Atlantic States Marine Fisheries Commission

Atlantic Striped Bass Management Board

May 4, 2022
11:30 a.m. – 5:15 p.m.
Hybrid Meeting

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(M. Gary)*	11:30 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from January 2022	11:30 a.m.
3.	Public Comment	11:35 a.m.
4.	Draft Amendment 7 for Final Approval **Final Action** (includes 1 hour lunch break) • Review Options and Public Comment Summary *(E. Franke)* • Advisory Panel Report *(E. Franke)* • Law Enforcement Committee Report *(K. Blanchard)* • Consider Final Approval of Draft Amendment 7	11:45 a.m.
5.	Review 2022 Stock Assessment Update Projection Scenarios *(K. Drew)*	4:20 p.m.
6.	Consider Next Steps for Draft Addendum VII to Amendment 6 **Possible Action** *Motion from October 2021: Move to defer until May 2022 consideration by the Atlantic Striped Bass Board of Draft Addendum VII to Amendment 6 to allow further development and review of the transfer options.*	4:35 p.m.
7.	Review and Populate Advisory Panel Membership *(T. Berger)* **Action**	5:05 p.m.
8.	Elect Vice-Chair *(M. Gary)* **Action**	5:10 p.m.
9.	Other Business/Adjourn	5:15 p.m.

The meeting will be held at The Westin Crystal City (1800 Richmond Highway, Arlington, VA; 703.486.1111) and via webinar; click here for details

MEETING OVERVIEW

Atlantic Striped Bass Management Board
May 4, 2022
11:30 a.m. – 5:15 p.m.
Hybrid

Chair: Marty Gary (PRFC) Assumed Chairmanship: 01/22	Technical Committee Chair: Vacant	Law Enforcement Committee Rep: Kurt Blanchard (RI)
Vice Chair: Vacant	Advisory Panel Chair: Louis Bassano (NJ)	Previous Board Meeting: January 26, 2022
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, NMFS, USFWS (16 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from January 2022

3. Public Comment – At the beginning of the meeting, public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Draft Amendment 7 (11:45 a.m.-4:20 p.m.) Final Action
(includes 1 hour lunch break)

Background

- The status and understanding of the striped bass stock and fishery has changed considerably since implementation of Amendment 6 in 2003, which has raised concerns that the existing management program may no longer reflect current fishery needs and priorities.
- Accordingly, the Board initiated development of Draft Amendment 7 to consider addressing a number of important issues facing striped bass management and build upon the Addendum VI action to end overfishing and initiate rebuilding.
- In January 2022, the Board approved for public comment Draft Amendment 7 with proposed options addressing four issues: management triggers, recreational release mortality, rebuilding plan, and conservation equivalency.
- Twelve public hearings were conducted in March **(Briefing Materials)** and written comments were accepted through April 15 **(Supplemental Materials)**.
- The Advisory Panel reviewed Draft Amendment 7 in April 2022 **(Supplemental Materials)**.

Presentations

- Overview of options and public comment summary by E. Franke
- Advisory Panel Report by E. Franke; Law Enforcement Committee Report by K. Blanchard

Board actions for consideration at this meeting

- Select management options and implementation dates.
- Approve final document.

5. Review 2022 Stock Assessment Update Projection Scenarios (4:20-4:35 p.m.)

Background

- The 2022 stock assessment update for Atlantic striped bass will be conducted in Summer 2022 with results expected in October 2022.
- The assessment update will provide stock projections including calculating the level of fishing mortality necessary to rebuild the stock by 2029 under a specified recruitment assumption. The recruitment assumption is considered in Draft Amendment 7.

Presentations

- Overview of projection scenarios by K. Drew

Board guidance for consideration at this meeting

- Board guidance is needed on the probability scenarios for the rebuilding projections (percent chance of achieving rebuilding).

6. Draft Addendum VII to Amendment 6 (4:35-5:05 p.m.) Possible Action

Background

- In May 2021, the motion to include the commercial quota allocation issue in Draft Amendment 7 failed for lack of a majority. Many Board members recognized that Delaware has raised this issue for some time and Delaware has been asking for a more equitable allocation. In addition there were some individuals that expressed an interest in reviewing more recent data to consider in the allocations.
- In August 2021, concurrent with the development of Draft Amendment 7, the Board initiated Draft Addendum VII to Amendment 6 to consider allowing the voluntary transfer of commercial striped bass quota between jurisdictions that have commercial quota.
- In September 2021, the PDT discussed Draft Addendum VII to Amendment 6 **(Briefing Materials)**.
- Due to the PDT's concerns and the Board's focus on Draft Amendment 7, in October 2021, the Board deferred consideration of Draft Addendum VII until May 2022 to allow further development and review of the transfer options.

Presentations

- Overview of Draft Addendum VII to Amendment 6 by E. Franke

Board Actions for Consideration

- Consider next steps for Draft Addendum VII to Amendment 6.

7. Advisory Panel Membership (5:05-5:10 p.m.) Action
Background • There is one new nomination to the Atlantic Striped Bass Advisory Panel—Jamie Lane, a commercial gillnetter from North Carolina **(Briefing Materials)**.
Presentations • Nomination by T. Berger
Board actions for consideration at this meeting • Approve Atlantic Striped Bass Advisory Panel nomination.

8. Elect Vice Chair (5:10-5:15 p.m.) Action
Background • The vice chair seat is empty since Marty Gary (PRFC) has become the new chair.
Board actions for consideration at this meeting • Elect Vice Chair

9. Other Business/Adjourn (5:15 p.m.)

Atlantic Striped Bass

Activity level: High

Committee Overlap Score: Medium (TC/SAS/TSC overlaps with BERP, Atlantic menhaden, American eel, horseshoe crab, shad/river herring)

Committee Task List

- PDT – develop all documentation for the development of Draft Amendment 7
- SAS/TC – Conducting the 2022 stock assessment update
- TC – June 15th: Annual compliance reports due

TC Members: Kevin Sullivan (NH), Caitlin Craig (NY), Nicole Lengyel Costa (RI), Alexei Sharov (MD), Charlton Godwin (NC), Ellen Cosby (PRFC), Brooke Lowman (VA), Gail Wippelhauser (ME), Gary Nelson (MA), Brendan Harrison (NJ), Jeremy McCargo (NC), Kurt Gottschall (CT), Margaret Conroy (DE), Luke Lyon (DC), Tyler Grabowski (PA), Peter Schuhmann (UNCW), Tony Wood (NMFS), Steve Minkkinen (USFWS), John Ellis (USFWS), Katie Drew (ASMFC), Emilie Franke (ASMFC)

SAS Members: Michael Celestino (NJ, Chair), Gary Nelson (MA), Alexei Sharov (MD), Hank Liao (VMRC), John Sweka (USFWS), Margaret Conroy (DE), Katie Drew (ASMFC), Emilie Franke (ASMFC)

PDT Members: Nichola Meserve (MA), Nicole Lengyel Costa (RI), Brendan Harrison (NJ), Simon Brown (MD), Max Appelman (NMFS), Greg Wojcik (CT), Emilie Franke (ASMFC)

Tagging Subcommittee (TSC) Members: Stuart Welsh (WVU, Chair), Angela Giuliano (MD), Beth Versak (MD), Brendan Harrison (NJ), Chris Bonzek (VIMS), Gary Nelson (MA), Ian Park (DE), Jessica Best (NY), Josh Newhard (USFWS), Katie Drew (ASMFC), Emilie Franke (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC STRIPED BASS MANAGEMENT BOARD

Webinar
January 26, 2022

These minutes are draft and subject to approval by the Atlantic Striped Bass Management Board.
The Board will review the minutes during its next meeting.

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INDEX OF MOTIONS

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)
Sen. David Miramant, ME (LA)
Cheri Patterson, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Mike Armstrong, MA, proxy for Dan McKiernan (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Sarah Peake (LA)
Jason McNamee (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Jesse Hornstein, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)
G. Warren Elliott, PA (LA)
John Clark, DE (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, proxy for B. Anderson (AA)
Russell Dize, MD (GA)
David Sikorski, MD, proxy for Del. Stein (LA)
Pat Geer, VA, Administrative proxy
Bryan Plumlee, VA (GA)
Shanna Madsen, VA, proxy for Sen. Mason (LA)
Chris Batsavage, NC, proxy for K. Rawls (AA)
Jerry Mannen, NC (GA)
Bill Gorham, NC proxy for Rep. Steinberg (LA)
Marty Gary, PRFC
Dan Ryan, DC, proxy for J. Seltzer
Max Appelman, NMFS
Mike Millard, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Kevin Sullivan, Technical Committee Chair
Mike Celestino, Stock Assmnt Subcommittee Chair
Kurt Blanchard, Law Enforcement Representative

Staff

Bob Beal
Toni Kerns
Laura Leach
Tina Berger
Pat Campfield
Lisa Carty
Kristen Anstead
James Boyle
Katie Drew
Maya Drzewicki
Emilie Franke
Lisa Havel
Chris Jacobs
Jeff Kipp
Sarah Murray
Caitlin Starks
Deke Tompkins

Guests

Dave Anderson
Jerry Audet
Pat Augustine, Coram, NY
Jason Avila, Avila Global
Matt Ayer, MA DMF
Duncan Barnes
Megan Barrow, NYS DEC
Mel Bell, SC (AA)
Rick Bellavance
John Bello
Peter Benoit, Ofc. Sen. King, ME
Josh Bergan
Alan Berger
Jessica Best, NYS DEC
Alan Bianchi, NC DENR

Guests (continued)

Andrea Bolduc, MA House
Christopher Borgatti
Jason Boucher, NOAA
Peter Bravo
Andrew Briggs
Matt Broderick
Simon Brown, MD DNR
Jeff Brust, NJ DEP
George Bucci
Erika Burgess, FL FWS
Tony Butch
Jonathan Cabrera
Chris Campo
Bruce Caporale
Chris Cassel
Patrick Cassidy
Bryan Choquette
Matthew Cieri, ME DMR
Peter Clark, NJ DEP
Germain Cloutier
Josh Cohn
Allison Golden, CBF
Margaret Conroy, DE DFW
Margaret Conroy, DE DFW
John Contello
Colleen Coogan, NOAA
Michael Cook
Brian Coombs
Joe Coppola
Heather Corbett, NJ DEP
Nicole Lengyel Costa, RI DEM
Nathan Cowen
Jack Creighton
Greg Cudnik
Rip Cunningham
Jessica Daher, NJ DEP
Bob Danielson
Rachel Dean
Dominic De Flumeri
Louis Defonten
Laura Deighan, NOAA
Greg DiDomenico
Lawrence Di Donato
Evan Dintaman
Steve Doctor, MD DNR
Chris Dollar
Timothy Donnelly
Carl Dulay
Mark Eustis, Grey Owl Analytic
Peter Fallon, Maine Stripers
Jimmy Fee
Lynn Fegley, MD DNR
Cynthia Ferrio, NOAA
Kenneth Fletcher, CBF
Julien Frank
Sewell Frey
Anthony Friedrich, SGA
Tom Fuda
Lorena de la Garza, NC DENR
John Gans, TRCP
Jeffrey Gearhart, NOAA
Paul Genovese, MD DNR
Lewis Gillingham, VMRC
Angela Giuliano, MD DNR
Willy Goldsmith
Frank Goncalves
James Goodhart
Jesse Gordon, RCN
Kurt Gottschall, CT DEEP
Tyler Grabowski, PA F&B
Jake Hardy
Cynthia Harkness
Brenden Harrison, NJ DEP
Eric Harrison
Andrew Hayes
James Henne, US FWS
Helen Takade Heumacher, EDF
Rebecca Heuss, NH FGD
Jaclyn Higgins, TRCP
Carle Hildreth
Nicholas Hill
Peter Himchak, Cooke Aqua
Rich Hittinger
Scott Hoffer, SAPPI
Carol Hoffman, NYS DEC
Joe Holbeche, U Mass
Jacob Holtz, MD DNR
Jeffrey Horne, MD DNR
Harry Hornick, MD DNR
Chris Horton
Edward Houde
Tom Hughes
Bob Humphrey
Jim Hutchinson
Taylor Ingraham
Stephen Jackson, FL FWS
Peter Jenkins
Blaise Jenner, ME DMR
James Jewkes
Gerald Jones
Michael Kapareiko
TJ Karbowski
Kurt Karwacky
Pat Keliher, ME (AA)
Brian Kendall
Carrie Kennedy, MD DNR
Greg Kennedy, NYS DEC
Adam Kenyon, VMRC
Ross Kessler, MA DMF
Rich King
Thomas Kosinski
Richard Kuhlman
Aaron Landry
Wilson Laney
Brandon Lansing
Nils Larson
Peter Leary
Kyle Lewis
Ole Leyva
Carl Lobue, TNC
Nick Lombardi
Brooke Lowman, VMRC
Dee Lupton, NC DENR
Chip Lynch, NOAA
Pam Lyons, Wild Oceans
Edward Maley
Christian Martin
Frank Masseria
Genine McClair, MD DNR
Tara McClintock, Cornell
Dan McKiernan, MA (AA)
Conor McManus, RI DEM
Kevin McMenamin
Frank Meisel
Jeff Mercer, RI DEM

Guests (continued)

Nichola Meserve, MA DMF
Steve Meyers
Steve Minkkinen, FL FWS
Pete Mohl
Remy Moncrieffe, Audobon
Chris Moore, CBF
Brian Neilan, NJ DEP
Brandon Muffley, MAFMC
Allison Murphy, NOAA
Khoa Nguyen
Adam Nowalsky
Callan Noone
George O'Donnell, MD DNR
Zane Oliver
Christian Olla
Derek Orner
Alexi Papadopoulo
Patrick Paquette
Ian Park, DE DFW
Alexis Park, MD DNR
Justin Pellegrino, NYS DEC
Dave Peros
Patrick Perrotto
Wes Phillips
Anthony Pizzella
Kelly Place
Michael Plaia
Nick Popoff, FL FWS
Mike Porta, PA F& B
Will Poston, SGA
Brian Potvin
Nick Prawer
Hunter Priebe
Evan Priovolos
Michael Quinlan
Jill Ramsey, VMRC
Thomas Rapone
Kathy Rawls, NC (AA)
Andrew Reichardt, Flyfishers Intl.
Paul Risi, KBCC, NYC
Matthew Risser
Patrick Rudman
Courtney Roberts
Lenny Rudow
Tony Sarcona
David Secor, UMD CES
Alexei Sharov, MD DNR
Phillip Sheffield
Matthew Shoultz
Harold Smith
Somers Smott, VMRC
Dustin Sperling
Eric Spicer
Mike Spinney
Ross Squire
Michael Stangl, DE DFW
Lauren Staples, NH FGD
Graham Stephens
David Stormer, DE DFW
Elizabeth Streifeneder, NYS DEC
Dave Surdel
John Sweka, US FWS
George Sylvestre
Colin Temple
Lane Thurgood
Luis Tirado
Michael Toole
JC Unser
Jim Uphoff, MD DNR
Chris Uraneck, ME DMR
Peter Vandergrift
Taylor Vavra, Stripers Forever
Thomas Ventrone
Beth Versak, MD DNR
Mike Waine, ASA
Arek Zenel-Walasek
Michael Walp
Craig Weedon, MD DNR
Peter Wenczel
Greg Wenz
Ben Whalley
Peter Whelan
Zachary Whitener, GMRI
Lowell Whitney, US FWS
Kate Wilke, TNC
Angel Willey, MD DNR
John Page Williams
Logan Williams
Roxanne Willmer
Charles Witek
Steven Witthuhn
West Wolfe, *The Leader*
Michael Woods
Spud Woodward, GA (GA)
Chris Wright, NOAA
John Wu
Harvey Yenkinson
Phil Zalesak
Christopher Zikowitz
Jordan Zimmerman, DE DFW
Erik Zlokovitz, MD DNR
Renee Zobel, NH FGD

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Wednesday, January 26, 2022, and was called to order at 1:30 p.m. by Chair Martin Gary.

CALL TO ORDER

CHAIR MARTIN GARY: I would like to call to order the Atlantic States Marine Fisheries Commission Winter, 2022, Striped Bass Management Board. Today, well first of all for those of you who don't know me, my name is Marty Gary, I'm from the Potomac River Fisheries Commission. I'm the incoming Chair, this will be my first meeting.

Previously David Borden served through October of last year. Our Vice-Chair is currently vacant. We'll be addressing that vacancy at the May board meeting. Our Technical Committee Chair is Kevin Sullivan, from New Hampshire. Our Advisory Panel Chair is Lou Bassano from New Jersey. Our Law Enforcement Committee representative is Kurt Blanchard from Rhode Island. Previously this Board met on October 20, 2021.

First order of business is to go to, and actually, before we do that. I want to take a moment to provide some gratitude and thanks to the outgoing Chair, David Borden. David served through October of this past year, 2021, and had to navigate a labyrinth of meetings, and the logistics associated with them, the work group that met in the summer of 2020. It was a tremendous amount of work. David, we just want to thank you for your leadership, and all your hard work that went into that, so thank you very much.

MR. DAVID V. BORDEN: Yes, thanks.

CHAIR GARY: You're welcome, David, it's great work. You have gotten us tantalizingly close with this Amendment, so hopefully we'll be able to get that through at this meeting, and then out to public comment. The public has been very patient waiting for this. One other item I wanted to hit.

We have a dynamic Board, it changes a lot, and there is one name that I'm not familiar with. Maybe it's a mistake, but Jesse Hornstein. Jesse, I don't think I've met you personally, but maybe somebody else has already welcomed you through the other boards, but welcome to the Striped Bass Board. As I understand, you are the Administrative Proxy for James Gilmore, so welcome, Jesse.

MR. JESSE HORNSTEIN: Thank you.

APPROVAL OF AGENDA

CHAIR GARY: All right, so we'll go ahead and move into the agenda. The first order of business is Approval of the Agenda. Are there any changes, modifications to the agenda as it's been presented today?

MS. TONI KERNS: I have no hands, Marty.

APPROVAL OF PROCEEDINGS

CHAIR GARY: Thank you, Toni, and so the agenda is approved by consent. Next up is the Approval of the Proceedings from October, 2021. Are there any modifications to the last meeting of this Board in October, 2021?

MS. KERNS: I have no hands.

