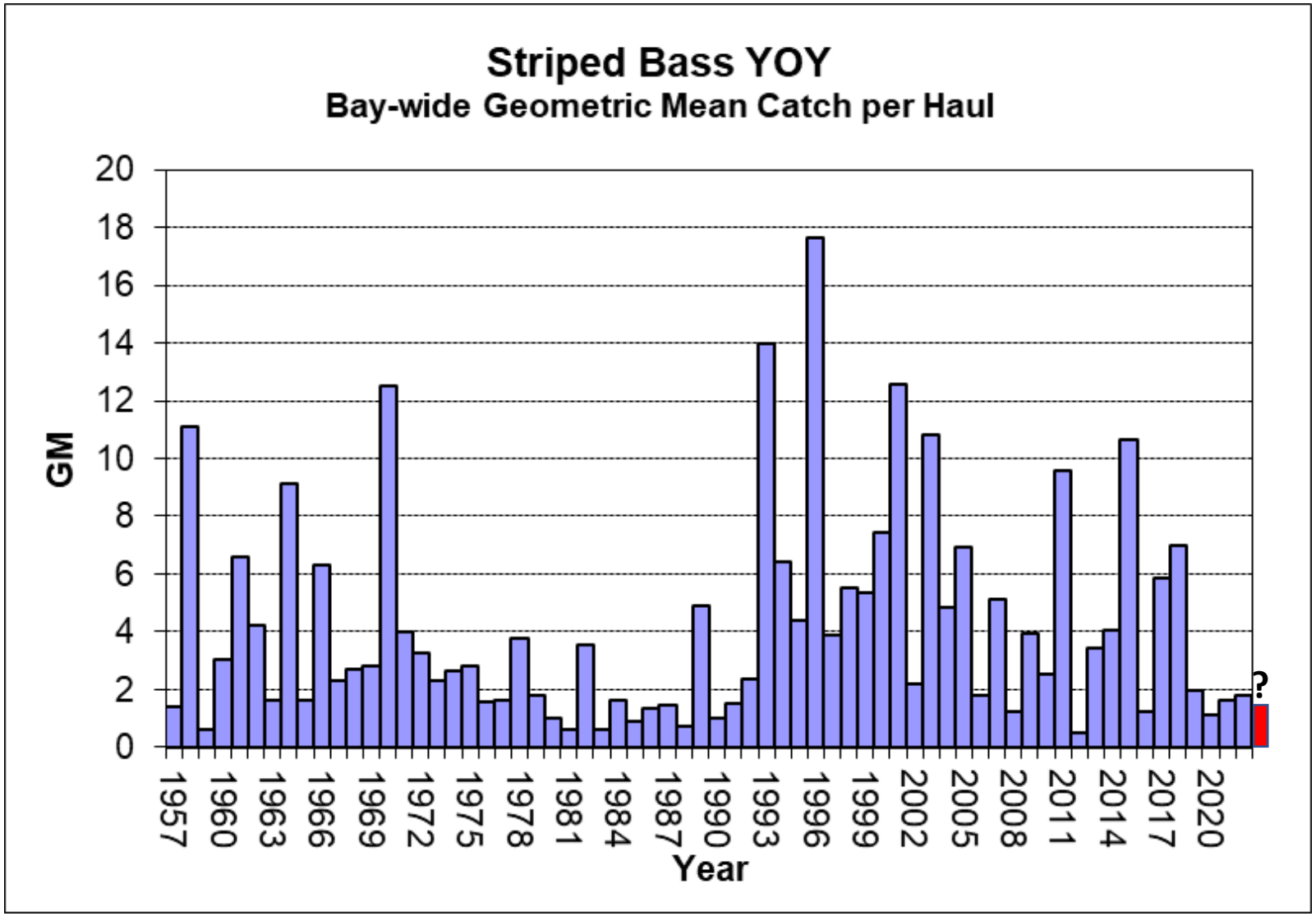

F 2019-21-22
F 2019-21-23 + full ocean quota
F 2019-21-23 + full ocean quota minus NJ
F 2021
Female SSB (MT)
100,000
50,000
0
Probability of being above the SSB reference point
1.00
0.75
0.50
0.25
0.00
2023 2025 2027 2029
Year
Reference Point
50% Probability
SSB Target
SSB Threshold
Probabilities
p(SSB > SSB Threshold)
p(SSB > SSB Target)

Resampling 2020-2023 Recruits for Age-1 Abundance Starting 2023

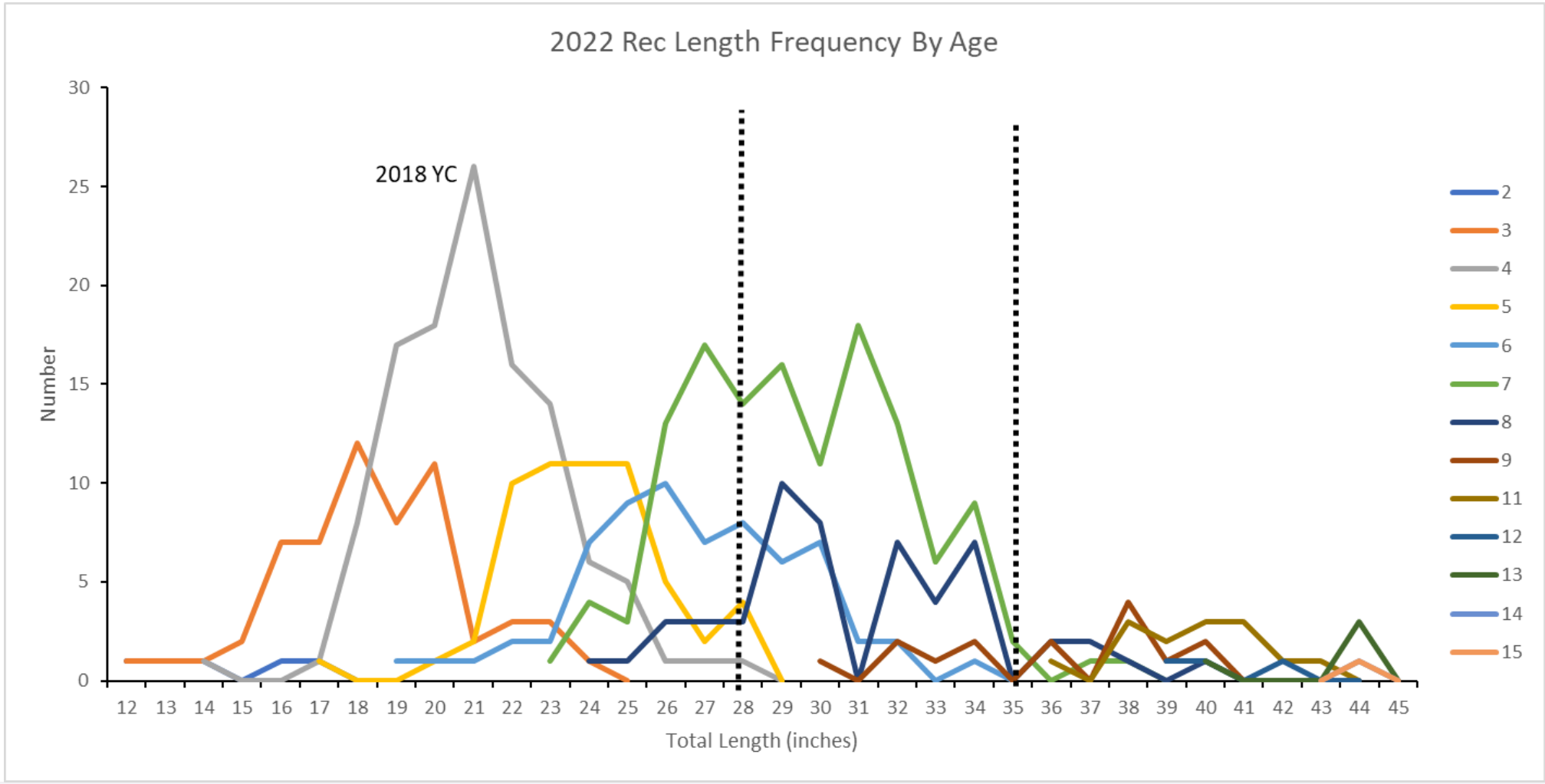


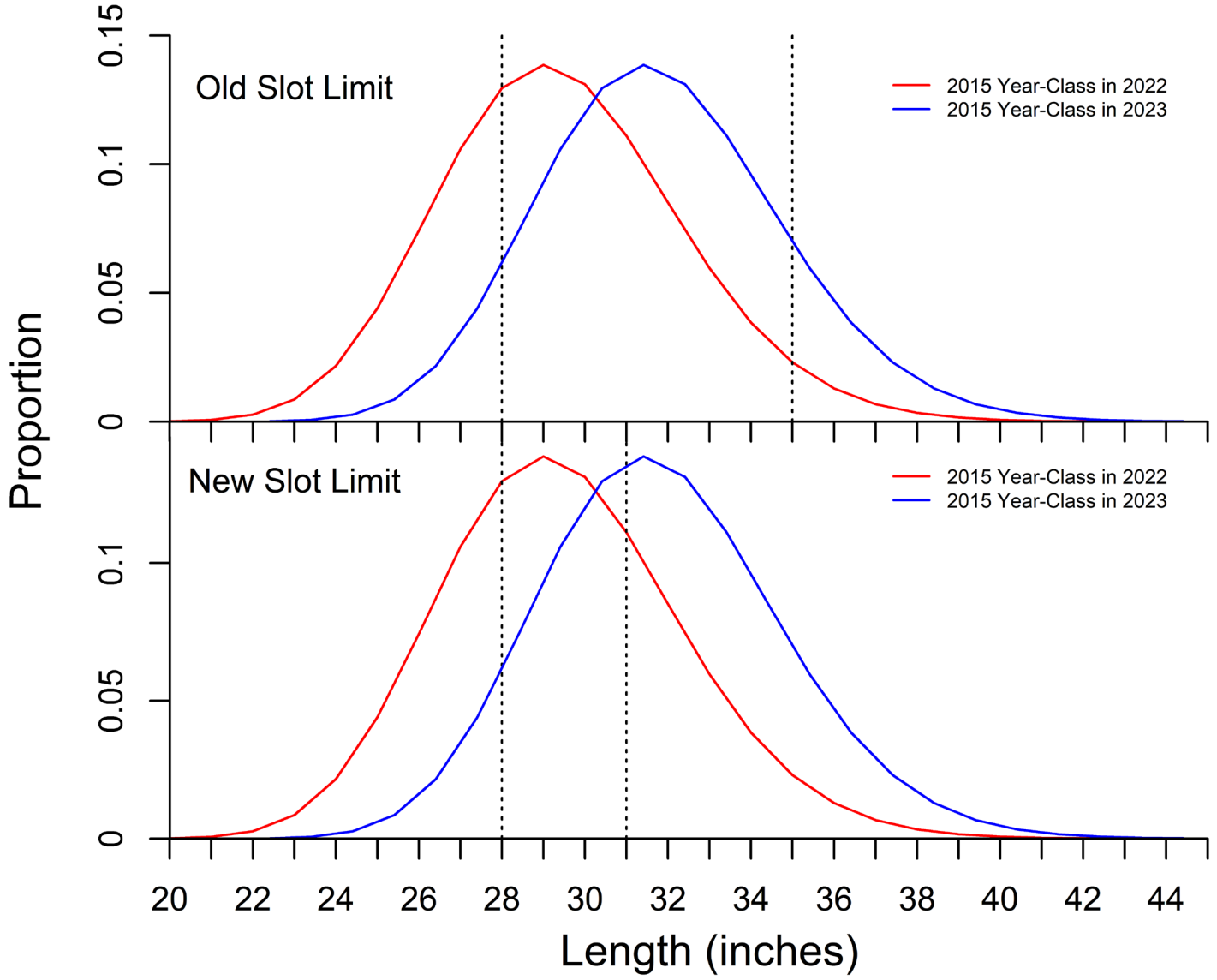
Time Series of Striped Bass Harvest (A+B1) From NC to ME

Year	Harvest	% increase
2000	**3097107**	**8%**
2001	**3784370**	**22%**
2002	**3991775**	**5%**
2003	**3948755**	**-1%**
2004	**4730984**	**20%**
2005	**4229788**	**-11%**
2006	**4285948**	**1%**
2007	**4749777**	**11%**
2008	**3862901**	**-19%**
2009	**4344309**	**12%**
2010	**4693674**	**8%**
2011	**5321295**	**13%**
2012	**4798748**	**-10%**
2013	**4046299**	**-16%**
2014	**5157759**	**27%**
2015	**4033746**	**-22%**
2016	**3085724**	**-24%**
2017	**3500434**	**13%**
2018	**2937912**	**-16%**
2019	**2244765**	**-24%**
2020	**2150937**	**-4%**
2021	**1709973**	**-21%**
2022	**1841901**	**8%**
2023	**3454022**	**88%**


Striped Bass YOY
Bay-wide Geometric Mean Catch per Haul
GM
20
18
16
14
12
10
8
6
4
2
0
?
1957
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
Year

Length Frequencies of the Recreational Catch in Massachusetts (from our SADCT Project)




Old Slot Limit
2015 Year-Class in 2022
2015 Year-Class in 2023
New Slot Limit
2015 Year-Class in 2022
2015 Year-Class in 2023
Proportion
0
0.05
0.1
0.15
20
22
24
26
28
30
32
34
36
38
40
42
44
Length (inches)

Move that the Striped Bass Board, by emergency action as outlined in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. 15 Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.

Motion made by Dr. Armstrong and seconded by Mr. Borden. Motion carries (15 in favor, 1 opposed (NJ))

Motion to Initiate Addendum II

Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F = 0.17). Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits. <u>The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g. currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%.</u>

Motion passes unanimously.

Atlantic States Marine Fisheries Commission

2023 Spring Meeting Summary

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

2023 Spring Meeting
May 1 – 3, 2023

For more information, please contact Toni Kerns, ISFMP, Tina Berger, Communications or the identified individual at 703.842.0740

Meeting Summaries, Press Releases and Motions

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AMERICAN LOBSTER MANAGEMENT BOARD (MAY 1, 2023)

Press Release

American Lobster Board Approves Addendum XXVII

Addendum Establishes Measures to Increase Protection of Spawning Stock Biomass of the Gulf of Maine/Georges Bank Stock

Arlington, VA – The Commission's American Lobster Management Board approved Addendum XXVII to Amendment 3 to the Interstate Fishery Management Plan for American Lobster. The Addendum establishes a trigger mechanism to implement management measures – specifically gauge and escape vent sizes – to provide additional protection of the Gulf of Maine/Georges Bank (GOM/GBK) spawning stock biomass (SSB). It also implements changes to management measures for Lobster Conservation Management Areas (LCMAs) 1, 3, and Outer Cape Cod (OCC) to improve the consistency of measures across the GOM/GBK stock.

The Board initiated the Addendum as a proactive measure to improve the resiliency of the GOM/GBK stock. Since the early 2000s, landings in the GOM/GBK stock have rapidly increased. In Maine alone, landings have increased from 57 million pounds in 2000 to a record high of 132.6 million pounds in 2016. Maine landings have declined slightly but were still high at 97.9 million and 108.9 million in 2020 and 2021, respectively. However, since 2012, lobster settlement surveys throughout the GOM have generally been below the time series averages in all areas. These surveys, which measure trends in the abundance of juvenile lobsters, can be used to track populations and potentially forecast future landings. Persistent low settlement could foreshadow declines in recruitment and landings. In the most recent years of the time series, declines in recruitment indices have also been observed.

In response to these trends, Addendum XXVII establishes a mechanism where changes to the current gauge and escape vent sizes in LCMAs 1, 3 and OCC will be implemented automatically based on observed changes in recruit abundance indices. If the index of recruit abundance declines by 35% from the reference level (equal to the three-year average from 2016-2018), a series of gradual changes to gauge and vent size will be initiated in the following fishing year. These include two increases to the minimum gauge size in LCMA 1 (Gulf of Maine) and a single decrease to the maximum gauge size in LCMA 3 (offshore federal waters) and OCC. The gauge and escape vent size changes are intended to increase the proportion of the population that is able to reproduce before being harvested, and to enhance stock resiliency by protecting larger lobsters of both sexes.

Additionally, Addendum XXVII implements measures that resolve discrepancies between the regulations for state and federal permit-holders, provide a more consistent conservation strategy, and simplify interstate commerce and enforcement across management areas. Specifically, the Addendum implements a standard v-notch definition of 1/8" with or without setal hairs in LCMA 3 and OCC, and a standard maximum gauge size of 6 ¾" for LCMA 3 and state and federal permit holders in OCC. It also modifies the management program such that for LCMA 1 and 3 permit holders, states must limit the issuance of trap tags to equal the harvester trap tag allocations unless trap losses are documented. The implementation date for these changes is January 1, 2024.

The following table specifies the timing of management changes for each of the three LCMAs addressed under Addendum XXVII.

When change(s) will be implemented	What change will be implemented		
	LCMA 1	***LCMA 3***	***Outer Cape Cod***
January 1, 2024	Trap tags issuance limited to harvester allocation		v-notch definition: 1/8" with or without setal hairs; Maximum gauge size: 6 ¾"
Fishing year following an observed 35% decline in the trigger index (Year 1)	Minimum gauge size: 3 5/16"		
Year 3	Minimum gauge size: 3 3/8"		
Year 4	Escape vent size: 2 x 5 ¾" rectangular; 2 5/8" circular		
Year 5		Maximum gauge size: 6 ½"	Maximum gauge size: 6 ½"

For more information, please contact Caitlin Starks, Senior Fishery Management Plan Coordinator, at cstarks@asmfc.org or 703.842.0740.

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PR23-08

Meeting Summary

In addition to approving Addendum XXVII, the Board also received a brief update on the implementation of Addendum XXIX. The work group tasked with reviewing and approving tracking devices for use in the federal American lobster and Jonah crab fishery has approved four devices, and is working with the states to establish processes for administrating the electronic tracking program.

Staff also provided a progress update on the ongoing benchmark stock assessment for Jonah crab. The assessment workshop was held in April 2023, and the assessment is on track to be completed and peer reviewed for Board consideration at the Annual Meeting.

Given concerns about potential economic impacts associated with the management measures adopted under Addendum XXVII, the Board requested the Interstate Fisheries Management Policy Board create a subcommittee to communicate with Canada's Department of Fisheries and Oceans. The subcommittee would discuss transboundary issues related to the importation of lobster as it relates to different minimum gauge sizes in the two countries.

For more information, please contact Caitlin Starks, Senior Fishery Management Plan Coordinator, at cstarks@asmfc.org.

Motions

Main Motion

Move to select under Issue 2, Option B a trigger level of 38%.

Motion made by Mr. Keliher and seconded by Mr. Grout. Motion amended.

Motion to Amend

Motion to amend to select under Issue 2, Option B a trigger level of 35%.

Motion made by Ms. Patterson and seconded by Mr. McKiernan. Motion passes (Roll Call: In Favor – NH, RI, CT, NY, NJ; Opposed – MA; Abstentions – DE, MD, VA, NMFS; Null – ME)

Motion to select under Issue 2, Option B a trigger level of 35%.

Motion passes (10 in favor and one abstention from NMFS).

Main Motion

Move to select under Issue 2, Option B a modified "Measures Option 2" in which LMA3 and OCC move to a 6½ maximum gauge size in the final year of changes and do not decrease their maximum gauge size further. Initial changes to the gauge sizes for all GOM/GBK management areas should occur on June 1st in the following year. For example, if a trigger is tripped at the fall Annual meeting in 2023, a minimum gauge size change would be implemented June 1, 2024. Should a future stock assessment conclude that the GOM and GBK stocks are not a single biological stock, the Board can revisit the max gauge size decrease in OCC and LMA 3.

Motion made by Mr. Keliher and seconded by Ms. Patterson.

	LMA 1	LMA 3	OCC
Initial gauge size changes (Year 1 implementation)	**Min: 3 5/16" (84mm**) Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo	Min: status quo Max: status quo Vent: Status quo
Intermediate gauge sizes (Year 3 implementation)	**Min: 3 3/8" (86mm)** Max: Status quo **Vent: 2x5 ¾" rect; 2 5/8" circular**	Min: Status quo Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo
Final gauge size (Year 5 implementation)	Min: 3 3/8" (86mm) Max: Status quo Vent: status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo

Motion to Amend

Move to amend that the increase in the escape vent size in LCMA 1 be implemented in year 5 after the trigger has been reached.

Motion made by Mr. Grout and seconded by Mr. Train. Motion fails (3 in favor, 5 opposed, 3 abstentions).

	LMA 1	LMA 3	OCC
Initial gauge size changes (Year 1 implementation)	**Min: 3 5/16" (84mm)** Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo	Min: status quo Max: status quo Vent: Status quo
Intermediate gauge sizes (Year 3 implementation)	**Min: 3 3/8" (86mm)** Max: Status quo **Vent: status quo**	Min: Status quo Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo
Final gauge size (Year 5 implementation)	Min: 3 3/8" (86mm) Max: Status quo **Vent: 2x5 ¾" rect; 2 5/8" circular**	Min: Status quo **Max: 6 ½"** Vent: Status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo

Motion to Amend

Move to amend that the increase in the escape vent size in LCMA 1 be implemented in year 4 after the trigger has been reached.

Motion made by Mr. Borden and seconded by Mr. Train. Motion passes (10 in favor, 1 abstention).

	LMA 1	LMA 3	OCC
Initial gauge size changes (Year 1 implementation)	**Min: 3 5/16" (84mm)** Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo	Min: status quo Max: status quo Vent: Status quo
Intermediate gauge sizes (Year 3 implementation)	**Min: 3 3/8" (86mm)** Max: Status quo **Vent: status quo**	Min: Status quo Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo
Year 4	**Vent: 2x5 ¾" rect; 2 5/8" circular**		
Final gauge size (Year 5 implementation)	Min: 3 3/8" (86mm) Max: Status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo

Main Motion as Amended

Move to select under Issue 2, Option B a modified "Measures Option 2" in which LMA3 and OCC move to a 6½ maximum gauge size in the final year of changes and do not decrease their maximum gauge size further. Initial changes to the gauge sizes for all GOM/GBK management areas should occur on June 1st in the following year. For example, if a trigger is tripped at the fall Annual meeting in 2023, a minimum gauge size change would be implemented June 1, 2024. Should a future stock assessment conclude that the GOM and GBK stocks are not a single biological stock, the Board can revisit the max gauge size decrease in OCC and LMA 3. The increase in the escape vent size in LCMA 1 would be implemented in year 4 after the trigger has been reached.

Motion to Amend

Motion to amend to strip the motion of the maximum size changes in OCC and LCMA 3 that are scheduled to go in this motion.

Motion made by Mr. McKiernan and seconded by Mr. Borden. Motion fails (4 in favor, 6 opposed, 1 abstention).

	LMA 1	LMA 3	OCC
Initial gauge size changes (Year 1 implementation)	**Min: 3 5/16" (84mm)** Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo	Min: status quo Max: status quo Vent: Status quo
Intermediate gauge sizes (Year 3 implementation)	**Min: 3 3/8" (86mm)** Max: Status quo **Vent: status quo**	Min: Status quo Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo
Year 4	**Min: 3 3/8" (86mm)** Max: Status quo **Vent: 2x5 ¾" rect; 2 5/8" circular**		

~~**Final gauge size (Year 5 implementation)**~~	~~Min: 3 3/8" (86mm)~~ ~~Max: Status quo~~	~~Min: Status quo~~ ~~**Max: 6 ½"**~~ ~~Vent: Status quo~~	~~Min: Status quo~~ ~~**Max: 6 ½"**~~ ~~Vent: Status quo~~

Main Motion as Amended
Move to select under Issue 2, Option B a modified "Measures Option 2" in which LMA3 and OCC move to a 6½ maximum gauge size in the final year of changes and do not decrease their maximum gauge size further. Initial changes to the gauge sizes for all GOM/GBK management areas should occur on June 1st in the following year. For example, if a trigger is tripped at the fall Annual meeting in 2023, a minimum gauge size change would be implemented June 1, 2024. Should a future stock assessment conclude that the GOM and GBK stocks are not a single biological stock, the Board can revisit the max gauge size decrease in OCC and LMA 3. The increase in the escape vent size in LCMA 1 would be implemented in year 4 after the trigger has been reached.
Motion passes 9 in favor, 1 opposed, 1 abstention.

	LMA 1	LMA 3	OCC
Initial gauge size changes (Year 1 implementation)	**Min: 3 5/16" (84mm)** Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo	Min: status quo Max: status quo Vent: Status quo
Intermediate gauge sizes (Year 3 implementation)	**Min: 3 3/8" (86mm)** Max: Status quo **Vent: status quo**	Min: Status quo Max: Status quo Vent: Status quo	Min: Status quo Max: Status quo Vent: Status quo
Year 4	**Vent: 2x5 ¾" rect;** **2 5/8" circular**		
Final gauge size (Year 5 implementation)	Min: 3 3/8" (86mm) Max: Status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo	Min: Status quo **Max: 6 ½"** Vent: Status quo

Move to approve Issue 1, sub-option B1 and sub-option B4. This combination of options will set a standard v-notch definition of 1/8" in LCMAs 3 and OCC, maintain the zero tolerance definition in LCMA1, and establish a maximum gauge size in OCC of 6 ¾" for state and federal permit holders. It will also limit the issuance of trap tags to equal harvester trap tag allocations.
Motion by Mr. Keliher, second by Mr. Borden. Motion separated.

Move to Separate
Motion to separate B1 and B4.
Motion by Mr. Borden, second by Mr. McKiernan. Motion passes by consent.

Move to approve Issue 1, sub-option B1. This option will set a standard v-notch definition of 1/8" in LCMAs 3 and OCC, maintain the zero tolerance definition in LCMA1, and establish a maximum gauge size in OCC of 6 ¾" for state and federal permit holders.
Motion passes (8 in favor, 1 opposed, 1 abstention).

Main Motion
Move to approve Issue 1, sub-option B4. This will limit the issuance of trap tags to equal harvester trap tag allocations.

Motion to Amend
Move to amend to exempt the OCC from this requirement.
Motion made by Mr. McKiernan and seconded by Mr. Keliher. Motion passes (6 in favor, 5 abstentions).

Main Motion as Amended
Move to approve Issue 1, sub-option B4, except for OCC. This will limit the issuance of trap tags to equal harvester trap tag allocations for LCMA 1 and LCMA 3.
Motion passes (3 in favor, 1 opposed, 7 abstentions).

Move to approve Lobster Addendum XXVII, as modified today, with an implementation date of January 1, 2024.
Motion made by Ms. Patterson and seconded by Mr. Hasbrouck. Motion passes (10 in favor and one vote in opposition from MA).

Move to request the Interstate Fisheries Management Policy Board approve the creation of a subcommittee to engage Canada's Department of Fisheries and Oceans to discuss transboundary issues related to the importation of lobster as it relates to different minimum gauge sizes in the two countries. The subcommittee shall be made up of up to four members of the Lobster Management Board who have license holders that fish in Area 1 and/or 3, one representative from the National Marine Fisheries Service, and the Commission's Executive Director or his designee.
Motion made by Mr. Keliher and seconded by Mr. Borden. Motion passes by consent with one abstention from NMFS.

ATLANTIC MENHADEN MANAGEMENT BOARD (MAY 1, 2023)

Meeting Summary
The Atlantic Menhaden Management Board met to review a report by the Commonwealth of Virginia on recent developments in the management of its menhaden fishery, receive an update on the Atlantic menhaden single-species and Ecological Reference Point (ERP) stock assessments, and consider approval of the Draft Terms of Reference (TORs) for the ERP Benchmark Stock Assessment.

In response to public comments at recent Board meetings, the Board requested a report from the Commonwealth of Virginia on recent menhaden management in the state. Virginia representative Pat Geer updated the Board on the proposed and enacted legislative and regulatory changes since 2019, as well as management responses to recent fish kill events.

The Board received an update on the Atlantic menhaden single-species and ERP stock assessments. The Stock Assessment Subcommittee (SAS) and Assessment Science Committee recommended converting the single-species assessment from a benchmark to an update, since the model has been peer-reviewed several times and no new data sources were identified that would necessitate utilizing the benchmark process. Additionally, the Board considered and approved the Draft TORs for the ERP Benchmark Stock Assessment. The Single-Species Assessment Update and ERP Benchmark Stock Assessment are scheduled to be presented to the Board at the Annual Meeting in 2025.

For more information, please contact James Boyle, Fishery Management Plan Coordinator, at jboyle@asmfc.org.

Motions

Move to approve the Terms of Reference for the 2025 Atlantic Menhaden Ecological Reference Point Benchmark Stock Assessment and Peer Review.

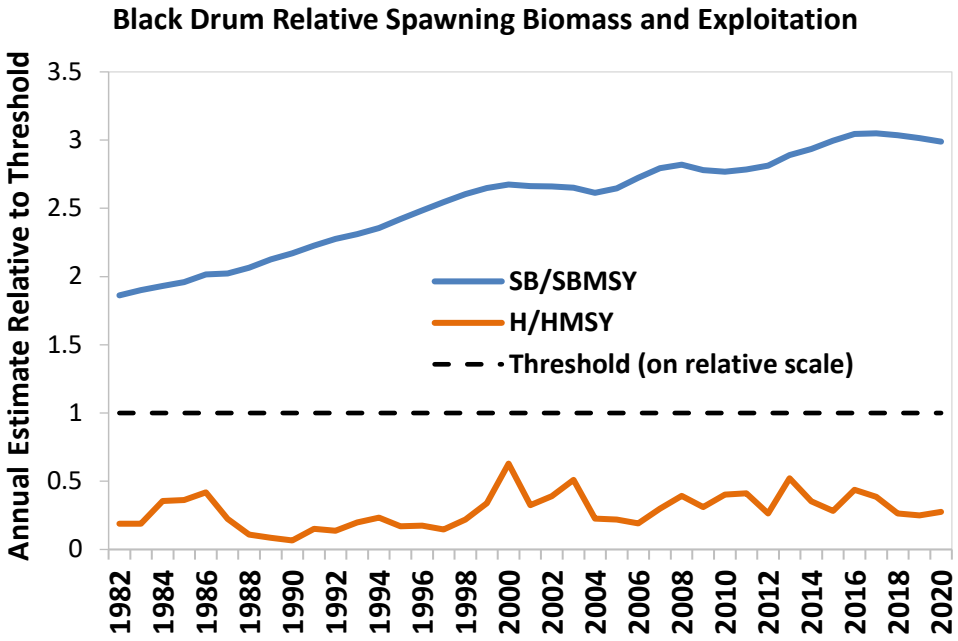
Motion made by Dr. McManus and seconded by Mr. Kane. Motion carries unanimously.

SCIAENIDS MANAGEMENT BOARD (MAY 1, 2023)

Press Release

Black Drum Benchmark Stock Assessment and Peer Review Find Stock to be Not Overfished nor Experiencing Overfishing

Arlington, VA – The 2023 Black Drum Stock Assessment and Peer Review Report indicates the Atlantic coastal stock of black drum are not overfished and not experiencing overfishing. The Commission's Sciaenids Management Board approved the benchmark stock assessment and peer review report for management use. No management action was taken because there were no major concerns with the stock.