CHAIR GARY: That approval of those proceedings; it's also approved through consent.

PUBLIC COMMENT

CHAIR GARY: Next up, Number 3 on our agenda is Public Comment. This is for issues that are not on our agenda today. I would ask those individuals that would like to make comment for these items that aren't part of our agenda, if they could raise their hand now, and Toni, if you could just let me know how many we have, so we can budget time appropriately.

MS. KERNS: I'm just giving it a second to let hands get up. Phil, I see that your hand is up, but you are not connected to the audio, so I can't unmute you. Hopefully you got the message about who you can

call to help get you connected. I don't know what else to do there, Marty. Not the only hand we have.

CHAIR GARY: Okay, well I'm hoping that if there are other items that Phil would like to comment on. It is my intention, if there are any modifications to the items that are being presented today that we'll be getting to fairly shortly. Whether it's an addition, a deletion or a modification, probably an opportunity, so that maybe there is a way Mr. Zalesak can still provide his thoughts.

All right, so the only other item I want to discuss, before we go into the next item, which is Consider Draft Amendment 7 for Public Comment, is my status as Chair. I think most of you know that PRFC does not have a delegation. I'm the sole representative for the Agency. As such, I'm going to be voting today.

I did discuss this with Bob and Toni, and so that is discretion that I have and I can exercise. It is my intention. I just want to go on the record as saying, I will be voting for PRFC today. With that, we'll go to Item Number 4, Consideration of Draft Amendment y for Public Comment. I'll turn it over to Emilie.

But I'll just let everybody know, our primary objective today is to take the document, and for those items that Emilie is going to be presenting, our mission here today, our objective is to, we can either leave items in the document, we can remove them, we can modify them, or we could add something. It would be my intention to, time permitting, provide the public comment, if any modification, addition or deletion were to occur. Emilie, I'll turn it over to you and we'll start this Item Number 4, Consider Draft Amendment 7 for Public Comment.

CONSIDER DRAFT AMENDMENT 7 FOR PUBLIC COMMENT

MS. EMILIE FRANKE: I'll go ahead and get this presentation started. Again, thanks so much, Mr. Chair. As you mentioned, I will be presenting an overview of striped bass Draft Amendment 7 today for the Board's consideration. Here is just an outline of the presentation today. I'll start with a brief background on the Amendment and the timeline, and then I'll transition to reviewing the proposed options, with a focus today on the new options that have been added or modified since the October board meeting.

Those new options are in the management trigger section, the measures to protect strong year classes section, and the rebuilding plan section. Then throughout the presentation today I'll note comments from the Advisory Panel on those new options, and then I'll conclude today with reviewing the remaining options in the recreational release mortality and the conservation equivalency sections.

Then as part of that recreational release mortality review, I'll also review some discussion from the Law Enforcement Committee from their winter webinar. Then finally, similar to the previous board meeting in October, I'll pause for Board questions and discussions after one or two sections, and as Marty mentioned, the Board action for consideration today is to consider approval of Draft Amendment 7 for public comment.

First, I would like to thank the Plan Development Team for their time developing this draft document, and working through all these options. We've had several more meetings since the October board meeting, so again I want to thank them for their time. I also want to thank the Technical Committee for providing the projections for the year class section that I'll review during this presentation.

Starting with a brief recap of the background on Amendment 7. Since Amendment 6 was adopted in 2003, the status of the striped bass stock and fishery has changed considerably. The results of the 2018 benchmark stock assessment in particular, led the Board to discuss a number of issues facing striped bass management.

That assessment indicated that the stock has been overfished since 2013, and is experiencing overfishing. In August of 2020, the Board initiated

the development of Amendment 7, to update the management program to better align with current fishery priorities, and to build on the Addendum VI action to initiate stock rebuilding.

In May of last year, following the public comment period on the public information document, or PID. The Board approved four issues for development in the draft amendment, and those issues are Management Triggers, Measures to Protect the 2015 Year Class, which was initially focused on the ocean recreational fishery, Recreational Release Mortality and Conservation Equivalency.

At the October, 2021 Board meeting, the Board did discuss Draft Amendment 7 and the proposed options that were presented, and the Board decided to remove some of the draft options, due to concerns about viability for implementation. Those removed options are no longer in the Draft Amendment that was provided to you for review today. Also at the October meeting, the Board tasked the Plan Development Team with developing additional options to add to the draft, for the Board to review today at the winter meeting. Those additional options that have been added were an additional option for the fishing mortality threshold trigger, options to consider low recruitment in the rebuilding calculations and rebuilding plan, and then options for Chesapeake Bay recreational measures, to protect strong year classes. Since the October board meeting, as I mentioned, the Plan Development Team has met via webinar several times to develop these new options.

In addition to the new options, the PDT Has also modified some of the other options in the Draft Amendment, and those modifications were explained in the memo from the PDT that was included in the meeting materials. Then finally, the PDT also updated the Amendment with clarifying edits as needed throughout the draft.

Here is the current timeline for Amendment 7. As I mentioned, following the PID process, which wrapped up in May, the PDT has been developing the Draft Amendment, based on direction from the Board, including the changes made by the Board at the October, 2021 meeting. Currently, we are here in January, 2022 for the Board to consider approving the Draft Amendment for public comment.

If the draft is approved for public comment today, the public comment period would take place from February through April, and the final Amendment could be approved potentially in May of this year. As a reminder, the next stock assessment update is expected later this year in October. Just a couple of reminders on implementation timeline for Amendment 7.

The implementation timeline will be determined by the Board during final approval of the Draft Amendment. This includes setting a deadline for states to submit implementation plans, and a deadline for implementation, and those will be specified in Section 5.2, which is the compliance schedule.

Draft Amendment 7, as we all know, includes options for several different provisions, which could have different implementation timelines. For example, any new management measures that would require states to change their regulations, so for example, measures to address recreational release mortality would likely be implemented in 2023, to allow time to make those regulatory changes.

On the other hand, management triggers are typically implemented immediately upon approval of the Amendment. Those new triggers would be evaluated during the 2022 assessment update later this year. The Board could specify a different implementation timeline if needed for the management triggers, for example, if any state's regulations were tied to those triggers.

Listed here on the side are an outline of the components of the draft amendment document, Section 1 includes Statement of the Problem, Benefits of Implementation, Habitat Considerations. Section 2 includes the History of Management, Goals and Objectives, Description of the

Management Unit, Reference Points, and Stock Rebuilding Program.

Section 3 of the Amendment specifies monitoring program information, including catch and landings data, biological data, and also an overview of the stock assessment process. Section 4 is the Management Program and Proposed Options section, which includes all the proposed options that I'll be reviewing today. Those are options for Management Triggers, Recreational Measures, the Rebuilding Plan, and Conservation Equivalency. Section 4 does also include the Adaptive Management section. Then continuing on, Section 5 is the Compliance Section, and that includes all the mandatory Compliance Elements, and outlines the Compliance Reports and those procedures.

Section 6 describes Management and Research Needs, and Section 7 reviews Potential Interactions with Protected Species. For the rest of my presentation today, I'll transition to reviewing the proposed options in the Draft Amendment. Again, starting with those new options that have been added since the October board meeting.

I'll start with Management Triggers, followed by Measures to Protect Strong Year Classes, and the Rebuilding Plan section. Then as I mentioned, I'll wrap up with the Recreational Release Mortality and Conservation Equivalency section. I'll pause after one or two sections for questions or discussion from the Board, and then as Mr. Chair mentioned earlier, just as a reminder, today the Board could modify the proposed options if desired, and the Board could consider approving this Draft Amendment for public comment.

Throughout my presentation, I had mentioned I'll be including the Advisory Panel comments. The Advisory Panel met in January, to provide feedback on the scope of the new proposed options that were added since October. I'll include those comments throughout my slides today. The full AP summary was included in the supplemental materials for the meeting.

In addition, the Law Enforcement Committee met via webinar in December, and briefly discussed the proposed options to address recreational release mortality, and their input will also be included in my presentation today. Moving into the proposed options, the first section for review is Section 4.1, which is the management triggers.

The statement of the problem for this issue outlines some of the concerns with how the current management triggers are designed. Those concerns include that when spawning stock biomass is below the target, the variable nature of fishing mortality from year to year can result in a continued need for management action.

In addition, the shorter timetables for corrective action, as required through the triggers, are in conflict with the Board's desire for management stability. The Board has also been criticized for considering changes to management, before the stock has had a chance to respond to previous management changes.

The use of point estimates for management triggers does not account for an inherent level of uncertainty, and that was identified as a potential concern. Then finally, the long periods of below average recruitment in recent years have raised questions about the recruitment trigger. The PDT divided the trigger options into four tiers.

The first tier outlines the fishing mortality trigger options. The second tier outlines the female spawning stock biomass trigger options, the third tier outlines the recruitment trigger options, and the fourth-tier outlines options for deferred management action. Within each tier is a set of primary options and sub-options to consider, and this framework is designed to allow the Board and the public to consider each of the triggers individually. One note from staff is that language will be added to the Draft Amendment noting that during stock assessment years the recruitment trigger should be evaluated concurrently, when possible, with the fishing mortality and spawning stock biomass triggers, at the time the assessment results are presented.

For example, stock assessment updates are typically presented to the Board at the annual meeting in October. During those assessment years the Board would evaluate the recruitment trigger at the October meeting as well. This would ensure that the Board has the best available information on the stock, when evaluating all the triggers.

Staff does recognize that evaluating the recruitment trigger at the same time as the fishing mortality and spawning stock biomass triggers, may not always be possible during benchmark assessment years. The timing of benchmark assessments can be variable, but when it is possible, all the triggers should be evaluated at the same time during stock assessment years.

Moving into Tier 1, which are the fishing mortality triggers. The first set of options is Option A, the timeline to reduce fishing mortality to the target. When one of the fishing mortality triggers is tripped, Sub-Option A1 would require reducing F to the target within one year. That is the status quo. Sub-Option A2 would require reducing F to the target within two years.

Option B is the fishing mortality threshold trigger. If this trigger is tripped, the Board must reduce F to the target per the timeline selected in the options that I just described in Option A. B1 is the status quo option, where the trigger is tripped if F exceeds the threshold for one year. Sub-Option B2 is a new option that was added by the Board based on the October board meeting that would trip if the two-year average of F exceeds the F threshold.

Then Sub-Option B3, the trigger would be tripped if the three-year average of F exceeds the threshold. As I mentioned, at the October meeting the Board discussed the concern about averaging F rates from different management actions. The PDT clarified in the Draft Amendment that for these multiyear average trigger options, Sub-Options B2 and B3, the average should not include data under different management actions.

The trigger would not be evaluated, unless there are enough years of data to average under the most recent management action. For example, the stock assessment this year will include two years of data under Addendum VI. Those two years of fishing mortality could be averaged under Sub-Option B2.

However, if Sub-Option B3 was selected, that trigger could not be evaluated, because there wouldn't be three years of data available to evaluate. From the Advisory Panel perspective, some AP members did support considering these multiyear average options during the public comment period, to address some concerns about uncertainty around MRIP and variability of F.

Another AP member noted concern about the multiyear average options, and concern about having to wait two or three years for enough data, before taking action to reduce F. Moving on to Option C. This is the fishing mortality target trigger. If this trigger is tripped, the Board must reduce F to the target, again per the timeline selected in Option A. C1 is the status quo option, where the trigger trips if F exceeds the target for two years, and if spawning stock biomass is below the target in either year. C2 would trip if F exceeds the target for three consecutive years, and C3 would eliminate the trigger related to F target.

Moving on to Tier 2, which are the female spawning stock biomass triggers. Again, there are three sets of options for the Board to consider. Option A considers the deadline to implement a rebuilding plan when a spawning stock biomass trigger is tripped, which requires rebuilding within ten years.

The status quo option, A1 is no deadline for when a rebuilding plan must be implemented. A2 would require the Board to implement a rebuilding plan within two years from when that trigger is tripped. Continuing on to Option B, which is the spawning stock biomass threshold trigger. B1 is the status quo option, where the trigger is tripped if SSB is less than the threshold for one year.

Sub-Option B2 would eliminate that trigger related to the spawning stock biomass threshold. Option C is the spawning stock biomass target trigger. C1 is the status quo option, where the trigger trips if SSB

is less than the target for two consecutive years, and if F is above the target in either year.

C2 would trip if SSB is below the target for three consecutive years, and then C3 would eliminate a trigger related to the SSB target. Again, it's important to note that there must be at least one SSB trigger, so the Board could not eliminate both the SSB target and the SSB threshold triggers.

Moving on to Tier 3, which is the recruitment trigger. The first component to consider for the recruitment trigger is the definition of the trigger itself. The status-quo trigger A1 was designed to identify true recruitment failure, and this trigger would trip if any of the six juvenile abundance indices are below the 25th percentile of their established reference period for three consecutive years.

As requested by the Board, the recruitment trigger alternatives, developed by the Technical Committee, Options A2 and A3 here, would be more sensitive than the status quo trigger. These Sub-Options A2 and A3 would change the trigger reference period to 1992 to 2006. This was identified as a period of high recruitment, and this results in more sensitive trigger options.

Sub-Option A2 would have a moderate sensitivity, and that would trip if any of the four core juvenile abundance indices, and so those are the four juvenile abundance indices that are used in the stock assessment, are below the 25th percentile, from 1992 to 2006 for three consecutive years. Sub-Option A3 would have a higher sensitivity, and would trip if any of the four core juvenile abundance indices is below the median from 1992-2006 for three consecutive years.

Again, there is that hierarchy of the status quo moving to the moderate sensitivity and then the higher sensitivity options. The second component of the recruitment trigger is the management response. The status quo option B1 requires the Board to review the cause of recruitment failure, and determine the appropriate action if the trigger is tripped. For the alternatives here, the PDT removed a previous alternative that would have initiated stock rebuilding. After further discussion after the October board meeting, the PDT noted that stock rebuilding is a more appropriate response to the SSB triggers, and not to the recruitment trigger.

In addition to that modification, the PDT did modify Sub-Options B2 and B3, which are both intended to reduce fishing pressure as those weak year classes enter the population. Both Sub-Options B2 and B3 are based on calculating interim F reference points, using a low recruitment assumption. However, these sub-options are slightly different in determining when action would be required to reduce F.

The PDT noted in the memo for today that the PDT recommends the Board consider whether one of the approaches that I'll present on the next slide, B2 or B3, if one of those best aligns with what the Board was intending for this recruitment trigger response. Starting with B2 on the left here, B2 would implement an interim F target, calculated using the low recruitment assumption, if the recruitment trigger is tripped.

Then F in the terminal year would be compared to that lower F target, and if F in the terminal year is less than that interim F target, the Board would need to reduce F within one year. On the right side, Sub-Option B3 would similarly use a low recruitment assumption to calculate an interim F target, and would also calculate an interim F threshold.

Then here is where these two options diverge. B3 would use those lower interim F reference points to reevaluate the fishing mortality triggers, using those lower F reference points. This option would go back to the definitions of the triggers that the Board selected under Tier 1, and plug in those new lower F target and F threshold.

If one of those F based triggers tripped during this reevaluation, then the Board would be required to reduce F. The difference here is a little bit subtle, but B2, which evaluates one point estimate of F

against the target, is more conservative than B3, which uses the already defined triggers from Tier 1.

Again, if the Board has any discussion on which of these approaches best aligns with the Board's intent here, it might be helpful to consider. Then to wrap up this section, the final tier, Tier 4 is the deferred management action section. Option A is the status quo option, which is no deferred management action.

That is, if a management trigger is tripped at any time, the Board must take the required action. The alternatives presented here would provide the Board with the flexibility to defer action until the next stock assessment, if certain criteria are met. These options again were developed in response to the concern about the frequent need to make management changes.

Option B would allow action to be deferred until the next assessment, if it's been less than three years since the last action was taken responding to a management trigger. Option C would defer action until the next assessment, if the F target trigger is tripped and SSB is above the target. Option D would defer action until the next assessment, if the F target trigger is tripped, and SSB is projected to increase or remain stable over the next five years. Option E would defer action if the F target trigger is tripped and there is at least a 75 percent probability that SSB will be above the threshold for the next five years. That is looking at the probability of SSB being above the threshold in that fifth year.

Previously this Option E required at least a 50 percent probability, but the PDT modified this option to require at least a 75 percent probability, in order to increase the level of confidence when the Board is considering differing action. Then finally, Option F would defer action until the next assessment, if a management trigger trips after the Board has already initiated action in response to a different trigger. Mr. Chair, that's all I Have for management triggers, and I'm happy to take any questions, or provide any more detail, if needed.

CHAIR GARY: Thank you, Emilie, and as we decided up front, we're going to go through these sequentially, so thanks for the presentation on the management triggers. We're now going to take questions from the Board for Emilie, regarding any clarification you need. Then we're going to move into a discussion, and consider any potential modification, removal or additions. Questions for Emilie, and I'll rely on Toni if you could. I'm not a presenter, so if you could go ahead and maintain the queue for questions, please.

MS. KERNS: Will do, Marty, thank you, Mr. Chair. John McMurray is the only person with a hand up for now.

CHAIR GARY: All right, John.

MR. JOHN G. McMURRAY: I have a question regarding the F threshold trigger Sub-Option B3, which is the three-year average option. Particularly the sub text below B3, which says, the three-year average F should not include data under different management actions, i.e., the F threshold trigger should not be evaluated unless there are at least three years of data in the assessment under the most recent management action.

Based on the frequency of assessments, which is generally every two years, and it's rarely more than that, and subsequent management actions that take place. This would appear to me to effectively limit the years of data available, and there would almost never be a time when there are at least three years of data in the assessment under the most recent management action. Am I interpreting that option right, because it seems really unlikely that a threshold would ever be tripped under that option?

MS. FRANKE: You are interpreting that correctly, in that the trigger couldn't be evaluated under Option B3, unless there were three years of data available under the most recent management action. The PDT wanted to provide the Board with this range of average options.

Again, considering an average threshold trigger here would be a way for the Board to address concerns about variability. One of the things that as also noted in the Amendment, which I did not note on the slide, is that the Board isn't constrained by taking action only if the trigger trips. The Board could take action at any time. But you are interpreting that correctly.

MR. McMURRAY: Follow up, Mr. Chair.