The assessment estimates annual spawning biomass (SB) and exploitation (H; i.e., the proportion of stock biomass removed by fishing). Estimates from the last year of the assessment (2020) are compared to the spawning biomass and exploitation associated with maximum sustainable yield[1] (MSY), SB_{MSY}, and H_{MSY} respectively, to determine stock status.

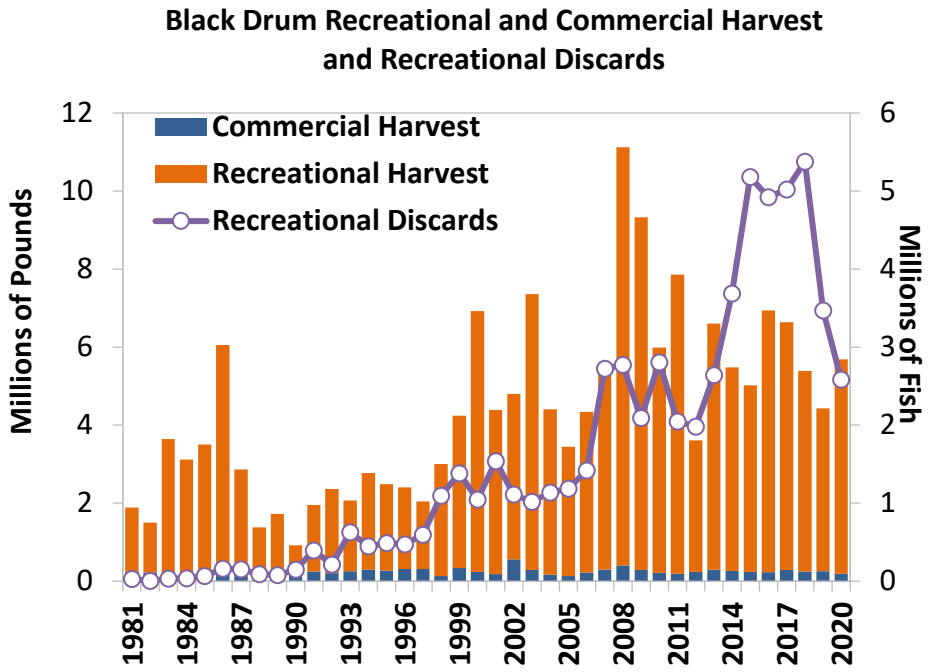
This assessment also developed indicators of stock abundance, and stock and fishery characteristics. The abundance indicators include several fishery-independent indices from the Mid-Atlantic and South Atlantic regions that track young-of-year and sub-adult fish. There is also one coastwide fishery-dependent index calculated from the Marine Recreational Information Program catch-per-unit-effort (CPUE) that tracks all exploitable sizes of black drum. A majority of the indices show no clear trend, although the CPUE has been increasing throughout the time series (1982-2020). Several of the indices in the Mid-Atlantic saw greater recruitment events in the 1990s and 2000s than observed in more

[1] MSY is the largest average catch that can be taken from a stock over time without negatively impacting the reproductive capacity of the stock.

recent years. One index, the New Jersey Ocean Trawl, will serve as an indicator of range expansion, as black drum are becoming more common in the northern areas of their range.

Recreational harvest and discards, as well as commercial landings, will serve as indicators of fishery characteristics. Overall, there has been increased harvest in the past 20 years. The recreational fishery contributes a majority of the total harvest, with a smaller-scale commercial fishery occurring primarily in North Carolina and northward. Recreational harvest was moderately high in the mid-1980s and increased again starting around 2000, peaking in 2008 at 11 million pounds and has remained relatively high, especially in the South Atlantic. A majority of the recreational harvest occurs in Florida. Recreational discards had been steadily increasing and peaked in 2018 at 5.4 million fish, after which they declined.

Commercial landings have been fluctuating without trend in recent years, with peaks in 2002 and 2008 at roughly 555,000 pounds and 400,000 pounds, respectively. Gill nets, pound nets, and haul seines are the primary gears used in the commercial fishery. Overall, the indicators do not show negative conditions, but will be monitored annually. Should any concerning trends occur, the Black Drum Technical Committee may recommend an expedited assessment in advance of the next benchmark stock assessment (tentatively 2028).



A stock assessment overview, which provides a more detailed description of assessment results, as well as the stock assessment and peer review report will be available on the Commission's website at https://asmfc.org/species/black-drum under Stock Assessment Reports. For more information on the stock assessment, please contact Jeff Kipp, Senior Stock Assessment Scientist, at jkipp@asmfc.org; and for more information on black drum management, please contact Tracey Bauer, Fishery Management Plan Coordinator, at tbauer@asmfc.org.

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PR23-09

Meeting Summary

In addition to reviewing the 2023 Black Drum Stock Assessment and Peer Review Report and accepting it for management use (see above press release), the Board also considered an update on the 2023 Atlantic croaker and spot Traffic Light Analyses (TLAs). The TLAs, as established in Addendum III, evaluate a harvest metric and an adult abundance metric. Metrics are evaluated annually using a color proportion of green, yellow, or red based on comparing the most recent year of data to a reference period, and management

action is triggered if the proportion of red exceeds specific thresholds. Staff updated the Board with a proposal to not conduct the Atlantic croaker and spot TLAs in 2023. Benchmark stock assessments for Atlantic croaker and spot are currently underway to be completed in 2024. Not conducting the TLAs in 2023 will reduce the workload and allow the Atlantic Croaker and Spot Technical Committees to focus on conducting the benchmark stock assessments for these two species. In addition, it is uncertain if a key dataset for the TLAs will be available this year. If the TLAs are conducted without these data, the results would not be very informative. The Board agreed to not conduct the Atlantic croaker and spot TLAs in 2023. The TLAs will be conducted next year with the completion of the 2024 benchmark stock assessments for Atlantic croaker and spot. Atlantic croaker and spot management measures put into place in 2021 will remain status quo until the TLAs can be reevaluated in 2024.

For more information, please contact Tracey Bauer, Fishery Management Plan Coordinator, at TBauer@asmfc.org.

Motions

Move to accept the 2023 Black Drum Stock Assessment and Peer Review Report for management use.
Motion made by Mr. Clark and seconded by Ms. Fegley. Motion carries by unanimous consent.

Main Motion

Move to have the Technical Committee annually present the indicators, as described in the black drum 2023 Stock Assessment and Peer Review Report.
Motion made by Mr. Brust and seconded by Ms. Madsen. Motion amended.

Motion to Amend

Motion to amend by adding to inform the need for a new stock assessment
Motion made by Ms. Burgess and seconded by Mr. Bell. Motion carries without objection.

Main Motion as Amended

Move to have the Technical Committee annually present the indicators, as described in the black drum 2023 Stock Assessment and Peer Review Report to inform the need for a new stock assessment.
Motion passes by unanimous consent.

ATLANTIC STRIPED BASS MANAGEMENT BOARD (MAY 2, 2023)

Press Release

ASMFC Atlantic Striped Bass Board Acts to Support Stock Rebuilding through Emergency Action and Addendum II Initiation

Addendum I Approved to Allow Ocean Commercial Quota Transfers Contingent on Stock Status

Arlington, VA – The Commission's Atlantic Striped Bass Management Board approved an emergency action to implement a 31-inch maximum size limit for striped bass recreational fisheries, effective immediately for 180 days (through October 28, 2023). This action responds to the unprecedented magnitude of 2022 recreational harvest, which is nearly double that of 2021, and new stock rebuilding projections, which estimate the probability of the spawning stock rebuilding to its biomass target by

2029 drops from 97% under the lower 2021 fishing mortality rate to less than 15% if the higher 2022 fishing mortality rate continues each year.

“Based on concern for the stock and the long-term interests of its stakeholders, the Board acted decisively to protect one of the few remaining strong year classes,” said Board Chair Marty Gary with the Potomac River Fisheries Commission. “The public is concerned about stock rebuilding and has urged the Board to expeditiously respond to the new stock projections. Striped bass is one of the flagship species of the Commission, and this action sends a strong signal that the Board is firmly committed to rebuilding the stock for current and future generations. At the same time, the Board recognizes that this action will have a profound impact on the for-hire industry and recreational anglers, however, it feels it is a necessary step to ensure rebuilding.”

As outlined in the Commission’s Interstate Fisheries Management Program Charter, a management board can take emergency action to address circumstances under which public health or the conservation of coastal fishery resources or attainment of fishery management objectives has been placed substantially at risk by unanticipated changes in the ecosystem, the stock, or the fishery.

The Board implemented the emergency 31-inch maximum size limit for 2023 to reduce harvest of the strong 2015-year class. The 31-inch maximum size limit applies to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the May Chesapeake Bay trophy fisheries which already prohibit harvest of fish less than 35 inches. All bag limits, seasons, and gear restrictions will remain the same. Jurisdictions are required to implement the required measure as soon as possible but no later than July 2, 2023. If it deems necessary, the Board may extend the emergency action for two additional periods of up to one year each at a future Board meeting.

The Commission will hold at least four virtual public hearings in mid- to late May to inform the public about the emergency action and identify next steps for management. A subsequent press release will provide the details of the public hearing schedule and webinar information.

Draft Addendum II Initiated

To address the concerns about increased removals and stock rebuilding beyond 2023, the Board initiated Addendum II to Amendment 7 to the Interstate Fishery Management Plan. The Draft Addendum will consider 2024 management measures designed to reduce fishing mortality to the target. Specifically, the Draft Addendum will propose options for the ocean recreational fishery, including modifications to the slot limit with harvest season closures as a secondary non-preferred option. It will also propose options for the Chesapeake Bay recreational fisheries, as well all commercial fisheries, including maximum size limits. Board members emphasized the importance of soliciting public input through the addendum process for 2024 measures following the 2023 emergency action.

For measures beyond 2024, the Board intends to consider the results of the upcoming 2024 stock assessment update to inform subsequent management action. To enable an expedited management response to the 2024 stock assessment update, the Draft Addendum will propose a provision that would enable the Board to respond to the results of the stock assessment updates via Board action if the stock is projected to not rebuild by 2029. The Board will consider the Draft Addendum at the

Summer Meeting, when it will either approve the document for public comment, or provide feedback for further development of the document.

Addendum I Approved
The Board also approved Addendum I to Amendment 7. When the stock is not overfished, the Addendum enables the Board to decide every one to two years whether it will allow voluntary transfers of ocean commercial quota. The Board can also set criteria for allowable transfers, including a limit on how much and when quota can be transferred in a given year, and the eligibility of state to request a transfer based on its landings. When the stock is overfished, no quota transfers will be allowed.

To inform final action on this Addendum, the Board considered public comments, Advisory Panel input, and a Technical Committee report addressing the impact of additional quota utilization on stock rebuilding.

"The Board's decision on Addendum I balances the commercial industry's desire for a quota transfer mechanism with the need for caution when the stock is overfished," said Board Chair Gary. "This was the most restrictive option for allowing transfers, giving the Board the ability to establish boundaries around quota transfers, as needed."

Addendum I will be available by the end of May on the Commission website at http://www.asmfc.org/species/atlantic-striped-bass under Management Plans and FMP Reviews. For more information, please contact Emilie Franke, Fishery Management Plan Coordinator, at efranke@asmfc.org or 703.842.0740.

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PR23-10

Motions
Main Motion
Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F = 0.17). Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits.
Motion made by Dr. Davis and seconded by Mr. Hasbrouck. Motion amended.

Motion to Amend
Move to add "The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g., currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%."
Motion made by Dr. Armstrong and seconded by Mr. Borden. Motion passes unanimously.

Main Motion as Amended
Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F = 0.17). Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits. The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g. currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%."
Motion passes unanimously.

Main Motion
Move that the Striped Bass Board, by emergency action as outlined in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.
Motion made by Dr. Armstrong and seconded by Mr. Borden.

Motion to Amend
Move to amend to add "Measures for the for-hire sector will remain status quo. In the event the Board extends the emergency action past the initial 180-day effective period, the for-hire sector exemption from emergency measures cannot be extended."
Motion made by Dr. Davis and seconded by Mr. Reid. Motion fails (Roll Call: In Favor – RI, CT, NY, NJ; Opposed – MA, PRFC, PA, NC, VA, DC, MD, DE, ME, NH; Abstentions – NOAA, USFWS; Null – None).

Main Motion
Move that the Striped Bass Board, by emergency action as outlined in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.
Motion made by Dr. Armstrong and seconded by Mr. Borden.

Motion to Postpone
Motion to postpone until the Summer Meeting.
Motion made by Mr. Nowalsky and seconded by Mr. Pugh. Motion fails (2 in favor, 14 opposed).

Main Motion
Move that the Striped Bass Board, by emergency action as outlined in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place.

Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.
Motion made by Dr. Armstrong and seconded by Mr. Borden. Motion carries (15 in favor, 1 opposed).

January 2023 Board Motion
Move to postpone action on Addendum I and task the Technical Committee with running two population projections:

- **One which assumes harvest of the entire ocean commercial quota from all states**
- **One which assumes harvest of the ocean commercial quota from all states except New Jersey (since their quota is reallocated out of the commercial fishery)**

The Technical Committee may use their expert judgement on other needed assumptions for the projections (i.e., selectivity) to produce the most realistic output for consideration by the Board.

Move to approve Option E (Board discretion of commercial quota transfer provision except no transfers if stock is overfished).
Motion made by Mr. Clark and seconded by Dr. Davis. Motion passes (10 in favor, 1 opposed, 2 abstentions, 3 null).

Move to approve Addendum I as modified today with an implementation date effective today.
Motion made by Mr. Clark and seconded by Mr. Kane. Motion passes unanimously.

LAW ENFORCEMENT COMMITTEEE (May 2, 2023)

Meeting Summary
The Law Enforcement Committee (LEC) met to discuss a number of items, including law enforcement activities related to species management actions, possible revisions to Guidelines for Resource Managers, and receive a presentation on the National Association Conservation Law Enforcement Leadership Academy/International Conservation Chiefs Academy (NACLELA/ICCA) Wildlife Officer Exchange Program. The LEC welcomed alternate representatives Lt. Sean Reilly from NY and Lt. Bo Hale from the US Coast Guard.

Species Issues
American Lobster - Members of ASMFC/ACCSP updated the LEC on the status of vessel monitoring system (VMS) implementation in the lobster fishery under Addendum XXIX to Amendment 3 of the American Lobster Fishery Management Plan. Specifically, a review of the current software program in use for this management measure and a review of the approved hardware vendors for VMS systems. ASMFC staff will continue to include LEC input to working group discussions regarding further VMS development and use in the lobster fishery.

The LEC discussed the current proposals under Addendum XXVII of Amendment 3. Specific discussion was about the consistency of management measures across specific Lobster Conservation Management Areas. The LEC recognizes the uniqueness of certain LCMAs but continues to support consistent management measures within each of the LCMAs.

Atlantic Striped Bass – The LEC discussed the current findings of the Technical Committee – Stock Assessment Subcommittee as reported at the May 2023 meeting of the Atlantic Striped Bass Management Board. Specifically, the technical Committee and Stock Assessment Subcommittee reported that there was a 40% increase of recreational removals, with a 33% estimated removal over both sectors of this fishery. Recognizing that the board may wish to act on these findings, the LEC discussed how a mid-season regulatory change would affect enforcement efforts in this fishery. Specifically, members reported that regulations have been promulgated and advertised for the current fishing year. This may cause confusion among fishers and a potential enforcement concern with the inability to effectively enforce the regulatory change.

Law enforcement compliance reporting for the annual Atlantic Striped Bass Management Plan Review process was discussed by the committee. In the recent plan review the Plan Review Team (PRT) identified an inconsistency in how state law enforcement was reporting patrol activity. Some states would provide specific patrol data of inspections, citations, and seizures. Where others would report current trends and observations within the fishery. In working with the FMP Coordinator and the PRT, it was agreed by all that a narrative Identifying common striped bass violations in the current year and any new or emerging enforcement issues would be beneficial. Quantitative information is optional as most states do not collect species specific data.