CHAIR GARY: Yes, go ahead, John, all yours.

MR. McMURRAY: Theoretically overfishing could continue, but because of the frequency of assessments, no management action would be required, correct?

MS. FRANKE: Correct, if there are less than three years of data available, then the trigger couldn't be evaluated.

MR. McMURRAY: Okay, one more quick one, and then I'll cut it off if I can, Mr. Chairman. I haven't been around as long as a lot of you guys here, but has there ever been a time since Amendment 6 was implemented that the Board did act without a management trigger being tripped?

MS. FRANKE: Good question, I'm going to defer maybe to Toni, or to potentially other Board members on this one.

MS. KERNS: I'm going to defer that to Bob, since he's been around since the approval of Amendment 6.

EXECUTIVE DIRECTOR ROBERT E. BEAL: I guess the buck stopped here, Marty, if I can chime in.

CHAIR GARY: Absolutely, Bob, please do.

EXECUTIVE DIRECTOR BEAL: John, I'm not sure. I would have to go back and look. I know that the Board has reacted a number of times to stock assessment information. But I don't know if each time, you know a management trigger was tripped when the Board reacted, or if just the stock condition changed, but did not trip one of the triggers. I would have to go back and look, I just don't recall, sorry.

CHAIR GARY: John, did that answer your, well it didn't answer your question, I guess. But it sounds like we would have to get back to you on it. Does that satisfy the range of questions you had for Emilie and staff?

MR. McMURRAY: It does.

CHAIR GARY: Okay, thank you. Toni, has anybody else raised their hand?

MS. KERNS: Yes, we have Mike Luisi, followed by Justin Davis.

CHAIR GARY: All right, Mike, you're up.

MR. MICHAEL LUISI: Emilie, I just had a quick question for you, related to a comparison of, let me see which tiers here. It's comparison of the Tier 1 options, with the Tier 4 options under deferred management. Under Tier 1 there is an Option C for F target triggers. I'm not suggesting in any way that this would be the case. But if an F target trigger, if it was determined by the Board that there was going to be more of a focus on threshold and less on an F target trigger under the Tier 1 alternatives.

Does it eliminate Options C, D, and E in the deferred management action, since they are all related to the F target trigger, or is there an opportunity then for that to default to what's selected from Tier 1, of which trigger we would be using for fishing mortality. Does that make sense? Yes, I hope that makes sense, I know I was jumping back and forth. I just want to be sure what I need to explain this to folks. If F target goes away, do we lose the options to defer management?

MS. FRANKE: Yes, I understand your question, and that's a great question. The PDT did not talk about this scenario specifically, so that we also did not talk about if it did, if the F target trigger was eliminated if C, D, and E would change. I'm going to say that if

the F target trigger is eliminated, C, D, And E would no longer be available as options.

MR. LUISI: Thanks, Emilie, thanks Mr. Chairman, that's all I had.

CHAIR GARY: Toni, did you say Justin was next in queue?

MS. KERNS: Correct.

CHAIR GARY: Dr. Davis, it's all yours.

DR. JUSTIN DAVIS: I would like to return to the Sub-Option B3 under the F management trigger response, and I appreciate John bringing that up, because I have the same concerns about whether this trigger would essentially be too conservative, and wouldn't be tripped very often. I guess the idea that we would never have three years of data under consistent management, sort of presumes that we would make a management change every time we get an assessment.

But if I'm interpreting this correct. If the Board received an assessment, and decided not to take management action, either because the assessment results were very positive or a management trigger wasn't tripped. That would set the stage for, at the next assessment, us being able to have at least three years of data under consistent management, and therefore being able to evaluate this F trigger B3. I'm wondering if I'm interpreting that correct.

Then the second question I have was if the Board has the flexibility to request a stock assessment update, sort of sooner than perhaps planned, outside of the normal kind of stock assessment rotation we typically do for this species. If there was an instance where we received a stock assessment, there were a couple troubling years of F, but we didn't have the three years under consistent management required. The Board would have the latitude to request an update sooner than planned, to allow sooner evaluation of that F trigger. Is that correct?

MS. FRANKE: Correct, so you are interpreting that correctly, in that if an addendum were in place for a couple years, and then another assessment comes along, and the Board decides not to change management, but rather to maintain management under that addendum. Then at the next stock assessment, as you noted, there would be more than three years available for the Board to consider with this potential B3 trigger. As you mentioned, yes, the Board can request a stock assessment at any time.

DR. DAVIS: Mr. Chair, could I ask a quick follow up?

CHAIR GARY: Sure, Justin.

DR. DAVIS: The guidance about if Sub-Option B3 were selected, that that management trigger should only be evaluated if there are three years of data under consistent management. That's a PDT recommendation? I mean would it be possible, when the Board take final action on this, if the Board so chose, we could adopt Option B3, but remove that sort of limiter that it has to be three years of data under the most recent action?

Just my thought there is, I get the rationale for three years under consistent management, but on some level, F is F. If we took a look after the assessment and had three years of F exceeding the threshold, even if that first year was under different management. Perhaps it still would be appropriate to take action. I mean could we potentially not put that guardrail in when the Board takes final action, if we selected this sub-option?

MS. FRANKE: Yes, the Board could make that change to remove that guardrail, and that would mean that F is averaged for three years, regardless of whether those three years were under the same management action. From the PDTs perspective, you know the PDTs intent was not to average F under different management actions, but the Board could make a decision to change that.

CHAIR GARY: Does that answer your question, Justin?

DR. DAVIS: Yes, thank you, Emilie.

CHAIR GARY: Toni, any other hands raised for questions?

MS. KERNS: Those are all the hands for now, Marty.

CHAIR GARY: It sounds like we've gone through the question-and-answer component for this section. Is there a discussion about any modification? It sounds like there is an interest. Complexity level here is pretty high. There are some concerns, we're all sensing. Does anyone want to go ahead and initiate a discussion? Go ahead and raise your hands, Toni will queue it again, to see if we want to take any action to modify, remove any of these items.

MS. KERNS: I have Megan Ware, followed by John McMurray.

CHAIR GARY: All right, Megan.

MS. MEGAN WARE: Well, I think along those lines of other people's concern about Sub-Option B3 in Tier 1. I would be open to a discussion about removing that option, and I sent staff a motion, in case you would like to offer it via motion today.

CHAIR GARY: Let me come back to you, but I'll reserve you first right to go ahead and make that motion. Did you have a follow to that or anything you wanted to add?

MS. WARE: Well, I think a lot of what has been said I would agree with, and just the practicality of that option I think is pretty limited. Looking forward, I'm not sure I see a time in the next decade where we might meet that three-year mark. Obviously, if we're going to be taking action in 2022 on an Amendment, we would postpone the discussion on commercial allocation. We may need to take action to meet rebuilding. I'm just not seeing a lot of value in that trigger in the next decade.

CHAIR GARY: Thank you, and we'll go to John McMurray.

MR. McMURRAY: I think Megan was going to make the same motion that I was, so I will let her do that.

CHAIR GARY: Toni, do we have any other hands raised for discussion on this?

MS. KERNS: We have Tom Fote.

MR. THOMAS P. FOTE: I didn't want to chime in before, but I remember when we basically made changes in regulations not based on triggers, but other things, and that's going back a long time that we've done that. We've gone through the document a lot. I'm ready to go out to public hearings, and I really don't have strong feelings any one of them. I don't feel that strongly about B3 to take it out.

I just want to have it go out to public hearing and find out what the public feels on a lot of these issues. We've been looking at them for two years now. I think it's time just to send it out to the public and let them look at it, and make a decision without us starting to remove a bunch of things, because we could be here all night. If you picayune again, like we've been doing for the last three sessions. I would like to get this out for public hearings.

CHAIR GARY: Any others, Toni?

MS. KERNS: No other hands, Marty.

CHAIR GARY: All right, Megan, I'll bring it back to you then. Do you want to go help them see out the motion, and staff could go ahead and capture that? Then we'll need a second.

MS. WARE: Reading it into the record. Move to remove in Section 4.1: Management Triggers, Sub-Option B3 in Tier 1: Fishing Mortality Management Triggers (three-year average F exceeds the F threshold) from Draft Amendment 7.

CHAIR GARY: Thank you, Megan, do we have a second? I think we might.

MS. KERNS: John McMurray.

CHAIR GARY: Thank you, John. All right, so we have a motion and we had a second, and Megan, I'll come back. Is there anything more you want to add to your rationale for the motion? Then I'll come to John, then we'll open it up for discussion to the Board.

MS. WARE: I think my rationale has been provided, so I'm all set, thank you.

CHAIR GARY: John, did you want to add anything, or we can go to discussion.

MR. McMURRAY: No, thank you, I think I made my concerns pretty clear.

CHAIR GARY: All right, thank you both. We'll open this up, we have a motion on the floor, and we'll go to discussion, and as I said previously, we will go to the public before we bring this back to the Board for a vote. The floor is open, raise any hands for comments, discussion on the motion.

MS. KERNS: I just have one hand, Chris Batsavage, oh two hands, Chris and Justin Davis.

CHAIR GARY: All right, Chris, you have the floor.

MR. CHRIS BATSAVAGE: I support the motion for the reasons given and the concerns given. I think you know again; it's not going to be likely to hit this threshold, with the timing of things. On its face it's already a little on the risky side, waiting for three years average F exceeding the threshold.

In terms of going out to the public. Due to the unlikeliness of hitting this, I think it would probably be better to take it out of the Amendment now, so the public can focus on the many other options that we will need feedback on, as opposed to this one. That seems a little problematic.

CHAIR GARY: Over to you, Justin.

DR. DAVIS: I'm a bit torn on this. I can appreciate the rationale provided by Megan and John, and I appreciate Chris's comments. The thing about Sub-Option B3 that appeals to me, is allowing us to use three years of data, a three-year average of F, which I think provides us the best ability to sort of eliminate the undue influence of one potentially sort of outlier year allows us to incorporate the most amount of information, and smooth out the estimate of F as much as possible.

Then again, I do have these concerns that this trigger may ultimately be too conservative as constructed, and not be tripped often enough. I think as I mentioned in my earlier comments, there may be ways for the Board to either amend this sub-option, were we to decide this was the one we want to ultimately adopt and/or potentially adjust future stock assessment schedules to potentially ameliorate that issue of the trigger not being tripped often enough. I guess I'm looking at this through the lens of, does this need to come out now, before it goes it goes to public comment. We're not taking final action right now, and I think right now I'm leaning towards leaving it in. Although I do agree that as constructed it could be problematic, and might need further consideration, if this is the sub-option we ultimately decided to adopt at final action.

CHAIR GARY: Toni, any other Board members wish to comment on this? You have three hands, Justin Davis, Max Appelman, and Mike Luisi.

CHAIR GARY: I think Justin just spoke, so Max, you're up.

MR. MAX APPELMAN: Yes, I think I'm with Justin on this right now. Given where we are in the process, we're talking about a scoping document. I think I would rather keep this in, because I see a tradeoff between Options B2 and B3 right now. On the one hand, the more years of data you used in this trigger definition, the better handle we're getting on where true F is under that management action, right? Speaking to the point of smoothing out that variability in F from year to year.

But on the other hand, the more years you're required to use, the more years, I guess you have to wait, until you can evaluate that trigger. I just think that if the intent here is about addressing that

variability in F, then having two options for the public to weigh in on, is going to help us evaluate what's more important, how many years we need to wait between evaluating this trigger, or how many years of data we're using to try to find that true F value. I think I'm in favor of keeping this in the document for public comment.

CHAIR GARY: Over to Mike Luisi.

MR. LUISI: I have a question related to what Max just ended up with in his statement, which was looking at this option as some way a delay in taking action. I do agree with Justin and Max that if we can use three years of F, and obtain the average from a longer time series. In my mind that's better than two years.

But maybe my question is more for Emilie. It's going to take a little while, obviously, until we have three years of information after this Amendment is finalized, to use in this evaluation. Is there a way that we can, I'm struggling with the question? Is there a delay? I'm trying to figure out where the delay is if this option stays in, and we use it in the Amendment for final action.

Because we already have fishing mortality, and we're going to get a new estimate of fishing mortality. All we're doing then is suggesting that we go back and use three years of fishing mortality, in order to determine whether or not a trigger is tripped. Where is the delay? If you can help me understand that. I think the public is not going to be happy with a delay, and I certainly understand that. But I'm trying to figure out where the delay that everyone is speaking of comes into play here.

CHAIR GARY: Emilie, are you or other staff able to address Mike's question?

MS. FRANKE: Absolutely. The delay would come in, because with requiring three years in order to evaluate the trigger. Then overfishing could be occurring for two years, but the Board would be delayed in taking action, potentially to address that overfishing, because that action wouldn't be required until you have that third year of data. That is the concept of the delay, in that F could be over the threshold for one or two years, but the Board wouldn't be required to take action until there are three years of data available, so that is sort of where the delay concept comes in, in terms of being delayed in addressing overfishing.

MR. LUISI: Okay, Mr. Chairman, if I could just follow up. If I understand that correctly, it's three new years of information that would be required, in order to trip this trigger, rather than the time series that has already been established, and just using three years, or the most recent three year's average.

I can understand it if it's three new years of fishing mortality, and if that's the case then I can't go forward with this motion, but I can support the motion to get rid of it, because I think three years is too long to wait. I just thought there was another way around it that we could still use three years in the average, but not have to wait three years to get the data to do that averaging. That's all, thank you.

CHAIR GARY: Toni, anyone else with any more discussion?

MS. KERNS: Two more hands, Ritchie White followed by Tom Fote.

CHAIR GARY: All right, Ritchie, you have the floor.

MR. G. RITCHIE WHITE: Yes, I support the motion. I think Mike Luisi just made the strong argument to do away with this. This is exactly what the public doesn't want to see us do. The public wants to see us act faster, not slower, so strongly support it, thank you.

CHAIR GARY: Tom Fote.

MR. FOTE: The more I think about this the more I realize how many times we've actually acted, and then basically two years changed our mind, because of retrospective analysis. I think this doesn't stop us that we start seeing things in two years that started it in motion, but the third year that we basically seeing it then we confirm.

It doesn't stop you from doing it. It doesn't have to be new information. You have two years of information, because it's happening, you're asking for one more year to make sure, because we've changed. I know New Jersey had to change regulations three times, because they said we had to do this, because this is what it showed. Then it came back two years later, no, you have to go back to the other regulations, because we weren't overfishing.

I'm always concerned when we do knee jerk reactions going one way or the other, whether it's conservative or liberalized. We should have the same rules for both of them. But it doesn't stop us from acting if we see this one-year pattern, then two years pattern, we can start whatever we need to do, and if the third year confirms it, then we basically act. That's the way I'm reading it, maybe I'm wrong. If I'm wrong, please answer my question.

CHAIR GARY: I do want to give the public a chance to comment if they would like to. Are there any other Board members that would like to offer comments?

MS. KERNS: Mike Armstrong.

CHAIR GARY: All right, Mike, you have the last word, and then we're going to go to the public.

DR. MICHAEL ARMSTRONG: I guess I'm a little confused. I don't think these have to be new data we're using, right? Say two years from now we do an assessment, and it shows four years back we had been exceeding it. Because these Fs change a little bit. There is a retrospective pattern, it's not bad in the assessment, but they do change.

It's conceivable we can turn the crank on an assessment in two years, and have data going back more than two years that we can use. If I'm reading that right, it doesn't have to be new data, Emilie, correct? I mean if the assessment says we've been overfishing for three years, then we can use this trigger, is that correct? Am I thinking about that right?

MS. FRANKE: It doesn't have to be new data; in that it doesn't have to be new to this assessment. The requirement is that those three years need to be under the same management action. For example, under this B3 Option, you couldn't average one year of Addendum IV F with two years of Addendum VI F to get those three years. You would need to have three years of F under Addendum VI to average.

DR. ARMSTRONG: If I could comment again, Mr. Chair.

CHAIR GARY: Absolutely, go ahead, Mike.

DR. ARMSTRONG: Yes, I'm uncertain what to do with this, as some of the others are. I'm tending to keep it in for public comment, and think about it some more. I'll probably vote against this.

CHAIR GARY: All right, thank you, Mike. I would like to now go to the public, before we come back to the Board for a vote. I'll ask at this time if any members of the public would like to offer comment on this motion, and Toni, I'll look to you for any hands.

MS. KERNS: We have Charlie Witek.

CHAIR GARY: All right, Mr. Witek.

MR. CHARLES WITEK: Write a letter to the Board on this issue, and the reason that it concerned me, is that we assume that in the terminal year of the assessment, for the first time we find that F has exceeded the threshold. Now we have to wait for two years, and this is where the new data issue comes in. Yes, it's possible there will be a couple years of old data in the assessment. But let's assume it's in the terminal year of the assessment that overfishing first occurs, that we have to wait for two more years before action is taken, and one of the points nobody ever wants to talk about is, yes there is uncertainty in the assessment. But uncertainty cuts both ways.

Nobody seems to be concerned that perhaps overfishing has been occurring for a few years, but

because of uncertainty in the assessment, it looks like we're sitting just below the threshold. It is very possible overfishing could have been going on longer. That is why avoiding the point estimate is probably a bad idea. We're talking about threshold here, not target. I would argue that when fishing mortality is so high that we're talking about taking action based only on the uncertainty, that it's already high enough that action is warranted. Thank you.

CHAIR GARY: Thank you, Mr. Witek. Toni, are there any other members of the public who would like to offer comment?

MS. KERNS: We have two additional members, the first is Bob Danielson, and then he'll be followed by Julien Frank.

CHAIR GARY: All right, Mr. Danielson.

MR. BOB DANIELSON: Thank you, Mr. Chairman, I appreciate the opportunity to speak. I am in full support of this motion. I believe waiting for three years under any particular amendment for data is too long, and it has the ability to negatively affect the stock by overfishing. Until we get that third year of data in, it may be putting us behind the proverbial eight-ball. Again, I support this motion to remove Option B3. I think it's dangerous. Thank you, Sir.

CHAIR GARY: Thank you, I'll go to Mr. Frank.

MR. JULIEN FRANK: It seems like under consistent management seems to be the key word here, term. I'm just looking for a definition of exactly what that means. Then overall, just listening to the Board discuss this. It seems like people are having a hard time defining the three years in the three-year period.