Tautog Tagging Study – The LEC was briefed on an ongoing survey by ASMFC and the State of New York in reference to tautog tagging. The survey will assess the varied types of tags in different environments. The goal behind this study is to identify a tag for use that will not damage a fish in the live market and hold the appropriate information necessary for tracking in the fishery.

Other issues

Members reviewed the current ASMFC document "Guidelines for Resource Managers on the Enforceability of Fishery Management Measures (August 2015)". This document has not been reviewed since 2015. With the always evolving strategies to address the development of fishery management plans, the LEC wished to keep this document relevant for the fishery managers of today. Our review focused on the relevance of past management measures and new and emerging management measures. Consideration of re-scoring each of the past management measures while scoring and updating newly identified measures was discussed by the committee. It was agreed by consensus that there would be no need to completely rewrite the document. The document was still relevant but needed updating of newly identified management measures. The committee will move forward with updating this document, with a plan to have Policy Board approval in the Fall of 2023.

A presentation about the NACLELA/ICCA Wildlife Officer Exchange Program. This program is of interest as the Chair of the LEC, Deputy Chief Jason Snellbaker (NJ) was invited by the organizers to participate in this program in his role as a state officer and a NACLELA graduate. This exchange was with an ICCA graduate from the Fisheries Compliance and Enforcement agency of Belize. This shared experience helped to increase international collaboration and individual capacity to address wildlife crime globally.

A closed session of our meeting was afforded to openly discuss new and emerging law enforcement issues.

Respective agencies were provided time to highlight their agencies and offer current enforcement efforts. For more information, please contact Kurt Blanchard, LEC Coordinator, at kurt.blanchard@verizon.net.

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM COORDINATING COUNCIL (MAY 2, 2023)

Meeting Summary

The ACCSP Coordinating Council met to review and take action on the FY2024 ACCSP Funding Decision Document and Request for Proposals package. The Council was provided an overview of the updated documents to support approximately $1.6 million for Partner and Committee projects. The approved RFP is now open for proposal submissions through June 16, 2023. See https://www.accsp.org/what-we-do/partner-project-funding for more information. All proposals will be evaluated and ranked on merit according to the schedule in the RFP.

The Council was also provided an ACCSP Program update that included a summary of activities involving accountability and commercial data validation workshops, software projects, activities related to the Atlantic recreational implementation plan, the Data Warehouse spring load, stock assessments support, current funding and staffing. For more information, contact Geoff White, ACCSP Director, at geoff.white@accsp.org.

Motions

Move to approve the FY24 Funding Decision Document and RFP as presented to the ACCSP Coordinating Council.

Motion made by Mr. Bell and seconded by Ms. Zobel. Motion passes (17 in favor).

COASTAL SHARKS MANAGEMENT BOARD (MAY 2, 2023)

Meeting Summary

The Coastal Sharks Management Board received a presentation from NOAA Fisheries on several recent and ongoing actions related to coastal sharks. Final Amendment 14 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP) was published in January 2022. Amendment 14 establishes a new framework to use to implement acceptable biological catch (ABCs) and annual catch limits (ACLs) for Atlantic shark fisheries, with the option to phase in new ABCs. It also allows for ACL management of recreational fisheries, removes linkages between commercial quotas, and changes quota carry-over provision.

NOAA Fisheries recently published the Atlantic Shark Fishery Review (SHARE) document. The SHARE document is a review of the state of the Atlantic shark fishery as a whole that may be used to help develop future management measures. It identifies areas of success, concerns, and potential future modifications to regulations and management measures, and assesses external factors affecting the fishery.

A proposed rule was published in March 2023 to consider prohibiting retention of oceanic whitetip sharks in US Atlantic waters. Oceanic whitetip sharks are listed as threatened under the Endangered

Species Act. Thus, the rule proposes adding oceanic whitetip sharks to the prohibited species group. NOAA Fisheries is seeking public comment on this action by **May 22, 2023**.

Over the next few months, NOAA Fisheries will also be scoping for Amendment 16 to the HMS FMP. The scoping document will consider a range of issues and options, including a variety of commercial and recreational fishery options based on the framework established under Amendment 14, potential revisions of shark management groups and quotas, and commercial and recreational management measures.

A proposed rule will be published later this month for Draft Amendment 15 to the HMS FMP, which considers two issues: (1) modification, data collection, and assessment of four commercial longline spatial management areas, and (2) administration and funding of the HMS pelagic longline electronic monitoring program.

For more information, please contact Caitlin Starks, Senior Fishery Management Plan Coordinator, at cstarks@asmfc.org..

Motions
No motions made.

ANNUAL AWARDS OF EXCELLENCE RECEPTION (MAY 2, 2023)

Press Release

ASMFC Presents 2023 Annual Awards of Excellence

Arlington, VA - The Atlantic States Marine Fisheries Commission presented its Annual Awards of Excellence to a number of individuals for their outstanding contributions to congressional/legislative issues, fisheries science, and law enforcement along the Atlantic coast. Specifically, the 2023 award recipients were Miranda Peterson for congressional/legislative contributions; Carol Hoffman for technical and scientific contributions; and Region 3 New York State Department of Conservation Police from for law enforcement contributions.

From left to right: ASMFC Executive Director Bob Beal, Environmental Conservation Officer Lieutenant Sean Reilly, Carol Hoffman, Awards Committee Chair Jim Gilmore, and ASMFC Chair Spud Woodward

"Every year a great many people contribute to the success of fisheries management along the Atlantic coast. The Commission's Annual Awards of Excellence recognize outstanding efforts by professionals who have made a difference in the way we manage and conserve our fisheries," said ASMFC Chair Spud Woodward of Georgia. "I am humbled by the breadth and extent of accomplishments of the recipients and am grateful for their dedication to Atlantic coast fisheries."

Congressional and Legislative Contributions

Miranda Peterson, Legislative Assistant for Representative Frank Pallone

As a Legislative Assistant in Representative Frank Pallone's office, Miranda Peterson has consistently gone above and beyond to help secure funding for the Virginia Tech Mid-Atlantic Horseshoe Crab Trawl Survey. Understanding the importance of the sustainable management of this species, Miranda has worked diligently to help fund this program. In 2023, she secured the signatures of seven U.S. Representatives on a Dear Colleague letter, which was an all-time high in signatories who support funding the survey.

The Virginia Tech Trawl Survey is necessary for the effective and timely management of horseshoe crabs in the Delaware Bay. The survey has been in operation since 2002, but lost funding for several years which complicated the stock assessment and management in the region. Since 2016, Congress has annually instructed NOAA Fisheries to fund this survey to provide a consistent time series. A healthy Delaware Bay population supports the economically and ecologically important birding, fishing, and biomedical communities. The continuation of this yearly data is due in a large part to Miranda's efforts.

In addition to these efforts, Miranda's in-depth knowledge of coastal and marine issues, including commercial and recreational fisheries, marine mammals, and offshore energy development is not only an asset to Representative Pallone and New Jersey constituents, but also to the management of marine resources along the Atlantic coast.

Scientific and Technical Contributions

Carol Hoffman, (retired) New York State Department of Environmental Conservation

Carol Hoffman, previously with the New York State Department of Environmental Conservation, was recognized for her longstanding scientific and technical contributions to the management of Atlantic striped bass and American eel. Her keen understanding of fishery management plans and strong analytical abilities helped to ensure that New York manages these species in consideration of both state and coastwide needs. Carol's thorough and detailed approach to data analysis and report development has been key to maintaining New York's high quality of work. Her unmatched ability to meticulously remember the Commission's procedures and timelines ensured that New York consistently fulfils its interstate management responsibilities.

A strong communicator and dedicated team player, Carol fostered strong relationships not only within the marine district, but also with New York's inland and Hudson River fisheries. She developed vital working relationships with her neighboring states of New Jersey and Connecticut which allowed striped bass and eel to be monitored and managed successfully on a regional level. Particularly for eel, Carol worked tirelessly to provide alternative data sets from a citizen science group and a power plant in New York, both of which are now used to assess the species.

Not only has Carol delivered timely and accurate data analyses and compliance reports, she has also been instrumental in the extensive process of regulation formulation that supports the Commission's mandates. Her efforts contributed to New York being an active and dedicated participant in the Commission's fisheries management process.

Law Enforcement Contributions

New York State Department of Environmental Conservation Police, Region 3

The last award of the evening was presented to the New York State Department of Environmental Conservation Police for their efforts in the protection of the Atlantic striped bass along the spawning grounds of the Hudson River. Over the past three years, Region 3 officers have conducted patrols of the Western, Putnam, Orange, and Rockland Counties for recreational fishery compliance inspections.

Throughout February and March, the Environmental Conservation Police dedicated its resources to the protection of migrating striped bass. During 14 dedicated patrols in 2023 alone, officers issued 430 tickets for violations of striped bass regulations and other associated violations. Officers also seized 184 illegally possessed striped bass during their patrols; these fish were later donated to a local zoo. The dedicated patrols were conducted at varied times of the day and night. Officers used specialized night vision gear to aid in the detection of anglers. Over the course of this operation, violations included: fishing without a marine registration; failure to use circle hooks; exceeding the possession and size limits; and targeting striped bass during a closed season.

With the opening of the season on April 1, the dedicated patrols have ended, but officers continue to diligently monitor the fishery. Through their efforts, these officers have helped to ensure that fishing regulations are upheld and the resource is given its best chance to rebuild.

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PR23-11

EXECUTIVE COMMITTEE (MAY 3, 2023)

Meeting Summary

The Executive Committee met to discuss several issues, including the proposed FY24 Budget; the potential for a Legislative and Governors Appointee Commissioner (LGA) stipend; potential changes to the Conservation Equivalency Policy; a Legislative Committee update and the Executive Director's Performance review. The following action items resulted from the Committee's discussions:

- Staff presented the proposed FY24 Commission budget which was reviewed by the Executive Committee, which was unanimously approved by the Committee.
- Staff presented an update on the potential for a LGA members stipend. It was determined there is not a way for ASMFC to offer a tax break or benefit for participation in the Commission's meetings. Additionally, the determination of who is eligible and who would accept a stipend needs to be worked through. Ultimately, the Committee decided that LGA Commissioners will continue to serve on a volunteer basis and not receive a stipend from the Commission.
- Staff presented the work group's recommended revisions to the Commission's Conservation Equivalency Policy. There was considerable discussion on the proposed revision, and a bit of concern about the revision being too prescriptive and not flexible enough. The Chair requested that staff work on a further revision of the Policy, and set aside time at a future meeting to go through the Policy step-by-step to determine the appropriate revisions to the Policy.
- Staff presented on four bills that the Executive Committee should be aware of. These included: the Federally Integrated Species Health Act (FISH Act, H.R. 872), National Oceanic and Atmospheric Administration Act of 2023 (H.R. not yet assigned), Restoring Effective Science-

based Conservation Under Environmental laws protecting Whales Act of 2023 (RESCUE Whales Act, H.R. 1213), and the Recovering America's Wildlife Act (S. 1149). Bill Hyatt, the Chair of the Legislative Committee, noted that the Reinvesting in Shoreline Economies and Ecosystems (RISEE, S.373 and H.R.913). Act has been reintroduced in the 118th Congress and should continue to be monitored.

- The Executive Committee went into a closed session to discuss the Executive Director's Performance Review.

For more information, please contact Laura Leach, Director of Finance & Administration, at lleach@asmfc.org or 703.842.0740.

Motions

Move approval of the FY24 Budget.

Motion made by Mr. Keliher and seconded by Ms. Patterson. Motion passed unanimously.

Move moved to accept Option 1 of the Stipend White Paper, which states "the LGA Commissioners will continue to serve on a volunteer basis and not receive a stipend from the Commission."

Motion made by Mr. Keliher and seconded by Mr. Gilmore. Motions passes (14 in favor, 1 opposed).

INTERSTATE FISHERIES MANAGEMENT PROGRAM POLICY BOARD (MAY 3, 2023)

Meeting Summary

The ISFMP Policy Board met to receive an update from Executive Committee; discuss follow up from the 2022 Commissioner Survey results; consider options for possible paths for Atlantic bonito and false albacore management; receive an update on the next addendum for the harvest control rule; discuss the future of the Mid-Atlantic Fishery Management Council's (MAFMC or Council) Research Set-Aside Program (RSA), receive Assessment Science Committee (ASC) and Law Enforcement Committee reports; receive and update on the East Coast Climate Change Scenario Planning Initiative; consider a recommendation from the American Lobster Management Board; and review a request from New York regarding tautog tags, and a request to streamline the commercial quota transfer request process.

The Commission Chair, Spud Woodard, presented the Executive Committee Report to the Policy Board (for more details see Executive Committee meeting summary earlier in this document).

Commissioner Survey

Commissioners completed a survey of Commission performance in 2022, which measures Commissioners' opinions regarding the progress and actions of the Commission in 2022. The Policy Board discussed the results of the survey in February. The Board reviewed possible short- and long-term issues and drivers of change from the survey results. These include issues such as improving meeting efficiency, summaries of lengthy documents, greater incorporation of ecological consideration in decision making, conflicts with offshore wind, and stocks not responding to management decisions. No action was taken at this time.

Management of Atlantic Bonito and False Albacore

In February, the Policy Board tasked staff to present an options paper on possible paths forward for management of Atlantic bonito and false albacore after concerns were raised regarding increased recreational catch of juvenile fish in some state waters. There is currently no federal or Commission fishery management plan for either species. Staff presented three possible options for developing different paths to management for both Atlantic bonito and false albacore including limitations to state processes. These included states developing measures on their own, development of a white paper, or the initiation of a fishery improvement project (FIP). It was noted if additional species were added to the Commission portfolio, it would increase the workload for Commission and state staff, some of which are already at full capacity. Staff noted there was an extensive literature review of both species submitted as public comment by American Saltwater Guides Association. Some Policy Board members were concerned with the Commission directing the states regarding these species because their states have determined management is not needed at this point. While there are some states that would like to further explore possible management due to concerns of what increased harvest could do to an unregulated species. Those states with an interest will work together to explore state management and report back to the Policy Board if they find further action by the Commission may need to be discussed.

Next Steps in Recreation Management Reform Initiative

In June 2022, Policy Board and the MAFMC passed a motion when taking final action on the Harvest Control Rule Framework/Addenda to start a new draft management document to further develop the approved percent change approach for recreational management of summer flounder, scup, black sea bass and bluefish, in addition to two of the other options in the document that had gone out for public comment. Staff presented a timeline for the new draft addendum/framework and Recreational Amendment (addressing sector management and recreational accountability for summer flounder, scup, black sea bass and bluefish). The Board also approved the Plan Development Team (PDT) membership to work on developing the draft addendum. Approved PDT membership includes Corrine Truesdale, Rachel Sysak, Mike Celestino, Alexa Galvan, and Sam Truesdall. The Board also approved a work group of Commissioners and Council members to provide direction to the PDT/Fishery Management Action Team in developing the draft addendum.

MAFMC Research Set-Aside Program

In 2014, MAFMC suspended the RSA Program due to concerns associated with administrative, enforcement, and science issues. The Council is considering the potential redevelopment of the RSA program. From July 2021 through February 2022, the Research Steering Committee (RSC) held a series of four exploration workshops focusing on the key issues of RSA research, funding mechanisms, and enforcement, monitoring, and administration. Based on input from the workshops, the RSC developed a draft framework for a potentially revised RSA program that would seek to address the issues of the original RSA program. At its August meeting, Council staff will provide the Council with a presentation on a potential draft RSA framework, draft RSA program elements, and recommendations developed by the RSC for Council consideration. Any potential management action considered by the Council through a management document would need to be developed cooperatively with the Commission for jointly managed species to ensure a consistent and compatible RSA program across FMPs. Policy Board members were concerned there was not sufficient time to discuss and recommend a position on re-establishing the RSA program. A webinar

will be held prior to the Council's August meeting for Board members to continue the discussion and develop recommendations.