Just a confusion around this discussion alone doesn't leave much confidence to this being implemented. Yes, I think you're right. Speaking as a member of the public, nothing about this is attractive. I would recommend its removal. But lastly, if I can get a definition of under consistent management that would be helpful.

CHAIR GARY: Emilie, can you provide that definition?

MS. FRANKE: With these multiyear average trigger options, under consistent management or under the same management for either two or in this case three years, means that the fishery is operating under management requirements under the same management document. For example, under the same addendum or the same amendment. Again, for example, in order to average three years, all those three years in question would need to be operating under the requirements of the same addendum.

MR. FRANK: Got it, thank you.

CHAIR GARY: Toni, any other members of the public?

MS. KERNS: I have one for sure, and I'm working in the chat to see if I have a second. Taylor Vavra.

CHAIR GARY: All right, Taylor, the floor is yours.

MR. TAYLOR VAVRA: Yes, I would just like to say that I am in agreement with Mr. Witek's comments, and that I think one thing that the Board should keep in mind is that the stock was set to be overfished in 2018, and it is now 2022, and so we're behind the eight-ball already. I think when we have data that points towards overfishing occurring.

It's really important that the Board does everything in its power to show the public that they're going to take action to recover the stock as quickly as possible. To have to wait for three years of data to point in that direction, I think is just repeating sort of where we're at now, which is like I said behind the eight ball in this whole thing. I'm in agreement and support that this be removed. Thank you.

CHAIR GARY: Thank you, Taylor, Toni, did we resolve the other person's audio?

MS. KERNS: One last name, Greg Cudnik.

CHAIR GARY: All right, Greg, you have the floor, and then we're going to bring this back to the Board.

MR. GREG CUDNIK: Thank you, I'm in agreement with the other comments, and I support the motion to remove B3. I just feel like time is of the essence here. Thank you.

CHAIR GARY: Thank you, Greg, and Emilie, before I bring this back to the Board for a vote. Could you remind if there was a specific posture the AP had regarding this particular option? Did they have any feedback specific, just as a reminder to the Board?

MS. FRANKE: One AP member did note concern about both of the multiyear average options, B2 and B3, while a few other AP members noted support for considering these multiyear average options in general.

CHAIR GARY: Thank you, Emilie. All right, it's pretty clear we're not going to get a vote through consent, so we're going to have a vote. Does the Board need time to caucus? Anyone raise their hand and we'll provide some time if you need it.

MS. KERNS: I see hands raised for caucus, and I believe Max Appelman, he had his hand up before you asked about caucus, so I don't know if he has a question for clarification.

CHAIR GARY: That's fine, Max, go ahead. Did you have a question before we move to a caucus?

MR. APPELMAN: Yes, I mean I just wanted to highlight what, I think Justin brought it up initially in that, I'm hearing a lot of focus on the years of data. Basically, the PDT recommendation about the years of data, new data we would need to evaluate this, rather than focus on the intent of what this option does, which is to smooth out the variability of F from year to year.

I think what I heard from Justin is, come final action, we don't need to have that strict three new years of data under a management action in there. What I would like to hear from the public is if that variability in F is, if it swings so much from year to year under consistent regulations, does it make more sense to evaluate three data points against this threshold or two?

I would like to hear that, and that's why I'm going to again, sorry to have the last word here, but I think we should keep this in, get the public opinion, and come final action if that is a sticking point, we have the ability to remove that limitation of about new years of data.

CHAIR GARY: Given the level of complexity in what I'm hearing in the tenor of the discussion. We're going to go ahead and do a three-minute caucus. Toni, can you set the timer?

MS. KERNS: We will do.

CHAIR GARY: All right, we will go ahead and call the question then, Toni, are you ready for us to call it?

MS. KERNS: I am ready.

CHAIR GARY: All those in favor of this motion, should I read this into the record, Toni?

MS. KERNS: I don't think we've changed it, so I don't think you need to read it into the record.

CHAIR GARY: Okay, very good, thank you. All of those in favor of the motion, please raise your hand, Toni will get the count.

MS. KERNS: Just going to give the hands a moment to settle here. I have New Hampshire, Pennsylvania, Maine, Rhode Island, District of Colombia, Maryland, New York, Virginia, North Carolina, and Potomac River Fisheries Commission.

CHAIR GARY: Hands down, all those opposed to the motion, please raise your hand.

MS. KERNS: I have New Jersey, U.S. Fish and Wildlife Service, Connecticut, NOAA Fisheries, Massachusetts, and Delaware. Put the hands down.
CHAIR GARY: Are there any null votes?

MS. KERNS: I have no null votes.

CHAIR GARY: Are there any abstentions?

MS. KERNS: I have no abstentions.

MS. FRANKE: Mr. Chair, I have 10 in favor and 6 opposed.

CHAIR GARY: All right, thank you, Emilie, so the motion passes 10 to 6. Thank you very much. Emilie, just double checking where we are. Does that put us through that section or is there more to do there?

MS. FRANKE: Mr. Chair, I don't have any additional slides, but if there is any other discussion before I move on to the next section, just let me know.

CHAIR GARY: All right, so I'll put the question back to the Board. It looks like we're through management triggers, but if we're not and I'm in error, please raise your hand. One last chance before we move on to the next section. Anyone, Toni?

MS. KERNS: I have no hands, Mr. Chair.

CHAIR GARY: Emilie, I think it's safe to say we can move on to the next section.

MS. FRANKE: Moving on to the next section of Draft Amendment 7. This part of my presentation will cover Section 4.2.1, which are the recreational size and bag limit options to protect strong year classes, and I'll also review the new rebuilding section 4.4 before pausing for questions. Starting with the measures to protect strong year classes.

The Board and stakeholders have expressed that protecting strong year classes is important for stock rebuilding, and in particular there is some concern that the strong 2015-year class will soon be entering the recreational spot limit for the ocean region of 28 inches to less than 35 inches, and if this ocean slot is maintained, the 2015-year class may be subject to high recreational harvest mortality in the ocean, potentially reducing its potential to help rebuild the stock.

This 2015-year class is also subject to release mortality coastwide, and that year class has already been available to the Chesapeake Bay fisheries for the past few years. The Technical Committee also noted that both the 2017 and the 2018-year classes were above average in multiple juvenile abundance indices. These year classes have recently become available to the Chesapeake Bay fisheries.

The options in this section consider whether to change the ocean and/or the Chesapeake Bay recreational size and bag limits to enhance protection of these strong year classes. The intent here is to reduce harvest on the 2015, 2017, and/or 2018-year classes, by shifting that harvest to other year classes. It's important to note that while this would provide some protection from harvest in the short term, those year classes will still be subject to recreational release mortality. Then another point.

MS. KERNS: I'm sorry to interrupt you. Your presentation is on pause, so we're still seeing the management trigger. Perfect, thanks.

MS. FRANKE: Thank you so much, Toni. A final point to consider here throughout this section, and something that the Technical Committee and the Plan Development Team emphasize, is the uncertainty around how angler behavior and fishing effort would change in response to changes in size limits, and changes in fish availability.

The options proposed for the ocean recreational fishery are listed on the slide here. Option A is the status quo slot of 28 inches to less than 35 inches, with a one-fish bag limit. This status quo option would maintain the current state implementation plans and CE programs from Addendum VI. Option B is a 35-inch minimum size limit and a one-fish bag limit.

Option C is a 32-inch to less than 40-inch slot, with a one-fish bag limit, and Option D is a 28-inch to less than 32-inch slot, with a one-fish bag limit. Just important to note here that if the recreational size

limit does change from the status quo through Options B, C, or D, those new size limits would also apply to the Chesapeake Bay spring trophy fishery, which is considered part of the ocean fishery for management purposes.

This is something the Board discussed at the October, 2021 board meeting, because this fishery targets coastal migratory striped bass. Next are the options proposed for the Chesapeake Bay recreational fishery. Option A is the status quo of an 18-inch minimum size limit, with a one-fish bag limit, and again this status quo option would maintain current state implementation plans and CE programs from Addendum VI.

Option B is an 18 inch to less than 23-inch slot limit, and a two-fish bag limit, and then Option C is an 18 inch to less than 28-inch slot limit, with a one-fish bag limit. There are two sub-options for Option C. Option C1 would maintain all the components of Addendum VI, CE programs for the Chesapeake Bay, except the recreational size limits would be modified to include an upper bound of less than 28.

Sub-option C2 would require new CE proposals to be submitted, so the Board would have to select either Sub-Option C1 or C2. If alternative recreational measures are selected through any of those alternative size limits, the Board will need to address conservation equivalency considerations.

First here under Tier 1, this considers how or if conservation equivalency could be applied to these alternative size and bag limits to protect year classes. Under Option A, CE would be permitted, subject to any restrictions or requirements that are selected later on in the CE section of the Draft Amendment.

Just to note here, the PDT does not recommend this Option A, because allowing CE could compromise the goal of setting specific size limits to protect particular year classes. Under Option B, CE would be permitted with certain limitations on the range of CE measures that could be proposed, again subject to any restrictions selected in the CE section. Under Option C, CE would not be permitted. Another consideration for conservation equivalency here is under Tier 2, and that considers how changing the recreational size limits would impact current Addendum VI CE programs that combined recreational and commercial measures to achieve the Addendum VI reduction.

Specifically considering CE programs that implemented a less than 18 percent reduction in commercial quota, offset by a larger reduction in recreational removals. Under Option A here, the commercial quota levels implemented through those CE programs would carry forward, and under Option B, those commercial quota levels implemented through Addendum VI CE, would not carry forward, and those states would be subject to the FMP standard quotas.

In addition to the options themselves, the Draft Amendment outlines the analysis developed by the Technical Committee and the Plan Development Team, to evaluate the size limit options. The TC first estimated the length at age for striped bass, which then informed estimates of the level of protection that each size limit option would provide, referred to as the percent protected from harvest, or the percent that each year class that is outside the size limit.

The TC then developed projections to evaluate the potential impact on stock productivity, and impact to the rebuilding timeline for the alternative size limits, as compared to the status quo. This table on the screen shows the estimated average stripe bass length at age, based on age data compiled for the last stock assessment.

The average length at age for the 2015-, 2017-, and 2018-year classes in 2023 are bolded here. It's important to note here that these length at age estimates are coastwide estimates that are based on data compiled from several states. Since size at age is highly variable along the coast, these average length at age for the Chesapeake Bay may differ from these coastwide estimates used for this analysis.

For the percent protected analysis, all the size limit options considered in this section would provide greater protection from harvest for all three-year classes in 2023, relative to the status quo. However, that level of protection will change over time, as those fish continue to grow. The PDT noted that this percent protection analysis is useful to compare the relative changes in protection among the different options.

But there are some limitations to this analysis, one being that this analysis doesn't account for the differences between ocean and Chesapeake Bay fisheries, and when different size fish are available in those regions. In addition to this percent protected analysis, the PDT also estimated the reduction in removals that each option would provide, relative to the 2017 removals.

All the options presented in this section are estimated to achieve at least an 18 percent reduction in removals, relative to 2017. This is consistent with the required Addendum VI reduction. I mentioned the TC developed projections to consider the potential effects of alternative size limits on spawning stock biomass levels, as compared to the status quo option. These projections assumed a constant level of fishing mortality for each scenario, so assumed fishing at the F target, and these projections also assumed fishing effort was the same and constant for each scenario. These projections changed the selectivity pattern for each size limit scenario, based on what proportion of each year class would be available to the fishery. The initial set of projections were developed based on changing the ocean size limit only, and then an additional set of projections were developed considering changes to both the Chesapeake Bay and the ocean fisheries.

Details on those projection scenarios were provided in the appendix of the draft document. A couple key findings to note here from the Technical Committee. For all the projection scenarios, the stock recovery timeline, so that's the year when SSB would exceed the threshold, and the year when SSB would exceed the target, is the same for all scenarios, including for the status quo scenarios.

Another finding is that the overall projected change in total spawning stock biomass, relative to the status quo, is positive for most scenarios. However, that percent change in total SSB under the different size limits is not statistically significant. These results indicate that changing the selectivity does not have a significant impact on rebuilding the stock, if fishing mortality stays constant.

If the goal is to expedite stock rebuilding, then controlling the overall fishing mortality rate is more important than only changing the selectivity through changing size limits. After a discussion of these options and the analysis regarding the year class protection, the PDT is recommending that the Board remove this section from consideration in Draft Amendment 7.

If these options are removed, then the Addendum VI FMP standard for recreational size and bag limits would be maintained for Draft Amendment 7. The FMP standard for the ocean recreational fishery would be 28 inches to less than 35-inch slot, with a one-fish bag limit, and then for the Chesapeake Bay the FMP standard would be the 18-inch minimum size limit and a one-fish bag limit.

As I mentioned previously, the status quo options would maintain the current state implementation plans and CE programs from Addendum VI. The PDT is recommending removing these options for two primary reasons. The first is the projection results, and again the results indicate that the stock recovery timeline is the same for all size limit options, including the status quo.

The Board added this issue of protecting year classes to Draft Amendment 7, in order to support stock rebuilding, but these projections indicate that changing the size limits does not have a significant impact on rebuilding the stock, if the F rate remains constant.

The PDTs second reason for their recommendation is that selecting new recreational measures through Amendment 7, before the 2022 stock assessment update, would present some significant timing

challenges, especially considering the uncertainty of how Amendment 7 measures would align with the stock assessment results. In other words, there is uncertainty as to whether Amendment 7 measures would achieve stock rebuilding. For example, if the assessment indicates that a reduction would be needed to rebuild the stock, Amendment 7 measures may or may not achieve that reduction. If they don't, then the Board would have to reconsider recreational measures again after the assessment, and that would mean reconsidering new measures again during the same year. On the other hand, the assessment could indicate that the status quo Addendum VI measures may achieve stock rebuilding, and if that's the case, then changing measures through Amendment 7 may not be warranted at this time.

In either case, this would present some conflict with the Board's desire for management stability. Regarding Advisory Panel input. One AP member noted support for removing these options from the document, considering the process of adjusting to changes in recreational measures and size limits can be costly for the industry.

On the other hand, several AP members noted support for maintaining these options in Draft Amendment 7. Those AP members noted that the public should have the opportunity to comment on alternative size limits, and what they want to see in the fishery. They also noted that some size limit options would result in a greater reduction in harvest, and some alternatives may reduce release mortality.

Additionally, some AP members noted that diverse age structure is also important to consider, and that although these options may not significantly increase spawning stock biomass, protecting these strong year classes is still important, considering that future recruitment is highly variable.

One AP member also noted the use of closed seasons to protect year classes, and some AP members noted the potential relationship between protecting large fish and the quality of striped bass eggs and recruits. That wraps up the year class section, and before I pause for questions and discussion on that section, I'm going to review the rebuilding section as well.

This section provides some additional context on the timing of the stock assessment and Amendment 7 that I mentioned earlier. When the benchmark stock assessment was accepted for management use in 2019, the spawning stock biomass threshold trigger was tripped, and the Board is required to rebuild SSB to the target by no later than 2029.

The Board has expressed some concern about the recent low recruitment estimates, and the potential impact of this low recruitment on the ability of the stock to rebuild. As part of the analysis for the recruitment trigger that we discussed earlier in the Draft Amendment, the TC identified 2007 to 2020 as a low recruitment period, and that's based on the Maryland Juvenile Abundance Index.

These several years of poor recruitment may indicate that the level of removals that was sustainable during an average or an above average recruitment period, may not be sustainable during this low recruitment period. This section of the Draft Amendment considers which recruitment assumption to apply to the rebuilding calculations, and it also outlines the rebuilding plan framework, and responding to the 2022 stock assessment results.

I mentioned the 2022 stock assessment update is expected to be complete and presented at the October board meeting, and this assessment will provide updated spawning stock biomass and fishing mortality reference point values, and it will also provide an updated evaluation of stock status, with a terminal year of 2021. This assessment update will incorporate two years of data under Addendum VI, that's 2020 and 2021. The assessment will also calculate the fishing mortality rate that would be required to rebuild spawning stock biomass to the target by 2029, and this is referred to as F rebuild.

F rebuild is distinct from F target in that F rebuild takes into account that ten-year rebuilding

timeframe. On the other hand, F target is calculated to achieve the target in the long term, without taking into account a specific rebuilding timeframe. Finally, the assessment will provide stock projections going forward.

The option for consideration in this section is related to calculating this F rebuild. F rebuild could be calculated using different assumptions for recruitment. Typically, F rebuild is calculated by drawing recruitment from values observed from 1990 and forward. This is referred to as the standard recruitment method, which is Option A.

However, F rebuild could be calculated by drawing recruitment only from a below average period, and this is the Option B, referred to as the low recruitment regime assumption. Using the low recruitment assumption in Option B would be a more conservative approach that would result in a lower F rebuild value to achieve stock rebuilding by 2029.

From the Advisory Panel, some AP members noted support for this more conservative approach, especially considering the recent low juvenile abundance index values. The figure in this section of the Draft Amendment outlines how Amendment 7 will inform the 2022 stock assessment update.

Amendment 7 with potential final action in May, will determine the recruitment assumption used for the assessment, as I just described, either the standard recruitment method, or the low recruitment assumption. Draft Amendment 7 at this point includes the year class options for selecting recreational size and bag limits, and the Amendment maintains status quo commercial measures.

Then moving into the 2022 assessment in October. That assessment again, will provide an updated evaluation of stock status. The assessment will calculate F rebuild, using the recruitment method selected through Amendment 7, and the assessment will also develop stock projections, taking into account measures under Amendment 7.

There are two potential outcomes of the 2022 assessment. The first on the left with the green box would be the good news, if the projections indicate that the rebuilding target will be achieved under Amendment 7 measures, then those Amendment 7 measures are sufficient for rebuilding, and those measures would be implemented in 2023.

On the other hand, on the right side in the red box, the assessment could indicate that Amendment 7 measures will not achieve the rebuilding target. In that case, the assessment would calculate what reduction would be needed to achieve F rebuild, and an addendum could be developed in 2023, to consider new measures that would meet that required reduction. In that case, those addendum measures would likely not be implemented until 2024. Then in either case, the next opportunity after that to evaluate rebuilding progress, would be the following stock assessment, potentially a benchmark, maybe around 2025. Mr. Chair, that wraps up my slides on the rebuilding section and on the year class section, and I'm happy to take any questions on either section.

CHAIR GARY: Thanks very much, Emilie, and I appreciate you covering both of those sections, because of the inherent linkage between the two of them. That helped me a lot, hopefully it helped others. At this point, what we're going to do is just go with questions for now, and then go into the discussion as we did in the previous section. Toni, I'll look to you for hands raised for questions for Emilie.

MS. KERNS: Thank you, Mr. Chair, I have Megan Ware, Justin Davis and John McMurray.

CHAIR GARY: Okay, Megan.

MS. WARE: This question may be most appropriate for Katie, because we were admittedly e-mailing back and forth about it. But my question is, in Table 4, that table presents different ocean size limits, and it looks at the reduction in total removals. There are some options there, such as Option B, which is a 28 inch to 32-inch slot that results in a

higher level of removals than the options we chose previously.

However, when looking at the appendix, that same option results in the worst outcome for SSB, and then conversely there is the 35-inch minimum that results in the smallest reduction in total removals, but the best outcome in SSB. I found those results to be a bit confounding, so I'm hoping that either staff or Katie is able to help explain those outcomes.

MS. FRANKE: Thanks, Megan, I'm going to defer to Katie, if she could take this question.

DR. KATIE DREW: Sure, it's a good question, and I think it is maybe a little unintuitive. But I think the thing to keep in mind is that the Technical Committee's analysis specifically separated the effects of a reduction in removals, and the effects of changing what ages or sizes the fishery is operating on through the size and bag limit changes.

We did not account for any potential reduction in removals that those regulation changes could cause. We only focused on, if F was the same across, essentially if removals or effort was the same in all of those different options, which option would provide the best outcome for the stock, in terms of spawning stock biomass. This was done, like I said, to kind of separate that effect of, some of these regulations may or may not cause a change in removals from 2020 levels, from status quo levels.

We wanted to focus on, what's the effect, just in terms of their ability to protect that year class. Overall, as Emilie said, the analysis showed that controlling F is really more important than any of the options that we looked at, any of the options in this document, in terms of affecting the selectivity, and effecting what proportion of the population is vulnerable to that fishery. While those options, I think while that Option B might reduce harvest in the short term, because it is more restrictive than the current status quo measures. It wouldn't necessarily do any better of a job than any other options that would provide the same level of removals. Hopefully that helps, if not I can try to explain further.

MS. WARE: A quick follow up if I may, Mr. Chair.

CHAIR GARY: Yes, go ahead, Megan.

MS. WARE: Yes, I appreciate that, Katie. Yes, I guess to summarize that maybe, and you can tell me if I'm wrong in saying this. These projections are looking at a change in selectivity, and not any accompanying change in total removals that may come with that management change. Is that correct?

DR. DREW: Yes, that is correct.

MS. WARE: Okay, thank you.

CHAIR GARY: Toni, I hate to ask you again. I thought I heard you say John McMurray, but there were a couple others I didn't quite get.

MS. KERNS: Justin Davis first, then John McMurray, and now Tom Fote is in the queue.

CHAIR GARY: Okay, Justin, you have the floor.

DR. DAVIS: I'm going to try to sneak in two questions here on my one question. Both questions pertain to the rebuilding plan, and specifically the low recruitment assumption. I'm wondering if there is some way, when we send this out to public comment, to illustrate to the public the actual sort of difference that it would make to select our status quo approach to F, versus the F rebuild characterized by low recruitment.

I mean we can tell the public that the status quo approach is using the full time series of recruitment from 1990 forward, and the low recruitment approach is using just the time series from 2007 forward, where recruitment has been low. But I'm wondering if it would be possible to do something like a retroactive analysis of the Addendum VI outcome, had we used the more conservative estimate of recruitment.

How much higher of a reduction removal would we have been looking at in Addendum VI, had we made that more conservative assumption about

recruitment? I'm wondering if there is something we can do to put in the document to demonstrate to the public the actual difference that choosing that F rebuild will make.

The second question I have is, we often think with these documents that the Board has the latitude at final action to select an option that's within the range of options contemplated in the document. Is that in play here, you know essentially, we have two options here, characterized by using two different time series of recruitment to characterize recruitment. Could the Board potentially at final action, select some intermediate option to characterize low recruitment that uses a different set of years from the recruitment time series?

MS. FRANKE: To your first question about demonstrating, sort of more clearly demonstrating what selecting either of these options that are now up on the screen would mean. As part of the initial recruitment trigger analysis, the TC did look at a few different scenarios using, well I guess it was a high versus a low recruitment regime.

I'll maybe hand it over to Katie, to see what we could put together to better demonstrate what it would mean for F rebuild, in terms of which option is selected here. To your second question about choosing a range of options. Potentially selecting or choosing a recruitment assumption that's somewhere between A and B. The only thing I would say about that is the TC hasn't identified any sort of intermediate option, so I'm not exactly sure what that would look like.

MS. KERNS: Emilie, I'm going to fill in, Marty, if that's okay. Justin, the Board in other species, and this species have done before. They've chosen an option that fell between Option X and Y, as long as it fell amongst the range then it was in play. We've never done that before, to my recollection in a rebuilding calculation.

But I don't see why it wouldn't be able to do that, as long as we could figure out a way to calculate it. I'm just trying to think through that. That would be the tricky part in my mind. You know, and the Board acknowledged that that is something that they are willing to do here.

DR. DREW: Just to, I think, follow up on the first part of that question, which was, can we do something to illustrate this the better for the public. I would say, if the Board is interested in that, I think we could definitely develop something. I think as Emilie was saying, our first sort of cut at this we were saying, the F under a low recruitment regime, the F target under a low recruitment regime would be something like 0.18 as opposed to 0.20.

But I think we didn't apply that for the rebuilding concept. But I will also say, you know I think we would want to be very careful not to do anything that could conflict with the results of the upcoming stock assessment, so that I don't want to put anything out there that looked like a rebuilding plan, based on the 2017 assessment, because the Board never requested any kind of information like that from the TC.

There are some projections that exist out here already. We could do something similar for this, with this lower recruitment. But I think we would just want to make sure that we don't put anything out there that will then later be superseded by the upcoming stock assessment.

CHAIR GARY: Justin, do you have a follow for that?

DR. DAVIS: No, I'm good, thank you everybody for those thoughts.

CHAIR GARY: We're still on questions, and before I go to John McMurray, I just want to mention, in our agenda we've got to stop at 3:30 for a 15-minute break. I would like to honor that, so everybody could just take a breather. Again, we're on questions only now, so John McMurray.

MR. McMURRAY: I have a question regarding measures to protect 2015-, 2017-, and 2018-year classes. I do understand the rationale for the PDTs recommendation to take that out, particularly the timing challenge of selecting new measures before the '22 assessment. In something like a 35-inch size

limit protects the 2015s for a few years, and then once they reach 35 or 36 inches, well they aren't protected, and thus there is no real benefit in the long run.

But I do understand. While I understand that, wasn't the intent here to protect those good years classes, particularly the 2015s, until they could contribute significantly to the female SSB before they were harvested? I mean it certainly seems like something like a 35-inch limit would achieve that.

Yes, I understand we're just redirecting F on other year classes, but it's the 2015s that are abundant that we hope would make a significant contribution to SSB. Maybe, Emilie, you could explain the rationale to me a little better, because I still don't quite get it. I'm not going to oppose taking it out, but I need to understand a little better how you guys are determining that it won't work.

MS. FRANKE: The PDT isn't saying that these measures won't protect year classes. Based on the percent protected analysis, that indicates that these measures indeed will protect these year classes. What the PDT is highlighting is that changing the size limits to protect these year classes, won't significantly impact the total spawning stock biomass levels, and therefore the stock won't recover any faster than it would under the status quo slot limit.

This analysis is showing that these year classes will be more protected, but that protection won't lead to significantly speeding up the time by which the stock would recover. For the PDT it was really that result from the projections, coupled with the timing challenges with the upcoming assessment.

The uncertainty around if any of the measures proposed in this section, whether it's the status quo or any of the alternatives, would achieve rebuilding. We just won't know that until the assessment. It's a combination of the projection that these measures won't expedite rebuilding, along with the timing challenges that led the PDT to this recommendation.

CHAIR GARY: Did that answer your question, John, or did you have a follow?

MR. McMURRAY: It did answer my question, but there is disconnect here somewhere. It seems counterintuitive that a super abundant year class, once it recruits, wouldn't somehow expedite the rebuilding, or make a major contribution to female SSB. You know I guess I'll have to leave it to people that are much smarter than me, because I do trust the PDTs analysis, so thank you.

CHAIR GARY: Next up is Tom Fote.

MR. FOTE: I didn't see any analysis when I'm looking through this, by putting more restrictive measures and smaller slot limits. We know that's going to increase the hook and release mortality, and what are the consequences of basically making those changes that will produce more hook and release mortality, since hook and release mortality is the major mortality in this fishery, as far as the recreational, and almost as big as the commercial and recreational mortality combined.

That's the first question. Second question, I'm kind of confused here. We're making all these assumptions that by increasing the spawning stock biomass we're actually going to have great recruitment. But nowhere do I see in this rebuilding, that this is based on also the right environmental conditions.

Because we can try to basically protect the spawning stock biomass, but we can't control the environment. We've had good recruitment with much lower stock assessment than we have right now. I'm just looking to where that's going to state in the document, because we're building peoples hopes on a document that I see is wrong about that.

MS. FRANKE: Thanks, Tom.

CHAIR GARY: Yes, Emilie, I think I understood part of Tom's question. Are you good with that?

MS. FRANKE: Yes, so I can try to address both aspects. The first question about the increase in

release morality associated with changing the recreational size limit. As part of the analysis in the calculations of what the change in total removals would be for each option, relative to 2017. There is a table in the Amendment that outlines how those changes to the size limits would impact harvest, and how the predicted changes to release mortality.

For all of the options there would be a pretty significant reduction in harvest, and release mortality would just increase by a couple percentage points, resulting in a reduction in total removals, somewhere between 18 percent all the way up to 30 percent. The calculation of the percent change in removals for these options does address release mortality.

However, something that the TC and PDT emphasized is that there is uncertainty as to how angler behavior and effort will change if the size limits change. Also, depending on if certain year classes become more or less available to the fishery. While the analysis takes into account release mortality where possible, all of the analysis assumes that effort would remain constant, and that is a big source of uncertainty. Then as far as your second point about recruitment, and the importance of environmental conditions for a successful recruitment.

As part of the recruitment trigger section, the PDT does note that there is a weak stock recruit relationship for striped bass. The environmental conditions do play a big part, and as far as the recruitment trigger goes. You know responding to periods of low recruitment by reducing fishing pressure, won't necessarily increase future recruitment because of that weak stock recruit relationship. The PDT did try to address that earlier in the document.

CHAIR GARY: Tom, did that adequately answer your questions, or do you have a follow?

MR. FOTE: It just doesn't do what we, in the section we were talking about putting all these restrictions, it should also mention it in this section also, because we're setting expectations. We did that with summer flounder. We basically set expectations that we protect the spawning stock by raising the size limit constantly.

We're going to do good, and we're not seeing, we're seeing poor recruitment, and when we had smaller size limits we saw better recruitment. We constantly tell that to the public. They are expecting us to basically do this a lot of times, and it's not working. It's not working in a lot of species. I don't know how it's going to work with striped bass, because the environment is already changing, global warming and everything else that comes into play.

CHAIR GARY: Okay, thank you, Tom, I appreciate that. Toni, are there other folks queued up with questions for Emilie and staff?

MS. KERNS: Yes, we have three additional names, we have David Sikorski, Pat Geer, and Jesse Hornstein.

CHAIR GARY: Okay, Dave Sikorski, you are up, and happy belated birthday.

MR. DAVID SIKORSKI: Thank you, Mr. Chairman, I'm glad the scheduling occurred today not yesterday for this meeting. Like in the last meeting, I've had a lot of focus on what stock we're exploiting in the Chesapeake, and then also what's being produced by the current spawning stock, and you know we see through our young of year surveys. In looking at the rebuilding piece, the question that comes to mind, even more so now after Dr. Davis' comments about the bookending of a potential range of options.

I wonder if the Board could direct staff or TC to go even lower with the assumptions about recruitment. I think it would provide important guidance if we continue to see the Chesapeake, or at least the Maryland portion of the Chesapeake fall below average, and just be smart in a sense of the bookending component. Help me understand if I'm off here. I'm thinking that is a more conservative approach doable, and maybe it's not from an average perspective, based on past data. But is it

doable? I guess I'll stop there, I think that is my question.

CHAIR GARY: Emilie, are you good with answering that?

MS. FRANKE: Thanks, Dave, for the question. Yes, I might defer to Katie here in a moment. Dave, it sounds like you're thinking, you know looking at Option B, which I'll put up on the screen, this low recruitment regime. You're trying to think if there would be an even more conservative option than this Option B.

The only thing I'll say to that is that based on the analysis the Technical Committee used to identify these periods of high and low recruitment. You know this is the low recruitment period they identified, so I'll defer to Katie if there is potentially additional analysis that could identify an even more conservative option at this point.

DR. DREW: Yes, I think we could develop, for example, the low recruitment regime that we saw during the period of stock decline from about the 2010s forward, was definitely not as low as some of the past low recruitment regimes we've seen, even within the stock assessment. If the Board was interested in seeing, you know what would rebuilding look like under recruitment levels that we saw in the early eighties, which was truly a low point for recruitment for this stock. That is something we could put together.

We could pick a different percentile of that low recruitment regime, so instead of picking say the average or the median, pick the 25th percentile of recruitment in that regime. I think we would obviously look to the Board for some sort of guidance on that kind of information. But I think, you know keeping in mind that talking about rebuilding to 2029, future recruitment in the near term isn't going to be a big impact on that timeline. It really is predominantly going to be what's already in the system, so to speak.

MR. SIKORSKI: Thank you, no follow ups.

CHAIR GARY: We have two other folks that had questions. I would like to make a clean break. It's 3:30, but if we can squeeze these questions in, take a break and then come back, and then pick up with the discussion, that would be my preference. But this is a sensitive topic, we can all tell. Toni, I guess a question before I go to Pat. Are there several more people that are queued up for questions, or do you think this might be the last couple?

MS. KERNS: There are no additional Board members.

CHAIR GARY: Okay, let's see if we can do that then, so Pat, I'll go to you, and then we'll go to Jesse, and then we're going to take our 15-minute break.

MR. PAT GEER: Mr. Chairman, I'm going to make this easy on you. I had a comment, and not a question, and I'll hold that comment until later.

CHAIR GARY: Thank you, Pat, Jesse, you have the floor.

MR. JESSE HORNSTEIN: My question is, if the projections were done, well, for the ones that were done using the standard recruitment levels to get back to the F target level. If they used the low recruitment regime to do those projections, would it be more important to protect large year classes under the low recruitment regime, as opposed to the standard recruitment regime? That would be my question, thanks.

MS. FRANKE: Thanks, Jesse. I'm going to again defer to Katie to see if there is any information we can provide, because as you mentioned, yes, the projections for the year class section were done using the standard recruitment assumption.

DR. DREW: It's hard to predict exactly how those two would interact. I think probably the key would be protecting those year classes from the beginning, as opposed to right now, where we're sort of trying to come in a little late on some of these year classes that have already been, I mean these fish, striped bass are vulnerable to the fishery from about Age 2 onwards. I think, you know trying to come in a little

late on the protecting the year class may have less of an impact than, you know if we did this rebuilding plan and tried to protect strong year classes as they enter the fishery. In the future, down the line, that might have more of an impact. Whether it would have more of an impact, whether it would be more important to protect those strong year classes during a weaker recruitment regime. I think we would have to sort of run the math, and see if the benefits would be stronger in that situation. But it's not unreasonable to assume that.

CHAIR GARY: Thanks, Katie, Jessie does that answer your question, or do you have a follow?

MR. HORNSTEIN: No, that answers it, thank you.

CHAIR GARY: All right, thank you, Jesse. Emilie and Toni, I think we're just a couple of minutes over, I'm showing 3:34. I would like to go ahead and take the 15-minute break now, and then transition over to discussion on this section, of these two sections. We'll go ahead and break now, and Toni, if that's okay, we'll reconvene at, it would be 3:50, correct?

MS. KERNS: Correct, Marty.

CHAIR GARY: All right, so we'll go ahead and take a 15-minute break, everybody catch their breath, get their thoughts together, the Board, and we'll go ahead and discuss these two combined sections. Thank you.

(Whereupon a recess was taken.)

CHAIR GARY: Welcome back everyone. We're going to now transition to the discussion phase for these sections that Emilie just covered. I would like to go ahead and open up to the Board, if you could raise your hands and indicate who would like to start the discussion. Again, we're looking at potential modification, removal, and possibly addition as well. Toni, do you have any hands up?

MS. KERNS: I do, Marty, I have Mike Armstrong.

CHAIR GARY: All right, Dr. Armstrong, you're on.

DR. ARMSTRONG: I have a motion, and it will add to this document. I've been struggling with where to bring this motion. But I think it's definitely germane to the rebuilding process, and it may give people a different way to think about the two things we're going to discuss right now. It might delay things, but I would like to get it on the table, and perhaps you can decide if we talk about it now, or maybe shove it down the road a little bit. I don't know, Emilie, do you have the motion?

MS. FRANKE: I do, yes. It should be on the screen momentarily here.

DR. ARMSTRONG: I will read it. Move to add an option to Section 4.4: Rebuilding Plan that considers an alternative process for responding to the 2022 stock assessment as follows: If the 2022 results indicate the Amendment 7 measures have less than a 50% probability of rebuilding the stock by 2029 (as calculated using the recruitment assumption specified in Amendment 7) and if the stock assessment indicates at least a 5% reduction in removals is needed to achieve F rebuild, the Board may adjust measures to achieve F rebuild via Board action. Just very briefly, this is about expediency, and the important element is it would take out the addendum process and make it a specification process for the Board. If I get a second, I'll explain a little bit more.

CHAIR GARY: Thank you, Mike, is there a second to Dr. Armstrong's motion?

MS. KERNS: I have Jason McNamee.