Assessment Science Committee Recommendations
The Assessment Science Committee met on April 17th to discuss and approve a revised Commission Stock Assessment Schedule, in anticipation of overwhelming stock assessment subcommittees workloads for 2023-2025. The Board approved the following recommended changes to the schedule: Atlantic menhaden and Atlantic sturgeon will switch from benchmark stock assessment to an assessment update, and while river herring will still be peer-reviewed in 2023, the results will not be presented to the Board until early 2024.

Staff presented a report of the Law Enforcement Committee (LEC) work (more details can be found in the LEC meeting summary earlier in this document)

Commerce of American Lobster between the US and Canada & Tautog Tagging
Under other business, the Policy Board approved a motion establishing a subcommittee that will find solutions that are beneficial to both the sustainability of the lobster stock and commerce between the US and Canada and then work with Canada on implementing those solutions.

New York reported the state will be conducting a new tagging study to look at additional tag types for the tautog program. While the new study is conducted, New York requested the ability to tag fish in a different location for this fishing season, if needed to address concerns raised by industry. The Policy Board had no issues with the requested change. Lastly, a Policy Board member requested staff to look into possible ways to simplify the quota transfer communication process, if allowed by the FMPs.

For more information, please contact Toni Kerns, Fisheries Policy Director, at tkerns@asmfc.org.

Motions
Move that the Commission establish a temporary technical committee to review the two papers on Atlantic bonito and little tunny that were submitted by the American Saltwater Guide Association. The Commission will inform the State Directors of this proposal and ask them to nominate a scientific staff member of their choice to join the review. The review will assess the technical quality of the papers, the relevance of the information, and suggest possible revisions, data gaps, and management implications and options. The committee will convene online, elect their own chairperson, and prepare a report with their findings and recommendations for presentation to the ISFMP Policy Board at the Summer Meeting.
Motion made by Mr. Borden and seconded by Dr. Davis. Motion fails (2 in favor, 11 opposed, 3 abstentions, 1 null).

Move to approve the ASMFC Stock Assessment Schedule as presented today.
Motion made by Mr. Fote and seconded by Mr. Bell. Motion carries unanimously.

On behalf of the American Lobster Board, recommend ISFMP Policy Board approve the creation of a subcommittee to engage Canada's Department of Fisheries and Oceans to discuss transboundary issues related to the importation of lobster as it relates to different minimum

gauge sizes in the two countries. The subcommittee shall be made up of up to four members of the Lobster Management Board who have license holders that fish in Area 1 and/or 3, one representative from the National Marine Fisheries Service, and the Commission's Executive Director or his designee.
Motion made by Dr. McNamee on behalf of the American Lobster Management Board.

Motion to substitute to request the ISFMP Policy Board create a subcommittee to be made up of up to four members of the American Lobster Management Board who have license holders that fish in LCMA 1 and/or 3 and at least one representative from NMFS and the Commission's Executive Director or his designee. The Subcommittee, prior to the engagement with parties in Canada who have an interest in lobster management and commerce, shall discuss and develop an approach on how best to find solutions that would be beneficial to both the sustainability of the lobster stock and commerce between the countries.
Motion made by Mr. Ruccio and seconded by Mr. Keliher. Motion passes by unanimous consent.

HORSESHOE CRAB MANAGEMENT BOARD (MAY 3, 2023)

Press Release

Horseshoe Crab Board Approves Best Management Practices for the Biomedical Industry

Arlington, VA – The Commission's Horseshoe Crab Management Board accepted revisions to a guidance document on *Best Management Practices (BMPs) for Handling Horseshoe Crabs for Biomedical Purposes*. The document recommends broadly applicable industry standards that are expected to minimize mortality and injury of horseshoe crabs associated with the biomedical process. It also provides background on the horseshoe crab biomedical fishery, information on current regulations in the Interstate Fishery Management Plan (FMP) for Horseshoe Crab related to biomedical collections, and research recommendations that could further inform the BMPs and potentially further reduce mortality or injury of biomedical horseshoe crabs.

The revised document is the product of a Board-appointed work group that was tasked with reviewing and updating the BMPs for handling biomedical catch since over a decade has passed since the BMPs were originally developed. The work group included technical committee and advisory panel members with expertise in horseshoe crab biology, ecology, and biomedical processing.

It is the Board's intention to keep this document up-to-date, with periodic updates in the future. The final document will be posted to the horseshoe crab webpage at https://asmfc.org/species/horseshoe-crab under quick links by the end of May.

For more information, please contact Caitlin Starks, Senior Fishery Management Plan Coordinator, at cstarks@asmfc.org or 703.842.0740.

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PR23-12

Meeting Summary

In addition to accepting the revised *Best Management Practices for Handling Biomedical Catch of Horseshoe Crabs*, the Board also discussed potential approaches for evaluating management objectives for the Delaware Bay horseshoe crab bait fishery. The Board agreed to form a work group to develop a survey that will be distributed to stakeholders including bait harvesters and dealers, biomedical fishery and industry participants, and environmental groups. The results of the survey will inform the Board on whether to consider future changes to horseshoe management for the Delaware Bay region.

For more information, please contact Caitlin Starks, Senior Fishery Management Plan Coordinator, at cstarks@asmfc.org.

Motions

To move to accept the draft BMP document as final and publish it on the ASMFC website.
Motion made by Mr. McKiernan and seconded by Mr. Bell. Motion approved by consent.

Move to pursue option 1 from the memo dated April 17, 2023 with the intent to include a wide range of stakeholders in a survey formulated by a workgroup of board members.
Motion made by Ms. Madsen and seconded by Mr. Jacobson. Motion approved by consent.

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Division of Marine Fisheries
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MEMORANDUM

TO: Daniel J. McKiernan, Director

FROM: Gregory Skomal, Recreational Fisheries Project Manager

DATE: April 12, 2023

SUBJECT: Proposal to Establish a Minimum Size for Atlantic Bonito

Overview

In recent years, the agency has received numerous reports of small, young-of-the-year (YOY) Atlantic bonito (*Sarda sarda*) being encountered and harvested by recreational fishermen in large quantities in Massachusetts waters and the Gulf of Maine. It appears that YOY bonito can be targeted in schools, like Atlantic mackerel, and are being harvested for bait to catch bluefin tuna and striped bass, particularly in Cape Cod Bay. Several recreational fishermen have expressed concern that taking large quantities of these small fish, coupled with the lack of regulations for this species, could lead to a population decline. The status of the Atlantic bonito population is unknown and there are no federal, regional, and state regulations currently in place.

As per your request, the Recreational Fisheries Project compiled commercial and recreational catch data, length frequency data, and life history information for Atlantic bonito for the purpose of producing a minimum size recommendation. Taking into consideration their rapid growth rate, the estimated size at maturity of 15 inches fork length (FL), the length frequency distribution obtained from regional recreational fisheries catch data, and feedback from recreational anglers, we recommend a minimum size of 16 inches FL.

Background

The Atlantic bonito is a member of the family Scombridae, which includes the mackerels and tunas. Cousins of the Atlantic bonito include common recreational species like the Atlantic mackerel (*Scomber scombrus*), the false albacore or little tunny (*Euthynnus alletteratus*), and the Atlantic bluefin tuna (*Thunnus thynnus*). Like these closely related species, the bonito is built for speed with a streamline, torpedo-shaped body, two dorsal fins, and a series of small "finlets" leading to a well-forked, bony tail supported by lateral keels. The Atlantic bonito is often confused with the skipjack tuna (*Katsuwonus pelamis*) and the false albacore, but can be readily differentiated by the 5 to 11 oblique continuous dark stripes on its back against a steel blue or blue-green background; the belly of the bonito is silvery with no stripes (skipjack tuna) or spots (false albacore).

Distribution and Habitat
The Atlantic bonito lives in tropical and temperate waters throughout the Atlantic Ocean. In the western North Atlantic, it can be found from Nova Scotia to Argentina. The Atlantic bonito migrates seasonally north and south along the eastern seaboard of the US and is commonly found in Massachusetts waters from July to October.

As an epipelagic and neritic species, the Atlantic bonito is a schooling fish that lives in the top levels of the water column in our coastal waters. It is known to occasionally enter estuaries and bays, which is typical along Cape Cod and the Islands. The bonito is generally thought to occur in a broad water temperature range of 54 to 81°F.

Life History
With a relatively large mouth armed with sharp teeth, the bonito is a voracious predator of smaller fishes like mackerels, menhaden, silversides, and sand lance as well as squid. Like all other tunas, the Atlantic bonito is a powerful, fast swimmer and ram ventilator, which means that it must always swim forward to force water over its gills. In Massachusetts waters, schools of bonito are often seen streaking at the surface and leaping from the water as they herd and attack prey. These schools become an easy target for anglers in search of this gamefish.

Although the bonito is a common species in US waters, virtually nothing is known about its life history in the western North Atlantic. Based on research conducted in the eastern Atlantic and Mediterranean, where it is exploited by a variety of fisheries, this species is fast growing, attaining an average length of 17 inches FL and reaching maturity within the first year. Atlantic bonito grow up to 32 inches and live as long as five years. According to the International Game Fish Association, the current world record bonito is 18 lbs. 4 oz. taken in the Azores in 1953, but several international line and tippet class records have been set in Massachusetts waters. The current Massachusetts Saltwater Derby record is 13 lbs. 8 oz.

The reproductive biology of the Atlantic bonito is unknown in the western North Atlantic, but spawning is thought to occur in the late spring and early summer off the east coast of the US. During the fall, small (5-9 inch) young-of-the-year bonito have been documented off the coast of Long Island. In recent years, we have received numerous reports of large quantities of these small bonito being taken by anglers off the coast of Massachusetts and in the Gulf of Maine. Length frequency data collected by the Marine Recreational Information Program (MRIP) survey from 2018-2022 clearly show these young fish (Figure 1). The abundance of young fish in our region is a testament to their rapid growth rate and might be indicative of warming New England waters.

Fisheries
The Atlantic bonito is a widespread species that has been historically harvested by commercial and recreational fisheries along the eastern seaboard of the US. Annual commercial landings largely associated with net fisheries increased in the 1970's and 80's, peaking at 1.8 million pounds in 1994, then catches steadily declined in subsequent years. Since 2012, annual commercial landings have fluctuated between 25-81 thousand pounds with an average of about 50,000 lbs. per year worth approximately $103K (Figure 2). Over this time period, three states accounted for 91% of commercial landings: Rhode Island (46%), North Carolina (28%), and New Jersey (17%). Although the Massachusetts fishery for Atlantic bonito is primarily

recreational, commercial landings have been, on average, about 1,300 lbs. per year (range: 171-3,500 lbs.) from 2012-2021, representing only 3% of total US Atlantic landings (Figure 2). Based on SAFIS data, the predominant commercial gear type for this nominal commercial fishery in Massachusetts is rod and reel and occasional catches by fish weirs (stationary pound nets).

With its incredible speed and power, the Atlantic bonito is a highly prized gamefish targeted by recreational anglers. Since 2012, MRIP estimates of total recreational catch of Atlantic bonito along the entire eastern seaboard (ME to FL) have fluctuated annually with no apparent trend, and in the range of 44,000-537,000 individual fish with an average of 244,000 fish per year (Figure 3). MRIP estimated that, on average, 60% of these fish are released each year. The states of Massachusetts (35%), New Jersey (31%), North Carolina (15%), and Rhode Island (8%) accounted for 89% of the catch (Figure 3). From 2012-2022, Massachusetts anglers caught an average of 84,700 (range: 2,200 - 402,552) Atlantic bonito per year. It should be noted, however, that the annual state-specific MRIP catch estimates for this species have generally high PSE values (>50) and are, therefore, very imprecise.

Recreational catch estimates derived from the NMFS Large Pelagics Survey, which only samples boat fishermen from Virginia through Maine during June-October, are considerably lower. For the period 2012-2022, these estimates range from 700 to 15,000 fish annually, with an average of about 5,800 per year. As was the case with MRIP estimates, a high proportion (51%) were released each year. Also consistent with MRIP, Massachusetts (36%) and New Jersey (32%) accounted for the bulk of the catch, followed by Connecticut/Rhode Island (11%) and New York (10%); North Carolina is not sampled by the LPS. The LPS estimated that Massachusetts vessel anglers caught an average of 2,060 (range: 37-9,555) Atlantic bonito per year from 2012-2022. LPS catch estimates, however, also have high PSE values.

The annual Martha's Vineyard Striped Bass and Bluefish Derby has been targeting Atlantic Bonito and compiling catch data since 1987 (Figure 4). This event draws more than 3,000 registered participants that fish from shore and boats for the five week-long event every September into October. The Derby imposes a minimum size of 21 inches for Atlantic bonito. Since 1987, bonito landings have ranged from 110-696 fish with an annual average of 293 fish. With the exception of five peak years early in the time series (1987-1988, 1992-1994), the number of Atlantic bonito weighed annually does not appear to be trending up or down since 1995 (Figure 4).

Management

There is no historical or current population assessment for the Atlantic bonito. As a result, it is a largely unregulated species in federal and state waters in the US. The only exception is the state of Florida, which categorizes the Atlantic bonito as an "unregulated" species with a default recreational bag limit of 100 pounds per day. On an international scale, the Atlantic bonito is listed as "least concern" by the International Union for Conservation of Nature. Although the International Commission for the Conservation of Atlantic Tunas (ICCAT) manages Atlantic bonito under the Small Tunas Group, there are currently no regulations in effect.

Proposed Minimum Size

Atlantic bonito is a relatively fast-growing species, attaining maturity during the first year at about 15 inches FL. Based on MRIP length measurements, Massachusetts anglers essentially encounter two general size classes: YOY in the 5-9 inch range and adults >15 inches (Figure 5). It is clear in the length data that this is true throughout the New England region, where pulses of YOY have been encountered to varying degrees over the last five years (Figure 1).

We could consider a local (Massachusetts) minimum size in the 12-14 inch range and that would prevent harvest of YOY in our local waters. If a more regional approach is sought, then based on these regional data, a minimum size of 16 inches could be considered and would eliminate the retention of YOY Atlantic bonito and, assuming the length distribution is reflective of the catch, not impact the bulk of the fishery (reduction of about 20%). Given the estimated length at maturity, 16 inches will protect juvenile fish and allow for modest levels of reproduction prior to harvest.

However, it should be noted that based on MRIP length frequency data, the southern states (VA, NC, SC) catch bonito over a much broader size range; the 10-15 inch size range comprises about 38% of the catch (Figure 5). While the 16-inch minimum size is not likely to impact New England anglers, this might not be the case for these southern states, assuming the MRIP size distribution reflects the catch.

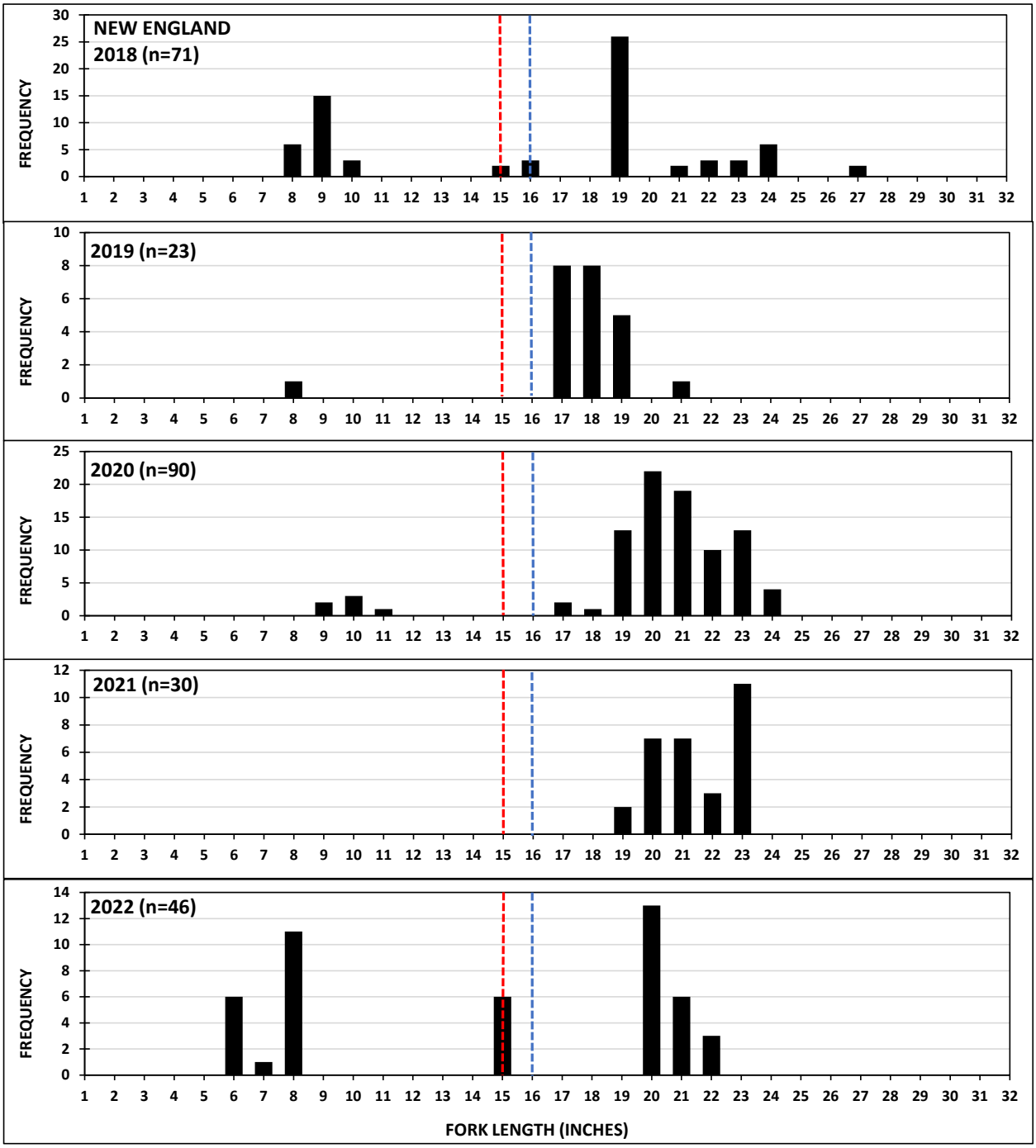
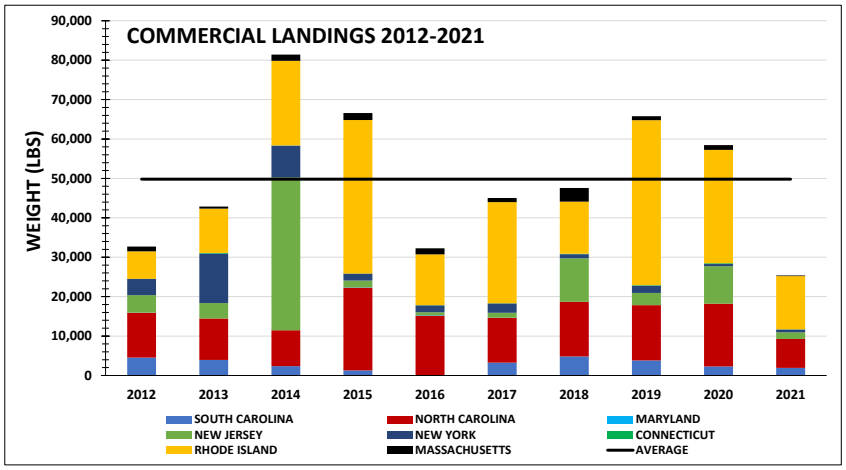
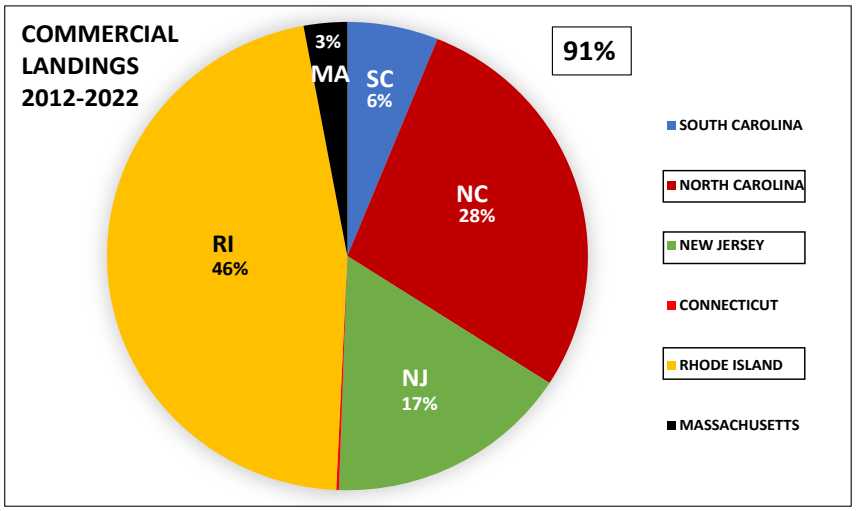


Figure 1. Length frequency distribution of Atlantic bonito captured in New England states, 2018-2022. Vertical lines indicate estimated size at maturity (red) and proposed minimum size (blue). Source: MRIP.





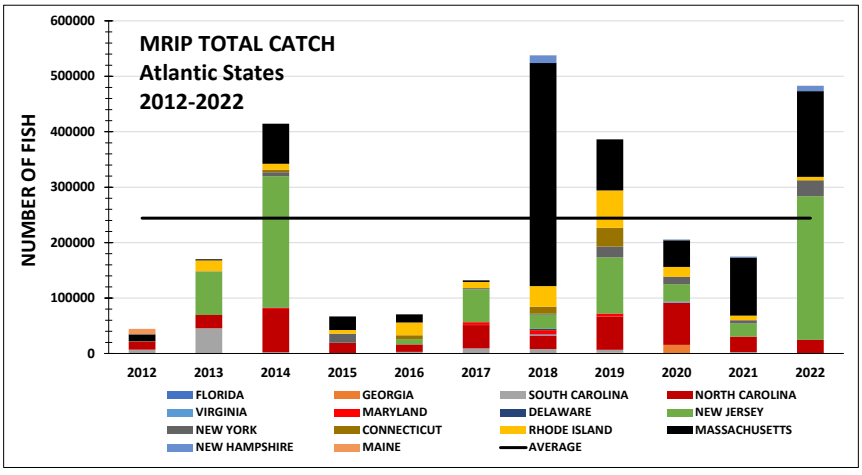


Figure 2. Annual commercial landings of Atlantic bonito, 2012-2021(top) with time-series average (line) and proportion of landings by state (bottom). Source: NMFS.

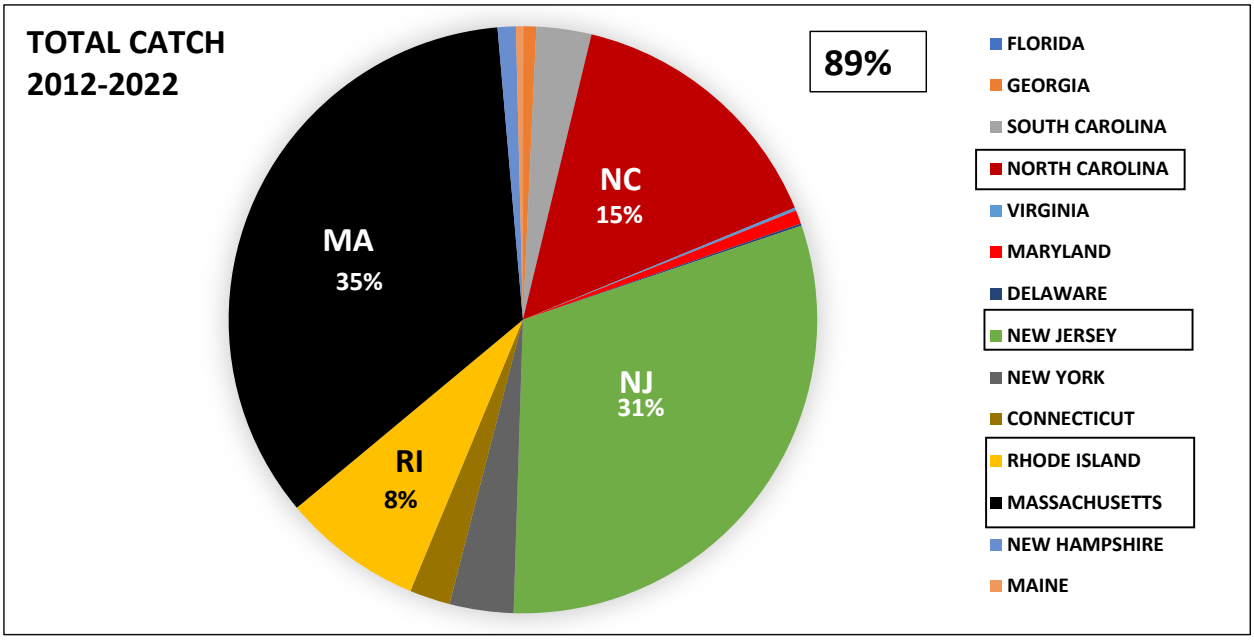


Figure 3. Annual estimates of total recreational catch of Atlantic bonito, 2012-2022 (top) with time series average (line) and proportion of catch by state (bottom). Source: MRIP.

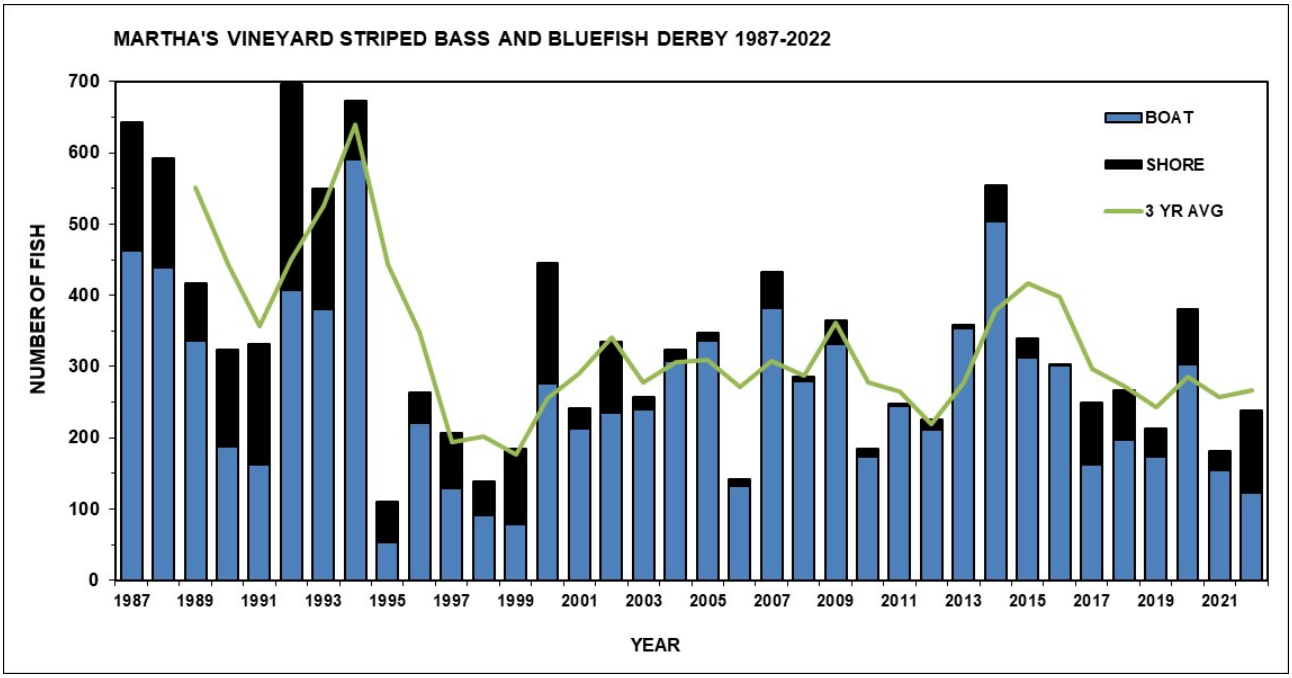


Figure 4. Atlantic bonito landings during the annual Martha's Vineyard Striped Bass and Bluefish Derby with three year running average (line), 1987-2022.

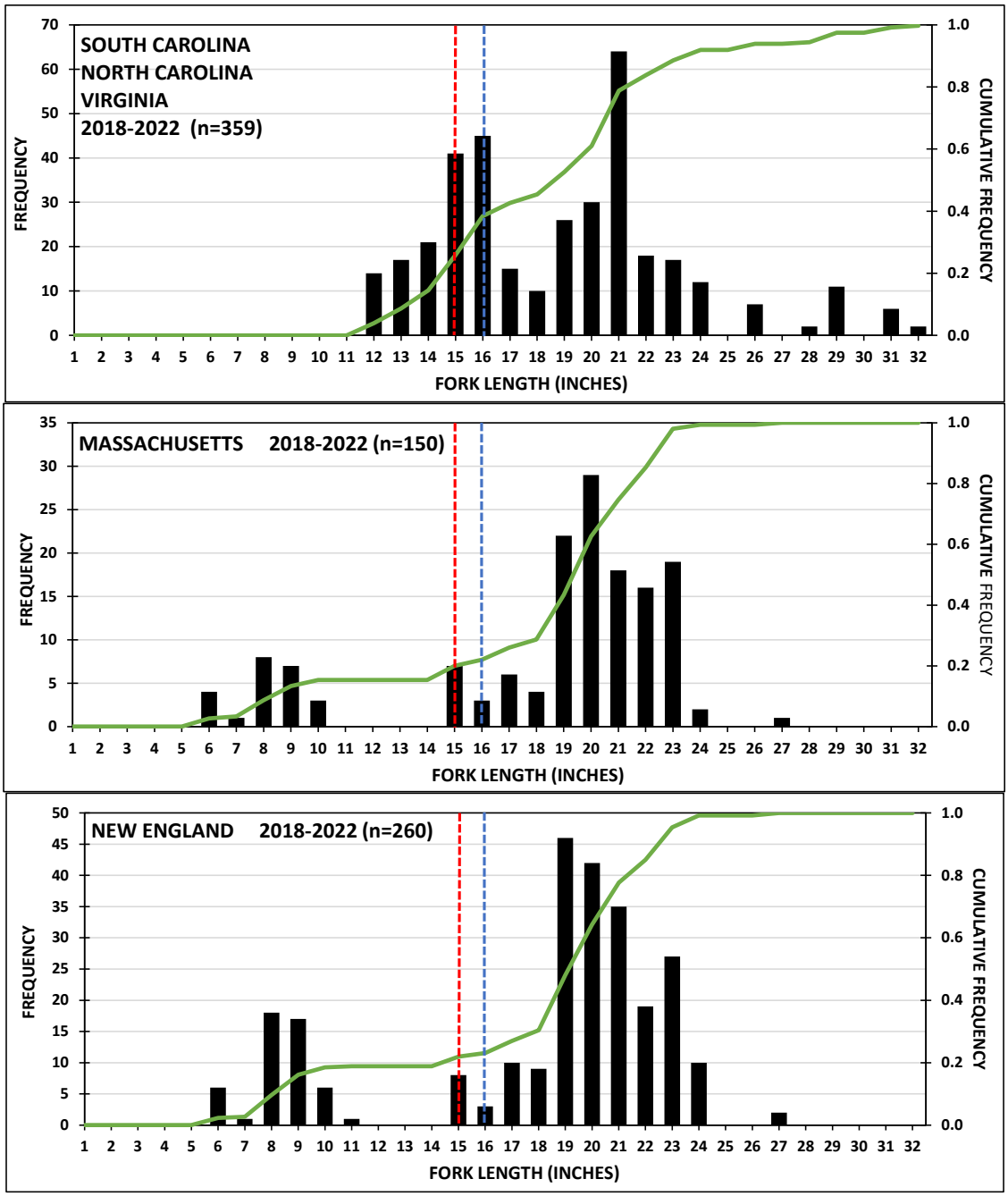


Figure 5. Frequency distributions for Atlantic bonito captured in Massachusetts (top), New England (middle), and South Carolina, North Carolina, and Virginia (bottom), 2018-2022, with cumulative frequencies (green line), estimated size at sexual maturity (red line), and proposed minimum size (blue line). Source: MRIP.