CHAIR GARY: Thank you, Jason, Mike, it's back to you to build on your rationale.

DR. ARMSTRONG: Good, thank you. Again, I'd like to see it in the document, and we don't have to implement it when we make that decision. But it adds a backstop. I'm worried about this stock. As you know, the last three years have been really bad recruitment. By the time the stock assessment comes out, we will have a shot, we will see what the '22-year class looks like, and we don't know what's going to come out of the assessment.

It may be okay if you use poor recruitment, it may not be okay. But we've been in this, what I would term a slump, and our constituency has seen this. We've been in it a number of years. If we come out of this assessment, and we have to take a reduction, we won't put that in until 2024. I don't think we should wait that long.

I don't think the stock should wait that long for an action. You know it's unusual. It's a specification process, it cuts public opinion out, speeds it up tremendously, but it is done with other species, like fluke and black sea bass and things like that. The things that we might want to discuss. The biggest thing is the Board may adjust measures to achieve F rebuild via Board action. Even if we accept that we don't have to use it.

The other thing is its 50 percent probability of rebuilding. I think that's reasonable, that's what we usually go with. Then, I talked to a number of people. If the stock assessment indicates at least a 5 percent reduction removal. Our last plan, we had to reduce 18 percent. What I'm saying is, if it's a trivial amount. If it comes back and the TC says, you have to reduce by 4 percent, then fine.

We go through the addendum process, because things are not dire. If they come back and say we need a 20 percent reduction, then we can't wait a year, well from now it's a year and a half to implement it in 2024. That's my rationale. It's really about expediency and crafting a different route that is very quick to reduce F if we need to, and we may or may not use this. But I would like to see it in the document in Section 4.4, the rebuilding part.

CHAIR GARY: Jason, would you like to expand any thoughts you have for your second?

DR. JASON McNAMEE: I won't say too much. I've been just kind of thinking through the process here, thinking about the last process with striped bass, and I think folks were getting really frustrated with the amount of time that things were taking. They feel a real immediate sense of the need for action. I think I really appreciated Dr. Armstrong's motions, kind of thinking out ahead a little bit, getting us positioned to be able to react quickly, rather than having to bear the frustration of kind of letting all of the sequences line up. I think it's a smart move to think out ahead of this a little bit, get ourselves positioned to be able to react quicker than we normally would be able to, if we get continued bad signals out of the stock assessment.

CHAIR GARY: Given the time and we have two more sections to cover, but the importance of this particular one, and I think a lot of folks on the Board and the public, folks I've talked to, I'm sure others have as well. Ever since the Plan Development Team memo came out, this is a thought that has come into their head. I think this is going to help us to have this discussion, so we'll go ahead and pursue this now.

I'm going to go ahead and open this up to discussion with the Board, and we'll go ahead and decide. This, or course, is going to be an additive component, and I would also like to give the public an opportunity to comment on this, before we go to a vote on this. I'll open it up, Toni, to the Board for questions and comments.

MS. KERNS: We have Mike Luisi, Megan Ware, Justin Davis, Max Appelman, and Joe Cimino.

CHAIR GARY: Toni, who was third in the cue? It was Mike, Megan, and then who was the third one you had?

MS. KERNS: Justin.

CHAIR GARY: Justin Davis and then Joe Cimino, correct?

MS. KERNS: Max is in between Justin and Joe.

CHAIR GARY: Got it, okay, we'll go first to Mike Luisi.

MR. LUISI: My question, well let me first say that I absolutely support the idea behind this motion. I've been thinking about it myself a lot, as to how we may be able to react to the upcoming assessment in

a timely way, to make adjustments if necessary. I appreciate, Mike, you thinking about this as well, and putting this before us. My question to you, Mike, is as far as intent on making adjustments to the measures. Do you foresee, as you used in your example?

Let's say an 18 or let's say a 20 percent reduction is necessary from the results of the stock assessment. Do you envision the Board using the specifications process to approve that 20 percent reduction, and then states will craft measures to achieve that via data that they would use in other cases, like through a conservation equivalency program? Do you foresee the Board in this case selecting the Chesapeake Bay alternatives, or measures, and the coastal measures, and establishing new measures, which are specific to actual regulations that would need to be implemented?

DR. ARMSTRONG: The way I envision it is, at the October meeting we would get the stock assessment results. If it comes back, we need X amount of reduction, we put this in action. We charge the TC with coming up options to achieve that. They come back in January, and we're presented with a suite of options, and the Board picks.

But I think probably in this is you go the other way, where we say this is the reduction you need. Well, no, let me take that back. My intent was that the Board will make that decision, and then the whole CE will be complicated by what we pick for that option. It could be CE isn't on the table then, so it would all be up to what comes out of the Board.

CHAIR GARY: Mike Luisi, is that good?

MR. LUISI: Yes, Mike got clarity there, thanks, Marty.

CHAIR GARY: Next up is Megan Ware.

MS. WARE: Yes, I want to thank Mike for making this motion. I think it addresses the mismatch in timing between taking final action on this Amendment ahead of getting those 2022 assessment results. I also appreciate that this motion is really specific to the criteria that would need to be met in the assessment, to trigger the Board using this Board action and specification process.

I think I share concerns that Mike raised, about waiting until 2024 to take action in response to a poor assessment outcome. Just because the longer we wait to take action the more severe those measures are going to have to be, to meet the 2029 deadline. I support this motion.

CHAIR GARY: As we go through the queue here, if you're in support of in opposition, in the interest of time let's try to be as concise as we can, and hit our points. I just want to be conscientious of the other subject matter we have to cover, and making sure that we end. You know we are on a five o'clock stop. We could go a little bit longer, but I want to try to keep everybody on schedule. Next up is Justin Davis.

DR. DAVIS: Up front I'll say that I do plan on supporting this motion. I appreciate that intent of it in particular. I think it makes me feel better about adopting the PDTs recommendation to remove Section 4.2.1 from the Amendment, the measures to protect the 2015-year class, because this could give us a mechanism for taking quick action after the stock assessment later this year, if we get bad news from the assessment, and determine that we're not on path for rebuilding.

I do have concerns around process. I don't think we should take it lightly that we're essentially doing away with the normal public comment process we would go through before changing measures. I would just as that however this ends up playing out, whatever process we follow, that when candidate measures.

You know if we end up going down this road, and there are some potential new measures, that those are provided to the Board enough in advance of final action, that there is some opportunity for Board members, for state agencies, to do some level of outreach to the public to get some

feedback. I think it would be a really bad outcome, if we sort of got the potential suite of measures very quickly before the meeting, where we had to take final action and there wasn't time for some level of public comment. I just also wanted to clarify. Based on the language here, I'm seeing that this action is specific to the 2022 stock assessment results.

I just want to clarify that we're not essentially, by putting this in the Amendment, adding a new sort of potential tool in the tool box that the Board could avail itself of, at any time when we're in a rebuilding and we get a stock assessment that indicates that we're not on track for rebuilding. Down the road, if unfortunately, we get the next stock assessment, and it looks like we're off track for rebuilding. This would not mean that we could immediately just use this new specification process, we would still have to go through the standard addendum process.

CHAIR GARY: Mike Armstrong, is that your intention, to address Justin's last point?

DR. ARMSTRONG: Yes, this is a one use only thing, unless down the road we decide to change it. But as of now, it's we use it once, we may use it once and that's it.

CHAIR GARY: Okay, thank you, Mike. The next up is Max Appelman.

MR. APPELMAN: I definitely support this concept, the intent behind this, for all the reasons that have been said already. I think I can support the motion, but I want to echo some of the concerns I heard from Justin. Well, for one I heard specifications process, which I think is a very new term to this management board, which has already been pointed out. That's not a typical process that we go through for striped bass.

I am concerned about cutting out our normal public comment process, adaptive management process, especially for this fishery. I think what might help me be a little more comfortable, is really understanding the difference in timeline between something like this and the addendum process.

I do recognize that there is going to be some period of time in both processes, whether an addendum or this Board action that requires some TC work. You know I think there is a lot of interest in having time for Board members to meet with constituents to get their input as well. Are we able to walk through the process here on both sides, from when the assessment results are available to when final measures would be imp lamented?

CHAIR GARY: Emilie, are you able to map that out for Max and answer his question?

MS. FRANKE: Yes, I am happy to do so. For the addendum process. If the Board initiated an addendum in October of this year, 2022. If the PDT developed an addendum and the Board approved that addendum for public comment in February of 2023, the public comment period would take place in the spring, and the Board could potentially consider final action on that addendum in May of 2023.

By that point, I don't think there would be time for states to implement those regulations for the 2023 season. That's where that likely implementation in 2024 came from. As far as the motion that is on the board here. I think if this were added to the document, and if this were approved by the Board in May. I think the Board in May could task the TC with calculating or identifying a couple of options for measures, to meet the reduction, if the stock assessment report indicates a reduction is needed.

I think potentially the TC could provide concurrently with the assessment results in October of this year, could provide a couple of options for measures that would meet said reduction. I will say that if the Board does task the TC with that, it would be helpful for the Board to provide any guidance, if possible, to the TC.

For example, one slot limit, one minimum size, or something like that. Then potentially, depending on the Commission, and how things go, maybe there

could be some sort of additional special board meeting that could be scheduled, you know after the October meeting, for the Board to take final action, so that as Justin mentioned, maybe there could be some time for the Board to process those results and potential options.

Then if final action was taken by the Board in late 2022 or early 2023, similar to the Addendum VI process, I think states could potentially get those regulations implemented by April 1, 2023. I think the difference would be a potential implementation date of April 1, 2023 versus January 1, 2024.

CHAIR GARY: Did that help, Max?

MR. APPELMAN: Yes, could I ask a quick follow up?

CHAIR GARY: Sure.

MR. APPELMAN: I would agree that it would be very unusual for striped bass measures to change in the middle of the season. What I heard with the addendum process is final action would happen in May, and then there would be some time after that, maybe a couple months at most before states could get measures on the books.

That would be unusual to change measures in the middle of the season. Usually, we wait until the beginning of the next season to have those changes go into effect. I would agree that that would be unusual, but it's not out of this Board's purview to set an implementation deadline like that. I guess my follow up question would be, it sounds like there would be a very limited number of options that would be put forward under the specifications process, which I'm not necessarily opposed to.

But I'm wondering if there would be opportunity after that, considering that this is sort of a stop gap, I think I heard that term used, a stop gap approach, to be a little bit more careful and deliberate about what our more long-term management program would look like under the remaining years of the rebuilding program. Is that something that you envision, the makers of the motion, Mike and J-Mac?

CHAIR GARY: Mike or Jason, can you comment to Max's inquiry?

DR ARMSTRONG: Sure, can you say the end of your question again? You broke up on my end.

MR. APPELMAN: Yes, I am under the impression that if we went through the specifications process, the types of options that would be considered in October or late this year would be limited, there would only be a couple. Again, keeping the typical public comment process in mind and doing away with that. I wonder if there is still going to be an opportunity after that to go through the Commission's adaptive management process, to consider a more long-term measures for the remainder of this rebuilding program.

DR. ARMSTRONG: Yes. I mean I think the motion is silent on that. But I think the Board can do what they want, and I think that could be a route they go.

CHAIR GARY: Did that answer your question, Max?

MR. APPELMAN: Yes, thank you.

CHAIR GARY: I'm watching the time melt away here a little bit, but this is a really, really important discussion. We have Joe Cimino up next, and before I turn it over to Joe, I just want to mention. I do want the public to have some opportunity to react to this. Other Board members, if you have something new to add to this discussion, or we haven't heard from you today, certainly, by all means raise your hand, and I'll go to Toni after Joe. But I do want to transition at some point over to the public soon, so Joe, it's over to you.

MR. JOE CIMINO: I just want to say that I'm in support of this for all the reasons mentioned. I am a little bit surprised by all the concerns, but I'm just going to hope that this motion passes, and that we can address some of those in the future. You know I think a lot of states have a public process in place to deal with the federally managed species. I'm a little surprised by all of NOAA's concerns on this, but I'll address that more if this motion passes, and I certainly hope it does.

CHAIR GARY: Toni, in the spirit of hopefully folks on the Board who haven't had a chance to talk here at the meeting, or if somebody needs to add something to this. I'll ask you one more time if there are any Board members that have their hands raised, and then we'll give it over to the public.

MS. KERNS: There were a couple of souls that put their hands down, but we still have three. I have John McMurray, Bill Hyatt, and Emerson Hasbrouck.

CHAIR GARY: Okay, I'm going to honor all three, but John McMurray, no offense to you, I'm going to go ahead and let Bill Hyatt go first, and then Emerson, because we haven't heard from them in this meeting yet, if that's okay. I'll go to Bill Hyatt first.

MR. BILL HYATT: I'll be quick. I just want to say that I very much support this motion, and I don't really share some of the concerns, maybe not to the degree that others have expressed about loss of opportunity for public input, if this is put in place. I'm not so concerned, because of the very specificity of this option and of this motion, and because any application will fall very, very shortly afterwards, following the public input that we're going to get on the Amendment. Support it, and don't have great concerns over not having immediate public input, should we need to implement it.

CHAIR GARY: I'll go to Emerson now.

MR. EMERSON C. HASBROUCK: I certainly support this motion. This motion is just to get this into the public hearing document. It's not like we're taking final action on this component being a final entity in Amendment 7. Let's get it out to the public, and the public will certainly tell us if they would rather have us have the ability to act quickly, with not a lot of public input, or go the more traditional route of an addendum that's going to take a little bit longer, but provide more public input.

CHAIR GARY: Last but not least, back to you, John McMurray.

MR. McMURRAY: I'll be very brief, because I think Emerson just covered most of what I wanted to cover. A great majority of the public comment up to now has been clear that we need to act sooner rather than later, and this offers a tool in the tool box to do that. I think we'll hear a lot of support for it when we go out to public with Amendment 7. I'm in support and that's it.

CHAIR GARY: Toni, I'm going to go ahead now and we'll swing over to the public. I think the best way to handle this will be, let's get a show of hands from those folks in the public that would like to make a comment. Based on the number that we receive, we may have to adjust the time allotment, but I'll let you see how many hands go up.

MS. KERNS: I'm just going to give one more second. Unless I see your hand go up, I'm going to consider, we have four people, and I'm going to cut it at those four.

CHAIR GARY: Okay, thank you, Toni, and to save time I'm going to let you call them, if you don't mind, in the order that you see fit. For those four public members, if you could keep your message very short, a minute or less if possible.

MS. KERNS: Okay, Patrick Paquette.

MR. PATRICK PAQUETTE: Patrick Paquette, Massachusetts Striped Bass Association, and a member of the AP. I very much appreciate this motion by my home state of Massachusetts. As a member of the AP, I struggled with the protection for protecting those three-year classes, because in the back of my head I said, the assessment is going to come out, and we're going to need a reduction.

That seems like that that is plain as day to me, from looking at all the information that I follow. I appreciate getting this out to the public now. I believe that this cuts the timeline, as explained, and I believe that including it in the draft amendment. I believe that the AP will have the ability to comment on the draft amendment. I know that the organized recreational public has many leaders that are on it, and ready to submit letters, and organize people to submit letters. I believe there will be a level of public input. I very much appreciate the ASMFC

even considering, basically shifting into a faster gear than normal, and I support the motion. Thank you.

CHAIR GARY: Thank you very much, Patrick, I appreciate that. Who's next, Toni?

MS. KERNS: Taylor Vavra.

MR. TAYLOR VAVRA: I just very quickly wanted to say that I think the angling public has made it clear that they want decisive, corrective action. We feel that Mr. Armstrong's motion is consistent with that feedback. On behalf of our members of Stripers Forever, and given the boundaries outlined by the motion. It's a one-time measure, that we support this motion, and think this is a good move. It puts us ahead of the game in some ways, so just wanted to say that. Thank you.

CHAIR GARY: Thank you, Taylor, and who do we have next, Toni?

MS. KERNS: Charlie Witek.

MR. CHARLIE WITEK: I feel very comfortable to say that I think I'm speaking for the 3,000 plus people that commented on the Public Information Document last spring, and often raised the issue of delay, that this is the kind of decisive, prompt action that we want to see from the management board, and I expect it will get wide support.

CHAIR GARY: Thank you, Charlie, and I think we have one more, Toni.

MS. KERNS: Phil Zalesak.

CHAIR GARY: Go ahead, Phil.

MS. KERNS: Again, Phil, I still haven't been able to hear you, so you are still not connected via audio. I apologize. I think, Marty, you've got to move on.

CHAIR GARY: Yes, I think we're going to go ahead and move on. Phil, I apologize. We're trying to do everything we can. Maybe we can work with you in the future ahead of time, to make sure we can help you out even better. All right, so we'll bring this back to the Board, and I'm going to go ahead and well, let's give it a try. I'll try to see if we can do this by consent. Is anyone on the Board in opposition of this motion?

MS. KERNS: I have no hands up in opposition.

CHAIR GARY: Then the motion passes by consent. All right, and then Emilie and Toni, help me. But I think we have two more sections to go through. But before we do that. This was one discussion, I would like to ask the Board if there are any other considerations, discussion, concerns they have related to that particular section, or are we okay to move on? If so, raise your hand. If we don't see any hands, we're going to have Emilie move on to the last two sections.

MS. KERNS: I Have Justin Davis, followed by Mike Luisi.

CHAIR GARY: Okay, we're not quite there yet, so Justin, we'll go with you first.

DR. DAVIS: I just wanted to clarify that this point Section 4.2.1 is still in the document, and would go out for public comment, unless we take some action at this point.

CHAIR GARY: Emilie, is that accurate?

MS. FRANKE: Yes, Mr. Chair. Unless action is taken, those measures to protect the year classes are still in the document at this point.

DR. DAVIS: Follow up, Mr. Chair.

CHAIR GARY: Yes, go ahead, Justin.

DR. DAVIS: I would be willing to make a motion to that effect, but I would defer to Mike Luisi first, since he had his hand up, if he's got a comment.

CHAIR GARY: Okay, go ahead, Mike Luisi.

MR. LUISI: No, go ahead, I had the same question, Justin. I wanted to make sure that the PDTs evaluation of Section 4.2.1 was discussed, and if you

have a motion, I would say go for it. I didn't have on planned, but I did want to discuss where we go with that section, thanks.