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MEMORANDUM

TO: Marine Fisheries Advisory Commission (MFAC)

FROM: Daniel J. McKiernan, Director

DATE: May 10, 2023

SUBJECT: **Industry Request to Increase Smooth Dogfish Trip Limit**

Under the Interstate Fishery Management Plan (FMP) for Coastal Sharks, Massachusetts receives a 0.43% share of the annual coastwide smooth dogfish quota. The coastwide quota has been stable at about 3.97 million pounds dressed weight since 2017, resulting in a state quota of 17,195 pounds dressed weight (Table 1). DMF manages the quota exclusively through a 100-pound limit. We routinely underutilize this quota. In 2022, Massachusetts caught just 15% of its allocated quota.

Table 1. State Shares of Coastwide Smooth Dogfish Quota for Calendar Year 2023

	State Share Percentages	State Share (dw mt)	State Share (dw lbs)
ME	0.021%	0.4	817
MA	0.433%	7.8	17,195
RI	1.363%	24.6	54,163
CT	0.234%	4.2	9,282
NY	7.953%	143.4	316,037
NJ	18.828%	339.4	748,214
DE	0.339%	6.1	13,464
MD	6.703%	120.8	266,362
VA	34.803%	627.4	1,383,026
NC	28.583%	515.2	1,135,860
SC	0.742%	13.4	29,481
TOTAL	100%	1,802.6	3,973,902

At the April 25 public hearing in Gloucester, Mark Plachowicz requested DMF consider increasing the smooth dogfish trip limit. Mark stated he routinely catches his limit while fishing in the south Cape summertime trawl fishery and it would be economically beneficial to him to have a higher limit. This follows similar interest expressed by Red's Best Seafood this past winter.

DMF indicated a willingness to look into this issue and potentially move forward with an in-season adjustment. Staff subsequently reviewed the FMP and it requires states to submit any potential changes to their possession limit(s) to the Coastal Sharks Technical Committee (TC) for review and the Coastal Sharks Management Board for approval—with annual specifications for the following fishing year. Accordingly, DMF can make no adjustment to the smooth dogfish trip for 2023 but will submit amendments for 2024 to the ASMFC to accommodate this industry request. DMF will continue to work through the ASMFC on this issue and will report back to the MFAC with updates.

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May 3, 2023

Michael Pentony
Regional Administrator
Greater Atlantic Regional Fisheries Office
NOAA Fisheries
55 Great Republic Drive
Gloucester, MA 01930

ATTN: Kyle Molton, Fishery Management Specialist

RE: NOAA-NMFS-2023-0054, Comments on Proposed 2023 Recreational GOM Haddock Measures

Dear Mr. Pentony:

Thank you for the opportunity to provide comments on the proposed 2023 recreational Gulf of Maine (GOM) haddock measures. As a partner in sustainable management of our shared stocks, the Massachusetts Division of Marine Fisheries (MA DMF) intends to continue to enact complementary recreational groundfish measures in the Gulf of Maine. However, MA DMF has concerns about NOAA Fisheries' proposal to adopt split mode regulations in the recreational GOM haddock fishery, in stark juxtaposition to both the Recreational Advisory Panel and Council recommendation for a singular set of regulations across all modes.

No recreational management action is complete without a discussion about catch estimate uncertainty. While the Marine Recreational Information Program (MRIP) was designed to provide precise coast-wide estimates of recreational catch, managers are increasingly faced with demands for variable angler access by season, by mode, and by state. However, the precision level of estimates often does not support such surgical management measures. Moreover, non-uniform measures impede our ability to evaluate catch and the impact of rule-changes in the aggregate which provides for the best precision levels.

Disparate bag limits and minimum sizes can also create a situation for rampant confusion, misunderstood rules, and at worse illegal fishing. Non-compliance, whether willful or accidental, increases management uncertainty. Split mode management is not a robust regulatory approach given the realities of our joint enforcement resources and that this particular stock is able to be filleted at sea. Most charter and private boat anglers fillet their haddock at-sea and therefore whole fish are unavailable for measurement by a shore-based sampler. Even if implementation was perfect, the catch estimates provided by MRIP to subsequently evaluate split mode performance are likely to feature unacceptably high PSEs.

MRIP does not provide robust length-frequency analysis by mode to evaluate the proposed split mode approach. This is due to a differential in observations quantity skewed towards the for-hire mode and in particular headboats. From 2019-2021, observations on headboats appeared about 4 times higher than on charter boats and about double the observations on private vessels. In 2022, observations were almost

equal across for-hire modes, driven primarily by an increase in charter observations in NH. For a species with a high bag limit, like haddock, the number of length observations can be somewhat misleading. For example, in Maine the mean length of haddock caught by private vessels was much larger than other modes in 2020 and 2021, but this is likely because these fish came from 1-2 intercepts, where the effect of a few large haddock could skew the results.

Utilizing the available scientific observations nonetheless, MRIP data suggest there is very little difference in size distribution of landed haddock across modes. This is not surprising given anglers generally use similar tackle and fish in similar areas (i.e., no shore-based catch), reducing the potential size selectivity. Differences within years and states are small enough that random sample variation cannot be ruled out. DMF analysis of 2019-2022 recreational GOM haddock catch show that the average length of observed haddock in the GOM among private anglers has increased over the last four years to a median length of 17.8" in 2022 – the largest median length of the recreational harvest modes.

MA DMF urges GARFO to carefully consider the level of support for - and potential consequences of - a mode split for GOM haddock. Recent DMF polling of recreational black sea bass anglers and captains in Massachusetts highlighted a strong difference of opinion between for-hire and private recreational interests around split modes. Whereas DMF proposed several mode split options at the request of for-hire captains, the polling revealed that the vast majority of anglers showed a strong objection to mode splits, affirming my opinion that mode splits come at the expense of pitting user groups against each other. Additionally, anglers that identified as fishing primarily from for-hire vessels tended to have similar desires for bag, size, and season limits as private mode anglers. In a sense what for-hire captains believed their patrons wanted for limits (and needed to book a trip) was not supported by the patrons themselves. In this case, concerns about equitable regulations and conservation outcomes led to MA DMF's rejection of split mode options in favor of a single set of rules across all modes.

Splitting regulations by modes should really be predicated on in-depth discussions about how to support not just sector separation of effort but the effect of sector separation on the accuracy of catch accounting. How would the current sampling scheme support more robust understanding of private angler catch length for instance? ACCSP and states have talked about riding aboard charter or private vessels to more representatively sample the catch, like we do on headboats. But that has practical limitations that are difficult to overcome, space aboard the vessel being just one issue. ASMFC's Recreational Technical Committee is discussing some pilot catch reporting methods that could increase measurements but it is not at an operational stage and as such cannot yet provide the feedback necessary for robust sustainable management decisions by mode.

Thank you for your consideration of these comments.

Sincerely,

Daniel J. McKiernan
Director, MA DMF

CC: Massachusetts Marine Fisheries Advisory Commission

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REBECCA L. TEPPER, Secretary
RONALD S. AMIDON, Commissioner
DANIEL J. MCKIERNAN, Director

April 3, 2023

Mr. Michael Pentony, Regional Administrator
NOAA Fisheries, Greater Atlantic Region
55 Great Republic Drive
Gloucester, MA 01930

Re: Comment on Proposed Rule NOAA–NMFS–2023–0019

Dear Mr. Pentony,

Please consider this comment in response to NOAA Fisheries' proposed rule for federal management measures for the summer flounder, scup and black sea bass fisheries for fishing year 2023 (88 FR 19046), specifically the change to the recreational scup open season from year-round to May 1–December 31.

The proposed federal January 1–April 30 recreational scup closure (in addition to reducing the possession limit by 10 fish to 40 fish) was initially recommended by the Mid-Atlantic Fishery Management Council (MAFMC) and approved by the Atlantic States Marine Fisheries Commission (ASMFC) in December 2022 as part of an action to achieve a mandatory 10% reduction in coastwide harvest for 2023. Because these changes to the federal regulations were not projected to achieve the full reduction, the states were also required to further modify their regulations through the ASMFC process to achieve the remaining reduction. Since that time, the states have selected and begun to implement a suite of ASMFC-approved state waters regulations that are projected to achieve the required reduction. This, in conjunction with some states' concerns about disproportionate impacts along the coast from the closure, led the ASMFC to recommend that NOAA Fisheries reconsider the federal seasonal closure. The MAFMC will consider its response to the ASMFC motion this week.

During your anticipated review of the need and appropriateness of implementing a January 1–April 30 federal recreational scup closure, I ask that you consider the following in addition to whether the coastwide reduction is achieved by the states' measures.

- The regional approach for recreational scup management has most often meant that the southern states largely align their rules with the federal measures while the northern states amend their regulations to shoulder most of the burden needed to achieve but not exceed the recreational harvest target. When the motion was made to amend the federal measures for 2023 it was, as was stated by my ASMFC Board proxy during the meeting, with the expectation that this history would repeat itself, and all states would thereby contribute to the coastwide reduction. While ultimately many of the southern states have chosen not to implement the proposed federal closure (or minimum size) in state waters, its enactment in federal waters will ensure a more meaningful contribution to the coastwide reduction due to the harvest location of

most scup landed within their states. Though it is argued that these states' harvest and implementation of measures is inconsequential to the coastwide target, the disparity in recreational regulations between that southern and northern states—not just for scup but also black sea bass—is highly significant to those involved in these fisheries.

- The states of Massachusetts through New Jersey, where more than 99% of all recreationally harvested scup are landed, have all selected state waters measures that include a closure during January–April to help achieve the required reduction. While not being implemented until 2024, these closures are being credited to the states' 2023 projected reductions, and it would be inappropriate for the states to roll back the measures before they take effect next year. Assuming state measures are not revised again before spring 2024, having federal waters closed during the same period next year will promote compliance and enforcement with the states' measures. Additionally, the Recreational Demand Model cannot analyze federal waters measures separately from state measures, and the harvest reduction associated with the states' combined measures assumes application of the states' closures in federal waters.
- All states from Massachusetts through North Carolina are closed to recreational black sea bass harvest during the months of January–April (with the rare exception of those that opt into the February access program, which has been limited to Virginia in recent years). Given the overlap of these species' fisheries, the scup closure will help limit non-compliance with the black sea bass retention prohibition and reduce regulatory discarding of sea bass, including fish generally caught at depth during this time of year and more susceptible to barotrauma. Reductions in recreational black sea bass discard mortality could translate into more harvest opportunities for this species which is subject to much more stringent regulations than scup.
- A closure during January–February when Marine Recreational Information Program (MRIP) sampling does not occur in the management unit (except in North Carolina) avoids the inherent inequity of a "free" (i.e., not accounted for with regards to harvest limits) two months of fishing only for those states with access to the resource at that time of year.

In closing, I encourage you to enact the federal recreational scup measures as proposed, including a May 1–December 31 open season, 40 fish possession limit, and 10" minimum size. Thank you for the opportunity to comment.

Regards,

Daniel J. McKiernan
Director

Cc:
MA Marine Fisheries Advisory Commission
Robert Beal, Toni Kerns, ASMFC
Chris Moore, MAFMC
Emily Keiley, NOAA Fisheries

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MEMORANDUM

TO: Daniel J. McKiernan, Director

FROM: Michael P. Armstrong, Ph.D., Deputy Director

CC: Marine Fisheries Advisory Commission

DATE: May 2, 2023

SUBJECT: **Summary of Earmark-Funded Winter Flounder Research FY2023**

In FY2023 MADMF received $75,000 through a budget earmark to conduct studies to examine winter flounder spawning along coastal Massachusetts. The goal of this research was to characterize temporal and spatial patterns of winter flounder spawning at a scale that is finer than wha tis available from prior research and in the scientific literature. This memo provides a summary of the research that was accomplished during FY2023 under this funding source.

Task 1: Maturity sampling: Sea sampling will be conducted aboard contracted draggers in southern Cape Cod Bay to establish the progression of female gonad development in the spring. The goal will be to project a spawning date for this location based on the occurrence of running ripe and spent females. MADMF will contract for 8 trips and use the captain's expertise to select areas/bottom types near embayments that are towable and contain at least modest amounts of winter flounder. The information collected during these chartered trips will be complemented with additional port sampling information resulting in a coarse but simple way to re-examine the spawning dates. Unfortunately, no scientific surveys occur at the appropriate time in the spring to capture the near spawning condition fish, and sea sampling by NMFS does not include examining the gonads for maturation staging. Further refinement of the spawning date may involve the daily aging of young-of-year winter flounder but that is beyond the scope of the present work.

SEA SAMPLING

In support of Task 1, Fisheries Research and Monitoring staff contracted 4 commercial otter trawlers (Table 1) to execute dedicated sampling trips to collect winter flounder sex and maturity information from Massachusetts state waters.

Table 1. Contracted commercial fishing vessels

Vessel Name	Owner/Operator	Homeport
F/V Challenger	Phil Michaud	Sandwich, MA
F/V Gabriella Rose	Mark Gustafson	Scituate, MA
F/V Charles Seabrook	Mark Plachowicz	Gloucester, MA
F/V Mystique Lady	Joseph Jurek	Gloucester, MA

Sampling was designed to collect information on the spatial and temporal distribution of winter flounder in near-shore and state coastal waters during times when winter flounder were thought to be spawning. When contracting vessels, challenges arose due to lack of interest that was related to the opening of the Northern GOM scallop season and the Nantucket Sound squid fishery. These are both very lucrative fisheries that the small owner-operator fishing vessels, which we were targeting, rely on and contributes significantly to their annual income. As a result, staff expanded the study area to include all areas from Ipswich Bay south to Cape Cod Bay. Although beyond the original scope of the proposal, the information will be beneficial in assessing the winter flounder Time of Year (TOY) restrictions for all of Massachusetts waters and not only Cape Cod Bay.