CHAIR GARY: Back to you, Justin.

DR. DAVIS: Given that, I would move to remove Section 4.2.1 Measures to Protect Strong Year Classes (Recreational Size and Bag Limits) from Amendment 7.

CHAIR GARY: Thank you, Justin, and we'll look for a second.

MS. KERNS: I have David Borden.

CHAIR GARY: All right, seconded by David Borden, and go ahead, Justin, if you want to provide your rationale.

DR. DAVIS: I'll try to keep it brief. I think we've already had a pretty good discussion around this. I agree with the PDTs recommendation that we should remove this from the Amendment. It's clear based on the projections that were done that these options will not provide a benefit to stock rebuilding, which was the rationale for taking a look at this.

I certainly can appreciate the rationale for having added this into the Amendment, and taking a look at this. But given that at this point there is no evidence that these measures will assist us with stock rebuilding, also the noted challenges around the timing with the stock assessment coming out later this year. Also, given the motion that we just passed for the new process, by which the Board will have the option to take quick action later this year, if we should get a result from the stock assessment that indicates we're not on track for rebuilding. I think at this point, I feel pretty safe recommending that we remove this from the document.

CHAIR GARY: David, as a seconder do you have anything to add to that?

MR. BORDEN: No, other than I agree with all of Dr. Davis' comments, and I won't reiterate those points, thank you.

CHAIR GARY: Thank you, David. I remain very sensitive to the public's perspectives, and we've heard a good bit of that captured in the previous dialogue. But I would put it out this way. If there are any members of the public that have strong opposition to this motion, could you please raise your hand, I would like to hear from you.

MS. KERNS: I have one member of the public, Mike Plaia.

CHAIR GARY: Go ahead, Mike.

MR. MICHAEL PLAIA: Yes, thank you. My name is Mike Plaia, I'm on the AP. I'll reiterate what I said at the AP. Katie's analysis did not show an effect on SSB, because she assumed that F remained the same, and that there was no benefit of having larger, more viable fry. I think the only way we can be sure about what the impact is on angler effort and catch, would be to send this out to the public and hear what they have to say. I'm not saying that it's a bad idea or a good idea, I just want to hear from the public.

CHAIR GARY: All right, thank you, Mike, I appreciate that. Toni, is there anyone else that raised their hand that has opposition to this?

MS. KERNS: I have one other individual, and that is Andrew Reichardt.

CHAIR GARY: Go ahead, Andrew.

MR. ANDREW REICHARDT: Hi, Andrew Reichardt, I'm from Flyfishers International. I'm not actually voicing opposition, as much as just confusion. I'm a member of the general public, and the VP of conservation for our organization. I'm sort of unclear what this motion would accomplish, and that's just to give you a perspective from the general public is, I think it's a little bit too granular for someone kind of coming in as a lay person to really grasp what this motion would do.

CHAIR GARY: Emilie, do you want to try to attempt to answer Andrew's inquiry, just in a broad sense?

MS. FRANKE: Sure, Mr. Chair. This motion would remove the options that are currently proposed in Draft Amendment 7 to change the recreational size and bag limits. The Draft Amendment currently proposes a couple different options for the ocean and the Bay for changing the recreational size and bag limits. If this motion is approved, those options would be removed from the document, so the public would not have an opportunity to comment on those options, and Draft Amendment 7 would maintain the current management measures that are in place.

MR. REICHARDT: Thank you, Emilie, and thank you Mr. Chairman.

CHAIR GARY: You're welcome, Andrew. No others, Toni?

MS. KERNS: No other members of the public. You do have Mike Luisi. I don't know, Marty what you want me to do. Now I've had additional members of the public raise their hand. I don't know where.

CHAIR GARY: I think we're going to go ahead and bring this back to the Board. We are at 4:30, and we still have two sections to go. We've had pretty extensive dialogue on it already. Let's, I tell you what, Mike, go ahead if you can keep it brief, and then I want to bring this back for a vote, please. Mike Luisi.

MR. LUISI: I'm sorry, Mr. Chairman, I had my hand up from before, sorry about that.

CHAIR GARY: Let's take it back to the Board then. Again, I'll try this to see if we have consensus. Is there anyone on the Board who is in opposition to this motion, raise your hand.

MS. WARE: Request for a 30 second caucus, please.

CHAIR GARY: Okay, Megan, so we'll go with 30 second caucus, if you could set the timer, Toni, and we'll come back. Okay, we're back, and thank you, Megan, I didn't mean to be presumptuous. Thank you for asking for that. I will try now again via consent. Is there any opposition to this motion?

MS. KERNS: We have one hand up in opposition, the state of Maine.

CHAIR GARY: Okay, so then we have to come back to a formal vote. All right, so Toni, we'll go ahead and call the question. This motion is to remove Section 4.2.1 Measures to Protect Strong Year Classes (Recreational Size and Bag Limits) from Draft Amendment 7. Motion by Dr. Davis, second by Mr. Borden. All in favor, please raise your hand.

MS. KERNS: Just letting the hands settle. I have New Jersey, New Hampshire, Pennsylvania, U.S. Fish and Wildlife Service, Connecticut, NOAA, District of Colombia, Massachusetts, Maryland, New York, Delaware, Virginia, Rhode Island, North Carolina and Potomac River Fisheries Commission. I will put the hands down for everybody. I'm ready.

CHAIR GARY: All those opposed to this motion, please raise your hands.

MS. KERNS: Maine.

CHAIR GARY: Thank you, Toni, I think that's all the votes, do we need to call for null or abstentions?

MS. KERNS: I believe you are correct, so no.

CHAIR GARY: The motion passes 15 to 1.

MS. FRANKE: That's correct, Mr. Chair.

CHAIR GARY: Thank you, Emilie, all right. We're still on this particular section. Emilie has two more to cover, and I'll just ask the question one more time from this particular section on the year class options and rebuild. Are there any other issues that we need to discuss, otherwise we'll move on to the last two items?

MS. KERNS: I have no additional hands. Emilie, you are clear to go ahead on these last two sections.

MS. FRANKE: Sounds good, thank you, Mr. Chair. These final two sections are Section 4.2.2, which is Measures to Address Recreational Release Mortality and Section 4.6.2, which is Conservation Equivalency. As Mr. Chair mentioned, these are the final two sections with proposed options in Draft Amendment 7 that we have not already covered.

Starting with recreational release mortality. Release mortality in the recreational fishery is a large component of annual fishing mortality. It was the largest component from 2017 through 2020, and the striped bass fishery is predominately recreational, with most of the catch released alive. As a reminder, the current management program primarily uses bag limits and size limits to constrain harvest, and is not designed to control effort.

This makes it difficult to control overall fishing mortality. Efforts to reduce fishing mortality through harvest reductions may be of limited use, unless release mortality can be addressed. There are four sets of options in this section. In addition to the Option A, which is status quo circle hook requirement that was implemented through Addendum VI, the Board could consider one or more of the following types of options to address recreational release mortality.

Option B is Effort Controls, which are seasonal closures. Option C is Gear Restrictions, and Option D is Outreach and Education. The status quo option here, Option A, is the circle hook requirement implemented through Addendum VI, and this requires circle hooks when fishing recreationally with bait for striped bass.

This requirement does not apply to any artificial lure with bait attached. Currently there is guidance on incidental catch of striped bass as follows. It is recommended that striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury.

Option B is Seasonal Closures, and this could be selected to be implemented along with the status quo Option A. Seasonal Closures are intended to reduce the number of live releases, by reducing the number of fishing trips or effort that interact with striped bass. The majority of options in the Draft Amendment are no targeting closure options that were developed by the PDT, and this is in order to address releases resulting from both harvest trips and catch and release fishing trips. Estimating the reduction in removals from a no targeting closure depends on assumptions about changes in angler behavior, and this is highly uncertain. For future management actions the PDT recommends that the TC discuss and potentially establish a standardized method for estimating the reduction in removals associated with no targeting closures.

As far as the options themselves. Option B1 under Seasonal Closures are state specific two-week closures, and these closures would be no targeting closures. All recreational targeting of striped bass would be prohibited for a minimum of a two-week period. This is intended to reduce effort during times when the fishery is active in each state.

Under Sub-Option B1-A, each state's closure would need to occur during a wave with at least 15 percent of the state's annual directed stripe bass trips, and that's provided in Table 10 in the Draft Amendment, and those calculations were based on MRIP directed trip data from 2017 through 2019.

Sub-Option B1-B would require each state's closure to occur during a wave with at least 25 percent of the state's annual directed striped bass trips. For these options CE would not be permitted. If the Board selected one of these closure options under B1, the Board would also need to consider Tier 1 listed here, to determine whether existing no targeting closures implemented in 2020 through Addendum VI CE, would or would not meet the requirement of these new closures.

Under Option A, those existing no-targeting closures implemented in 2020 would fulfill the new closure requirements. Under Option B, those existing no targeting closures would not fulfill the requirements, and so those states would need to either implement additional closures, or implement the FMP standard size limit.

Under Option B2, B2 considers spawning closures, and this could be selected in addition to closures under B1 or independent of Option B1. These spawning area closures could contribute to stock rebuilding by eliminating harvest, and/or reducing releases of spawning and pre-spawn fish. For these options, existing spawning closures would be applied toward meeting the requirements of whichever sub-option is selected.

B2-A would require a no harvest closure during Wave 1 and Wave 2 in spawning areas. B2-B would require a no targeting closure for a minimum of two weeks on the spawning grounds, so not necessarily the entire spawning area, but on the spawning grounds during a two-week period in Wave 2 or 3, to align with peak spawning in that state.

For these options again, CE would not be permitted. Moving on to Option C, Gear Restrictions. Again, in addition to the status quo circle hook requirement, the Board could consider additional gear restrictions. Option C1 would prohibit the use of any device other than a non-lethal device to remove a striped bass from the water or assist in releasing a striped bass. The Draft Amendment does include a definition of a non-lethal device. Option C2 would require that striped bass caught on any unapproved method of take would be returned to the water immediately without necessary injury. As a reminder, this incidental catch provision is currently included as recommended guidance in Addendum VI, so selecting this option under Amendment 7 would make this incidental catch provision a requirement. Then finally Option D is related to Outreach and Education. States have already implemented Outreach and Education campaigns related to circle hooks and related to best handling practices, as encouraged by Addendum VI. These options are intended to more explicitly recognize those efforts as part of Amendment 7.

D1 would require states to promote best handling practices, and states would be required to provide updates on these outreach efforts in their annual compliance reports. Under D2 it would be recommended that states continue to promote these best handling and release practices. As I mentioned at the beginning of the presentation, the Law Enforcement Committee met in December, 2021 and briefly discussed these proposed options to address recreational release mortality in Draft Amendment 7.

They noted the following in their discussion. The first is there was concern that no targeting closures would be unenforceable. There was support for making the incidental catch provision a requirement. It was recommended to conduct outreach to manufacturers to continue addressing questions about what qualifies as a circle hook.

The LEC noted the overall importance of regulatory consistency, particularly for shared waterbodies. The LEC also noted that any spawning area closures should be clearly defined. For example, clearly defining whether the closure is in major spawning rivers or minor spawning rivers or both.

I'll move on now to the Conservation Equivalency options, and then I will pause for questions. The statement of the problem for the Conservation Equivalency section notes that there is value in allowing states to implement alternative regulations, based on the needs of the fisheries. But this creates regulatory inconsistency among states, and this comes with associated challenges such as enforcement challenges with these regulatory inconsistencies.

It's also difficult to evaluate the effectiveness of CE programs once they're implemented, due to the challenge of separating the performance of the measures from other variables, like changes in angler behavior, or changes in fish availability. There have also been some concerns raised that some of the alternative measures implemented through CE could potentially undermine management objectives.

Finally, there is limited guidance on how and when CE should be pursued, and how exactly equivalency is defined. Option A is the status quo, and Options B through E in this section consider whether to adopt new default restrictions or requirements for the use of CE. Any sub-option selected under B

through E would automatically apply to any new FMP standards approved through Amendment 7, and all subsequent management actions and CE proposals.

Again, Option A is status quo. The Board currently has final discretion regarding the use of CE and approval of CE programs. The Board can restrict the use of CE on an ad hoc basis for any FMP requirement. Potential restrictions could include specifying measures that are not applicable for CE, or the Board could limit the range of measures that may be proposed through CE. Again, currently the Board does have discretion on the use of CE. Option B would establish default restrictions on the use of CE for certain fisheries, depending on the status of the stock. When these stock conditions are met, CE programs would not be approved, based on whichever option is selected. It's important to note here that any previously existing CE programs would remain in place until Board action is taken to change those FMP standards.

The first set of sub-options here is B1, and this considers what those restrictions would be. B1-A would not allow CE if the stock is overfished. B1-B would not allow CE if the stock is below the SSB target, and the Board could choose either B1-A or B1-B. Then in addition to those, or exclusive of those, the Board could select B1-C, which would not allow CE if overfishing is occurring.

The next set of sub-options, B2 considers the applicability of any restrictions that are selected under B1. Most of the concerns surrounding CE that were identified during the scoping and PID process for Draft Amendment 7, were related to non-quota managed fisheries, due to uncertainty in MRIP data, and challenges with measuring the effectiveness of CE programs.

At a minimum, any restrictions selected under B1 would apply to non-quota managed recreational fisheries, which would include the Chesapeake Bay trophy fishery. The restrictions would not automatically apply to the Hudson River, the Delaware River and the Delaware Bay fisheries. Under Option B2, the Board could choose to extend those default CE restrictions, to apply to one or more additional fisheries.

The Board could choose to extend those restrictions to the Hudson and Delaware fisheries. The Board could extend those restrictions to quota managed recreational fisheries, so extend those restrictions to bonus programs, and/or the Board could extend those restrictions to apply to commercial fisheries.

The next set of options, Option C would establish default precision standards for MRIP catch and effort estimates used in CE proposals. These options are based on the percent standard error, or PSE associated with MRIP estimates. C1 would not allow CE proposals to use MRIP data with a PSE exceeding 50.

For C2 the PSE could not exceed 40, and for C3 the PSE could not exceed 30. The next set of sub-options, Option D would establish a default uncertainty buffer for CE proposals for non-quota managed fisheries. This uncertainty buffer is intended to increase the probability of success in achieving equivalency to the FMP standards.

Option D1 would require an uncertainty buffer of 10 percent for CE programs. D2 would require a buffer of 25 percent. D3 would require a buffer of 50 percent. Then finally Option E considers establishing a definition of what equivalency means for CE proposals for non-quota managed fisheries. These options are intended to specify the percent reduction or liberalization that must be met with a CE proposal. In the case where the FMP standard is projected to have different effects at the coastwide versus the state-specific level.

Proposed CE programs would be required to demonstrate equivalency to either Option E1, which would be equivalency to the percent reduction projected for the FMP standard at the coastwide level. For example, this was their requirement for Addendum VI, that each state was required to achieve an 18 percent reduction, which is the same reduction that was projected coastwide.

Under Option E2, proposed CE programs would be required to demonstrate equivalency to the percent reduction for the FMP standard projected at the state level. That's all I have, Mr. Chair on recreational release mortality and conservation equivalency. I am happy to take any questions.

CHAIR GARY: All right, thank you, Emilie. We go back to the Board, and again emphasizing what our intentions are, in terms of whether we're going to leave things as they are, or whether we're going to modify the narrative or remove it. We'll now move to questions for Emilie, and any discussion. We'll start with questions first, so Toni, any Board members have questions on these two sections?

MS. KERNS: I have two members with their hands up, John McMurray and Justin Davis, and one more, Emerson Hasbrouck.

CHAIR GARY: Okay, John.

MR. McMURRAY: A quick question on the spawning area closures. The Draft isn't clear on what constitutes a spawning area. I'm sure plans would vary greatly, depending on how far down in the watershed it would go. I think that it probably should be clear in the document, so people know exactly what they're commenting on. I guess where in the process would we clarify that?

MS. FRANKE: Thanks for the question, John. I think perhaps we could potentially reach out to the states. What I will say is that Amendment 6 includes a recommendation for states to implement spawning area closures. That recommendation in Amendment 6 lists those spawning areas pretty generally, which is how they are listed in Draft Amendment 7. I think from the PDTs perspective, we didn't talk about specific boundaries for those closures, more that the states would determine where those spawning areas are, to implement those closures.

CHAIR GARY: Did that answer your question, John, do you need a follow?

MR. McMURRAY: It did, so there are guidelines or some sort of map in the Amendment 6 recommendations we could direct people to? Is that what I heard?

MS. FRANKE: No. There is no specific map or specific boundaries listed. Amendment 6 just lists the spawning areas themselves, and then left it to the states to determine those exact boundaries. I might turn to Toni, if she has any thoughts on the Commission specifying where spawning closure boundaries would be, or if that would be a state decision.

MS. KERNS: Thanks, Emilie. If it were a state decision, we would just need to specify that the state would determine the spawning areas in the document so the public knew that. Otherwise, we would have to define the spawning areas within the document itself. Bob, I don't know if you have another possibility, or refer to another document. I mean we could just take what was in Amendment 7, I guess, and put it into this document. But I'll go to Bob for any other ideas.

EXECUTIVE DIRECTOR BEAL: Yes, Marty, I'll chime in. I don't have anything else to add, it just needs to be defined somewhere, either through this document or leave it up to the states, and the states will have to provide probably a definition for review by the Technical Committee and the Board as part of their implementation plan, if this option is selected.

CHAIR GARY: John, any last thoughts? Does that answer your question to satisfaction or not?

MR. McMURRAY: It doesn't really, to be honest. You're going to get a lot of feedback from the public, I'm sure, because they don't. I mean to tell them what the spawning area closure would be after they comment on it, or after we maybe approve it, I think, is not really the right way to go here. But it doesn't sound like there is any good solution, so I'll just leave it at that.

CHAIR GARY: It's an interesting discussion. In the Chesapeake the spawning rivers, areas and reaches

are pretty well defined by the two states. PRFCs jurisdiction is defined in Maryland COMAR. I can't speak for other states and other jurisdictions. Emilie and Toni, to address John's concern, is that something we can do outside of a motion, to try to help clarification for the public? Just trying to see if we can address his concern.