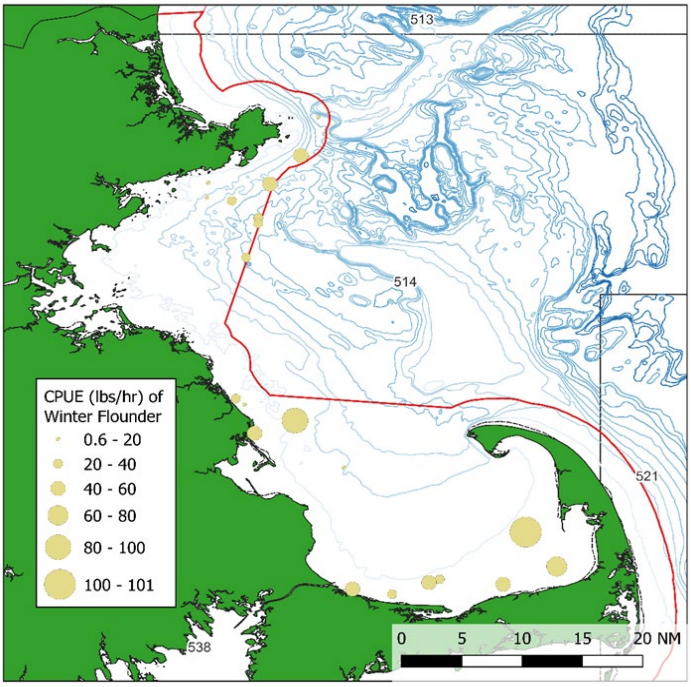
To date, 3 sea sampling trips have been completed (Table 2). Vessels were issued a state LOA and staffed with 2 DMF scientists on each trip. They were instructed to make commercial style tows, ranging from 30 minutes to 1 hour in depths that ranged from 30 to 200+ feet of water. To increase spatial coverage and sample varying depths and habitats, tows were spaced at a minimum of 1 nautical mile apart at varying depths. All hauls were processed and weighed, and environmental information collected. In total, 461 winter flounder lengths have been taken, 459 winter flounder sex and maturity observations recorded, and 247 biological samples (otoliths for Atlantic cod and genetic fin clips for winter flounder) collected.

Table 2. Sea Sampling since 4/1/23 (Gloucester and Sandwich)

#	CCBay1	CA/MassBay1	CCBay2	CA/MassBay2	Total
Trips	1	1	1	1	4
Hauls	7	4	5	5	21
Combined Tow Time	4h 48m	4h 23m	2h 23m	4h 44m	16h 18m
WF lengths	194	62	78	127	461
WF Sex/Maturity	194	62	78	125	459
Age/biological samples	94	59	44	50	247

Catches have been variable with the highest catch per unit effort (CPUE) in Cape Cod Bay on Billingsgate Shoal (Figure 1). This tow was in 30' of water. Interestingly, excluding of this tow, the highest catch rates were in deeper water, both off the north and south shore. A more through look at sex and maturity information on these trips will be conducted after this spring and hopefully help explain these differences.

Figure 1. Winter flounder CPUE caught during contracted sea sampling trips to date



PORT SAMPLING

Recently, has increased its capacity to port and sea sample with the addition of two full-time technicians. Beginning on February 1, staff began port sampling commercial landings in Gloucester and Scituate targeting winter flounder. This opportunistic type of sampling is a low-cost and an efficient way to collect winter flounder sex, maturity, and biological information when compared to sea

sampling. Given its advantages, port sampling is an ideal method to collect winter flounder information, however, there is a tradeoff and that is that spatial information is coarse and dependent on fisheries. There is no control of where the samples come from and when they are available.

Currently, 22 port sampling trips have been conducted in Gloucester and Scituate. Gloucester lands more GOM winter flounder that any other port and due to the proximity to the Gloucester field station, it was sampled more often. In total, 567 flounder have been measured, sexed and staged. Four hundred and thirty DNA biological samples have been collected in support of a Umass-Amherst PhD candidate's thesis and to augment collections that will be included with related winter flounder work that DMF is conducting in Boston Harbor (Table 3).

Table 3. Port Sampling since 2/1/23 (ports of Gloucester and Scituate)

#	Gloucester	Scituate	Total
Intercepts	17	5	22
Dealers sampled	3	1	4
Vessels sampled	10	3	13
WF lengths	459	108	567
WF Sex/maturity	459	108	567
WF biological samples	322	108	430

Winter flounder port sampling efforts will continue through May on a weekly basis and more information on maturity and the heavily skewed sex ratios will be collected. Note that the port sampling that has been dedicated towards this effort have been "in-kind" and the winter flounder budgeted funds were not used. Future funding may be necessary for travel and supplies if work is extended into 2024.

Potential FY 2024 Research

Once data collection is completed this spring, information will be analyzed, and a logistic regression model will be used to determine the winter flounder spawning dates. In 2021, Micah Dean and Mike Armstrong piloted this work and based off a limited number of samples, determined a peak spawning date of April 17th, with 25% of the fish starting to spawn by March 26th and 25% done spawning by May 8th. In addition, the DMF Age and Growth lab have been developing a strategy to back calculate hatch dates of winter flounder by conducting daily aging on Young of the Year (YOY) otoliths. Preliminary work found that the average first annuli was laid down on May 13. The larval stage of winter flounder is not exactly known, but assumed it is approximately 2 weeks which further supports a late April peak spawning date.

Moving forward into FY 2024, an additional season of winter flounder sex and maturity sampling would refine the winter flounder spawning dates and inform management on TOY restriction dates. Given the higher-than-expected charter prices in 2022, the number of sea sampling trips was decreased from the proposed number by 2. Increasing the amount of funds dedicated to sea sampling would increase both spatial and temporal coverage, as well as detect interannual and regional differences.

In 2022 the techniques for daily aging of winter flounder YOY was still being developed by Age and Growth staff. All YOY flounder were collected from one embayment, Boston Harbor. In 2023, through a separate funding source, staff can collect additional YOY from different Massachusetts GOM estuaries. Working with John Logan we could also collect YOY from Cape Cod northern estuaries that fall within the GOM winter flounder stock area. Aging these fish will improve hatch date estimates and further reveal spawning dates.

Task 2A: **<u>Fyke Survey</u>: To complement existing eDNA surveys in Cape embayments being conducted currently (2021-2022), we propose to add in a fyke net survey component to our Waquoit Bay site. RIDEM has a long-term fyke survey in place for Rhode Island embayments that has demonstrated efficacy in capturing adult winter flounder. Inclusion of a fyke survey following RIDEM methodology would allow for direct observation of adult winter flounder in this embayment. Fyke nets would be installed in Waquoit Bay in December and monitored regularly through April.**

MA DMF purchased, modified, and installed four fyke nets in Waquoit Bay in mid-January 2023 (Fig. 2), which corresponds to the start of the time of year (TOY) restriction period for dredging work in this region of MA. Nets were monitored 1-2 times weekly through the end of April. All winter flounder caught in the nets were measured, assessed for sex and maturity status based on external morphology (ripe female based on hydrated eggs and distended abdominal cavity, ripe/running based on extruded eggs (female) or milt (males) following gentle expression of abdominal cavity, spent female based on concave abdominal cavity). All fish were released alive. Larger fish (>12" fork length) were outfitted with a conventional tag prior to release. Temperature was monitored continuously at each fyke location through the addition of a HOBO temperature logger to each net, which recorded bottom temperature at five minute intervals. Point water quality data were also collected 1-2 times weekly at each fyke site using a portable YSI unit (temperature, salinity, dissolved oxygen, pH, turbidity).

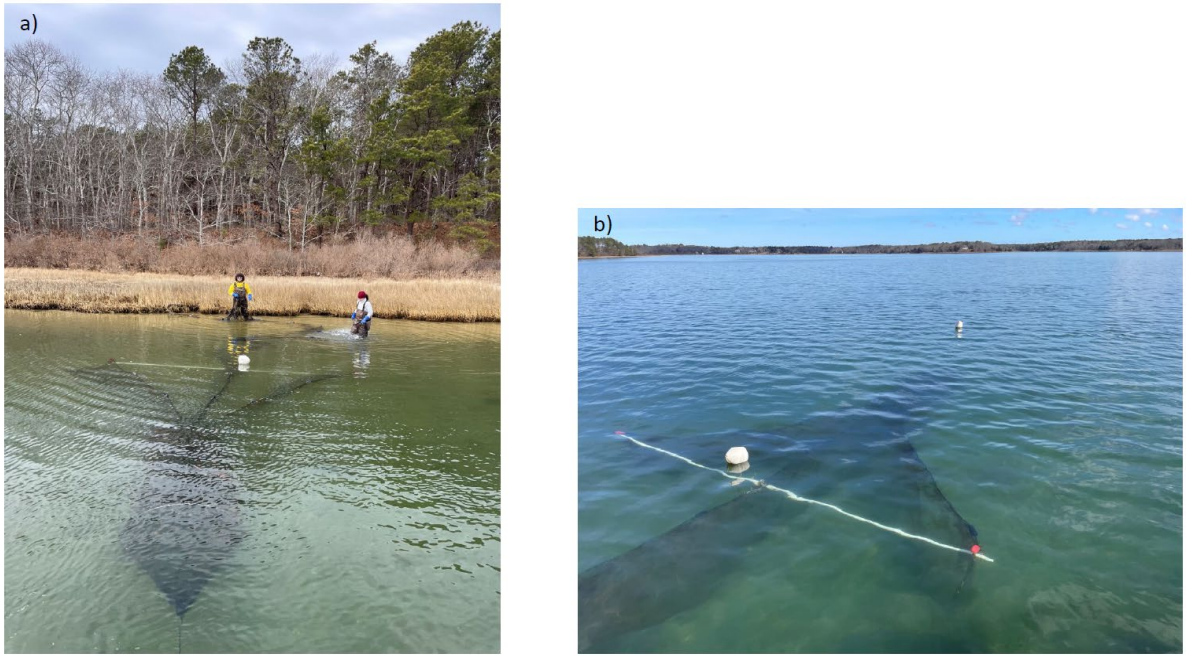
Winter flounder catches were observed starting with the first net haul on January 25, 2023 and consistent low catch levels were observed through early March. Ripe and running male and female winter flounder (Fig. 3) were observed from late January through the end of February. A total of 27 winter flounder were collected during the survey. The majority (74%) of the catch were collected at the head of Waquoit Bay (Station WB_B; Fig. 4). Catches then ceased for the remainder of March through April, with the exception of a single winter flounder caught in mid-April. Water eDNA detections of winter flounder in the previous year were elevated in February and March, which were the months of peak abundance of mature fish reported in the MA DMF Waquoit Bay-Eel Pond Estuarine Report (Curley et al. (1971)).

Task 2B: <u>Additional eDNA Sampling</u>: During the fyke survey (Dec-Apr 2022-23), we propose to continue our monthly water sampling for eDNA in Waquoit Bay to a) compare directly with fyke catch results and b) compare with our existing 2021-22 dataset to better understand if seasonal patterns in habitat use are consistent across years. Our existing eDNA data showed a lack of winter flounder in late fall to early winter followed by a sharp increase in detection in mid-late winter. Additional funds for eDNA analysis can be used for refining methods used in our pilot study to streamline the process for broader application towards monitoring. For example, paired comparisons of surface and bottom water samples, shoreside and sub-tidal samples, and different filter pore sizes will allow us to refine our current sampling to potentially simplify the process thus expanding its utility to a broader set of embayments and user groups.

Using the same 13 site array sampled in our 2021-22 eDNA survey (Fig. 4), we collected water samples for winter flounder qPCR eDNA analysis every other week from late January through the end of April. For each sampling event, we collected 1 liter bottom water samples from each of the 13 stations. A paired surface water grab was collected at 4 stations during each biweekly sampling to allow us to determine if eDNA sampling in Waquoit Bay and other shallow estuaries and harbors in MA can be simplified to surface water sampling moving forward. Water quality data were collected with each water sample using the YSI portable sampler for the same variables described in 2A for fyke survey monitoring. MA DMF also purchased a portable water filtration instrument during the FY23 sampling, which will further improve sampling efficiency moving forward. To maintain consistency with the 2021-22 sampling protocol, MA DMF continued to collect water samples in 1 liter bottles that were filtered back in our lab at SMAST East in New Bedford using 0.2 micron filters. However, we also collected samples from four

sites monthly using the portable sampler in the field with more coarse filters (1.0 and 5.0 micron) that allow for a greater volume of water to be processed (up to 8 liters during our field trials). We will compare these results with the 0.2 micron lab-filtered samples to determine the best methods and filters for future filtering protocols. All eDNA filters collected during this Winter-Spring 2023 field season are currently being stored frozen at SMAST EAST with DNA extraction and qPCR analysis for winter flounder eDNA planned for later Spring 2023 at GMGI. eDNA results will be compared with a) current season fyke catches, b) 2021-22 Waquoit eDNA results and c) environmental conditions to improve our understanding of how eDNA results relate to winter flounder relative abundance and annual changes in environmental conditions.

Figure 2. Images of fyke nets deployed in Waquoit Bay. View A (left) looks shoreward from the codend of the trap towards the wings and leadline anchored to the shoreline wile. View B (right) looks seaward toward the wings and codend.



Additional Activities:
Sediment samples (n=207) collected from each of the 2021-22 eDNA sampling sites were prepared and submitted to a commercial lab for carbon and nitrogen content analysis to better characterize habitat characteristics where winter flounder eDNA detections were observed alongside the water column environmental data collected during that time period.

Preliminary results of both the eDNA and fyke survey were presented to the public as part of the Waquoit Bay National Estuarine Research Reserve (WBNERR) Seminar Series. The recording is available on the WBNERR website: https://www.youtube.com/watch?v=KTw3FsywrkY.

Figure 3. Examples of mature, ripe-and-running a) female and b) male winter flounder collected during the Winter 2023 survey. Such female and male individuals were extruding eggs and milt, respectively, from their vents (blue arrow) during processing.

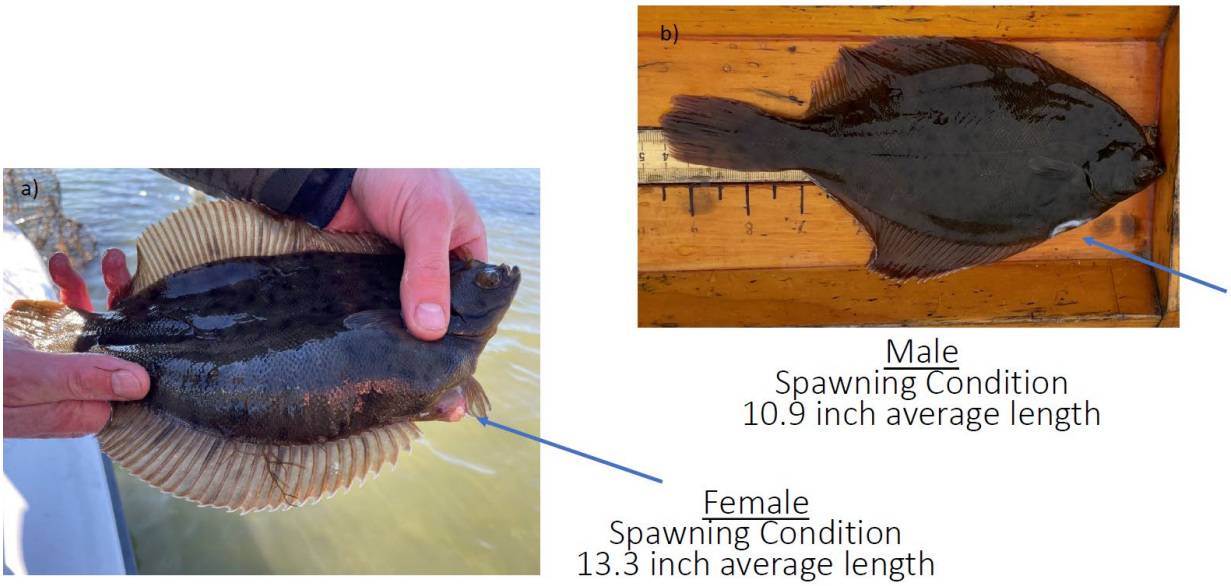


Figure 4. Locations of the four fyke net stations (red) and 13 eDNA water sampling stations (yellow) sampled during the Winter-Spring 2023 field season.