MS. FRANKE: Toni, I'll just jump in. I think from the PDT perspective. I think I would propose deferring to the states to define those areas. I don't know if, from Toni's perspective, if those definitions would be in this Draft Amendment, or if it would be just deferring to the states to implement those closures to cover the applicable spawning areas.

MS. KERNS: I think, and to add on to that, Marty. I think what we could do is in the document we would say, for states that have spawning areas defined, we would use those spawning areas as defined by the state. For those that do not, if this option were approved, states would have to define those and bring them back to the Board as part of their implementation plan.

CHAIR GARY: John, does that's help a little bit? For me at least it seemed to add some clarity.

MR. McMURRAY: It does. I'm not going to take up any more of the Board's time on it.

CHAIR GARY: Next, we'll go to Justin Davis.

DR. DAVIS: My question is, if the Board takes final action on this Amendment in, let's say May, and ops to approve one of the options under Section 4.2.2 under one of the no targeting closure options and/or the spawning closure options, and also votes to add the sort of one time only specifications process to the tool box.

Then we get a not great result from the stock assessment in October, and decide to use that specs process. Will the potential savings that are going to be achieved through implementation of those no targeting or spawning area closures in 2023, will those need to be taken into account, when the Technical Committee determines what measures are needed to achieve whatever reduction we have to achieve, to get back on the rebuilding timeline?

MS. FRANKE: Because there is no standardized method established to calculate the percent reductions achieved by no targeting closures at this point. I would assume that those closures may not be incorporated into that calculation of achieving a reduction. Again, I'll defer to Katie if she thinks otherwise, but at this point I don't anticipate that being possible.

DR. DREW: I think it be, if we did do it, it would probably be along the lines of something more like a sensitivity analysis, because obviously the issue with some of these closures is, what happens to all of those trips where fish were released? Do those trips still happen or not? Sort of the maximum reduction you would expect is that everybody who released a fish gives up and goes home, or everybody who caught a fish before, you know none of those trips happened.

Versus everybody just switches to catch and release and it doesn't change effort at all, and so we would probably look at some of the bounds on potential reductions that you would expect to help us understand the full potential of reductions with these measures, and then provide that information to the Board, to help them assess how conservative or risky they want to be with some of their assumptions about what reductions would be, due to these programs where again, we don't have a really good way of answering some of these questions.

CHAIR GARY: Justin, do you have any follow to that, or are you satisfied?

DR. DAVIS: Just a quick follow up. I saw language on a slide that said the TC will need to develop a standardized method for estimating removals achieved by no targeting reductions. I took that to mean that at some point the TC will need to develop a way to assign a number to what level of removals we can achieve with no targeting closures. Is what being said here that we're just not going to

be ready to do that before October, 2022, or is just that we're never really going to be able to do that?

DR. DREW: It will probably be, we'll have to see how, especially if the TC is going to be tasked with developing options for Board specifications to be at the Board with the assessment. That would certainly cut into our time to be able to do this by October 2022. But I think there is also the issue of the standardized method may end up just being, here's a range of possible reductions, to give you a sense of the uncertainty with these, rather than here is the right number. I think we would need more data down the line to see how these closures actually impact effort and angler behavior, in order to get to something a little more certain down the line.

DR. DAVIS: Okay, thank you.

CHAIR GARY: All right, so we had one more, Emerson, and I'll turn it over to him. But before we do that, we're at five o'clock now, so I would ask other Board members. Unless your question is really critical, Emerson would be the last question. But if you really do feel like you have a compelling question you need to have answered, go ahead and put your hand up and I'll turn to Toni, and then we'll switch to discussion and see whether or not we're going to have any structural modification or removal of any of the narrative, and go from there. Over to you, Emerson.

MR. HASBROUCK: Thank you, Emilie, for the great job you're doing in leading us through this document today. The question I had is actually relative to the answers to Justin's question that he just asked. In the document under Section 4.2.2, right there is a note on estimating reduction and removals.

Estimating the reduction and removals from a non-targeting seasonal closure depends, I'm not going to read the whole thing. Essentially, that note says that the PDT recommends the Board task the TC to establish such methods in advance of implementation of subsequent management actions. The TC may need guidance from the Board on this task.

I'm just wondering, when the PDT is looking for the Board to task the TC to establish such methods. As Justin said, the way it is now, is this what's going to, you know it's in the document but it's going to never be utilized, because we don't have a method to estimate the reduction and removals? When is it that the PDT is looking for the Board to task the TC, so that this can move forward?

MS. FRANKE: From the PDTs perspective, I think this recommendation was a little bit more long term in that, potentially after Amendment 7 is implemented for any subsequent addendums, it would be beneficial for the TC to have this discussion about no targeting closures, and the estimating the reduction in removals, because through this Amendment it's clear that there is some Board interest in pursuing no targeting closures as a potential management tool.

Coming into Amendment 7, the PDT was not trying to achieve a specific reduction with these Amendment 7 closures. However, the PDT recognized that given the interest in these closures as a management tool, that for any subsequent actions after Amendment 7, it would be beneficial for the TC to have this discussion. I think as Katie mentioned, in the near term I think the focus will be on the assessment. But I think potentially after the assessment that could be a task for the TC, so that any future management actions would have that behind them.

MR. HASBROUCK: Follow up, Mr. Chairman?

CHAIR GARY: Please, if you can keep it short, Emerson.

MR. HASBROUCK: Yes, I'll try to. Does that mean if some of the options, some of the components of Option B under 4.2.2, Effort Control and Seasonal Closures, or Seasonal Requirements? If those are included in the final adoption of Amendment 7, we're not really going to do anything with those? You're just going to kind of languish until we direct

the PDT, or we direct the TC to establish some methods, in terms of estimating removals? Am I following this correctly? Even if it's in there we're not going to do anything with it for a while?

MS. FRANKE: If those, oh go ahead, Toni, sorry.

MS. KERNS: I was just going to try to help out on this, Emerson. The PDTs recommendation for these is not specific to how much you've removed. They were trying to get at ways to lower recreational release mortalities. There wasn't a specific percentage that we're trying to achieve.

For this document itself, in essence, it's not like an addendum where you're trying to achieve a certain percent reduction. It's not necessary for this document, but as Emilie said, for future if you're trying to use it as a tool to achieve a certain reduction, then the TC is going to have to try to figure something out.

MR. HASBROUCK: Okay, thank you. The note that's in this Amendment about the Board tasking the TC to establish its methods is not appropriate at this time; that will be something in the future?

MS. FRANKE: Yes, I think that task was intended as a task following implementation of Amendment 7.

MR. HASBROUCK: Thank you.

CHAIR GARY: I am aware that one other person, I must have missed it, had his hand raised, it's Dave Sikorski. I'm going to go ahead and turn it to Dave. That's going to be the last question. Then I'm going to ask the Board. You know if functionally there is a desire to modify or remove any of the narrative language, let's have that discussion. If there is not, I think we'll be looking to move this to fruition. I'll go ahead and turn this over to Dave Sikorsky, and then come back and ask the question if there are any actual adjustments we want to make. Go ahead, Dave.

MR. SIKORSKI: My focus is on Figures 4 and 5 under the spawning closure component. To me, I think there might be a small error on the Maryland piece in December. The season closes in the end of December, it's not a no targeting provision. Just a note. Then the request would be consistent with the request from last meeting, which I think fell through the cracks, and it relates to providing the public and the Board a better way to show us where fisheries are persecuted on spawning stock fish.

I think this makes sense. While I recognize this document is largely focused on recreational measures, I think just the simple addition of commercial fisheries on spawning stock fish, and how they lay out amongst the year, would be really helpful, and mostly because we're looking at a composite F.

We're looking at a coastwide stock we're trying to manage, and a fishing mortality that's all sources of mortality. To me, it's really helpful to understand when these spawning fish are prosecuted by a fishery, not just the recreational one. Well, I guess my question is can that be added?

MS. FRANKE: I think if you could just give a little bit more clarification of what you're looking for. Are you looking for sort of understanding when the commercial seasons for different states, and sort of trying to apply that to when spawning fish are potentially available to the fishery?

MR. SIKORSKI: Yes, spawning stock biomass.

MS. FRANKE: Okay, I can follow up with you after the Board meeting if that's helpful. As you mentioned, this section is focused on the recreational fishery. Perhaps we can add something additional to the appendix, to summarize those commercial seasons, if that would be okay with you.

MR. SIKORSKI: That would be great, thank you.

CHAIR GARY: All right, thank you, Dave. Now I'm going to shift this back to discussion and any potential action for this section. I keep thinking of October 2014, when we were in Mystic, Connecticut. We had I think almost a 10-hour meeting, and I do not aspire to prolong this meeting

to the point where everyone is having trouble functioning.

I guess the question now before the Board is, you have these two sections, we've gone through it, asked questions. Are there any modifications, deletions? Is there anything structurally that we want to adjust here, and if so, if we want to do that, let's have a discussion and show of hands. If there is not, then I think maybe we're in a position to bring the Amendment to fruition, and approve it. But Toni, we'll see if you get a show of hands of any kind that want to adjust anything in these two sections.

MS. KERNS: I have Roy Miller.

CHAIR GARY: Yes, Roy.

MR. ROY W. MILLER: If I may, very quickly, a correction since David Sikorski brought it up. If you look on Figure 5 under spawning area closures, it shows Delaware Bay as being the spawning area in Delaware. It is not classified as a spawning area in Delaware. The Delaware River is, not Delaware Bay, so just a quick correction, thank you.

CHAIR GARY: No, thank you, Roy, I appreciate that. Toni, did anyone raise their hands to signify that they want to move in the direction to discuss possible modifications?

MS. KERNS: I have two hands, Tom Fote and Emerson Hasbrouck.

CHAIR GARY: Okay, Tom, go ahead.

MR. FOTE: Yes, Marty, I'm not saying that we should discuss this any further. What I'm saying is that we're going out to public hearings, we've got a document. We've worked on this document continuously, at least four meetings. We should just go ahead, put it to bed and let it go out. Because we're going to discuss this to death when it comes back anyway. I'm comfortable sending this document as is right now.

CHAIR GARY: Okay, thank you, Tom. Emerson, did you have another comment?

MR. HASBROUCK: No, I didn't. You know I was getting a sense that there wasn't going to be any motions here to change these two sections, so I was ready to make a motion to accept this to send it out to public hearing, if you're ready.

CHAIR GARY: We, I believe, are ready, Emerson, so I'll go ahead and allow you to entertain that motion.

MR. HASBROUCK: Does staff have a motion prepared, okay, so move to approve Draft Amendment 7 for public comment as modified today.

CHAIR GARY: Thank you, Emerson, do we have a second to the motion?

MS. KERNS: I have Justin Davis.

CHAIR GARY: We have a motion to approve Draft Amendment 7 for public comment as modified today, a motion by Mr. Hasbrouck, second by Dr. Davis. Toni, do we want to have a full vote on this, or is okay to see if we can do this by consent?

MS. KERNS: You can ask for opposition. That's fine.

CHAIR GARY: All right, so I'll ask the question. Is there anyone on the Board who is opposed to this motion, raise their hand.

MS. KERNS: I have no Board members with their hand up.

CHAIR GARY: Okay, Toni, you said there are no hands up.

MS. KERNS: That is correct, Mr. Chair.

CHAIR GARY: Thank you, Toni, thank you Board members. The motion passes by unanimous consent and Amendment 7 is approved to go out for public comment, so thank you all for your hard work.

OTHER BUSINESS

We are toward the end. We are at Other Business. My ear buds died; they ran out of batteries. I think we are at the portion of the agenda for Other Business, and I do have one thing to say before we adjourn. Is there other business to come before this Board today?

MS. KERNS: I see no hands raised.

CHAIR GARY: Okay, then I would just like to say on behalf, hopefully I can speak for the Board, and all the folks that I've been interacting with over the last couple of years, to pour a lot of accolades on all the groups that convened together the Work Group back in 2020. The Plan Development Team, the Technical Committee, all that hard work those many, many meetings. There isn't a single person in the staff and all these groups that doesn't care for this species, and I really believe we're headed in a good direction, we're going to have a good discussion.

But I wanted to thank all of those groups that worked so hard to bring this to fruition, and I want to save the best thanks to Emilie Franke for all of her hard work. It's been an incredible herculean job, Emilie, and you've just been phenomenal. I can't thank you enough, and I think I speak for everyone on the Board and the public and participants, so thank you so much, Emilie, for all your help. With that, I don't believe we have any other business to come before this Board. I'll seek a motion to adjourn.

MS. KERNS: Hey Marty, do you want to just make one quick note, and I echo your comments on the work that all of these committees and commissioners and Emilie have all done. I think I threw Emilie into the lion's den to an extent, as a new staff member, right into the middle of this document, and she's really laying with it and has done an excellent job.

But I just wanted to note, and we talked a little bit about this at the Executive Committee, and I think the conversation will carry at the Policy Board level, just in terms of the timeframe for this document. The Commission has under the charter, it has specific guidelines that we have to follow, in terms of the number of days that the document has to be out, before you can conduct a hearing, and then after your last hearing the number of days that the document has to stay out.

If we get the document out, even on Friday, that timeline is going to be tight for the May meeting. I just want to make sure I set up some expectations for the Board, in terms of when you'll receive comment on this if we stay on the current schedule to have this information come out at the May meeting.

There had been discussions about having like a special Striped Bass Board meeting end of May, early June, possibly, depending on all the different documents that get approved this week, and the number of public hearings that we would need to have, in order to move all those documents through. But if we stay on the regular schedule, it could be that the information that the Board gets will be in pieces, in terms of the public comment on this.

It would be almost impossible for us to provide the summary of public comment on the meeting materials, and there is a high likelihood that a lot of the comments may come at the supplemental materials, if this is a typical striped bass document, where we receive a lot of comments. I just wanted to set that expectation up for the Board and the public, and we will work as hard as we can and as best as we can. But there are certain time constraints that we have via the charter.

CHAIR GARY: Thanks for mentioning that, Toni, and I guess aside from the Charter there is also the complications of the synergy of the other boards, many of which are having public hearings as well, if I'm not mistaken, that aren't going to make it any easier, as well, I guess. Okay, is there anything else from staff perspective, Emilie, Toni, which we need to mention before we adjourn?

MS. KERNS: I don't have any.

ADJOURNMENT

CHAIR GARY: Okay, thank you, I would take a motion to adjourn, if somebody would be kind enough to offer that up.

MS. KERNS: Tom Fote has his hand up.

CHAIR GARY: Motion to adjourn by Tom Fote, do we have a second?

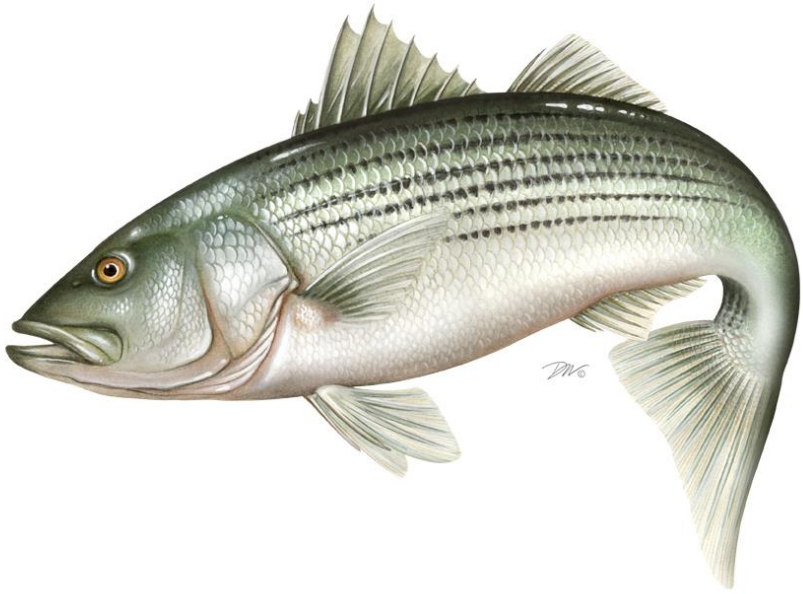
MS. KERNS: Cheri Patterson.

CHAIR GARY: Seconded by Cheri, is there any opposition to that, raise your hand. None, I'm assuming, Toni. The meeting is adjourned, thank you so much for your patience, Board and public. This Amendment is now approved to go out to public comment, and we look forward to everyone's participation in the process.

(Whereupon the meeting adjourned at 5:15 p.m. on January 26, 2022.)

Atlantic States Marine Fisheries Commission

Draft Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass For Public Comment



February 2022
Updated April 6, 2022 (Figure 4)

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Draft Document for Public Comment

Draft Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass

Prepared by

Atlantic States Marine Fisheries Commission
Atlantic Striped Bass Plan Development Team

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This is a report of the Atlantic States Marine Fisheries Commission pursuant to U.S. Department of Commerce, National Oceanic and Atmospheric Administration Award No. NAXXXXXX

Draft Document for Public Comment

The Atlantic States Marine Fisheries Commission seeks your input on Draft Amendment 7 to the Atlantic Striped Bass Fishery Management Plan.

The public is encouraged to submit comments regarding this document during the public comment period. Comments must be received by **11:59 PM (EST) on April 15, 2022.** Regardless of when they were sent, comments received after that time will not be included in the official record. The Atlantic Striped Bass Management Board will consider public comment on this document before finalizing Amendment 7.

You may submit public comment by attending a public hearing held in your state or jurisdiction or mailing, faxing, or emailing written comments to the address below. Comments can also be referred to your state's members on the Atlantic Striped Bass Management Board or Atlantic Striped Bass Advisory Panel; however, only comments received at a public hearing or written comments submitted to the Commission will become part of the public comment record.

Mail: Emilie Franke
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N
Arlington VA. 22201

Email: comments@asmfc.org
(Subject: Draft Amendment 7)
Phone: (703) 842-0740
Fax: (703) 842-0741

If your organization is planning to release an action alert in response to Draft Amendment 7, or if you have questions, please contact Emilie Franke, Fishery Management Plan Coordinator, at 703.842.0740 or efranke@asmfc.org.

The timeline for completion of Amendment 7 is as follows:

August 2020	Board initiated Amendment 7
February 2021	Board reviewed Draft Public Information Document (PID) and approved PID for public comment
February - April 2021	Public comment on PID
May 2021	Board reviewed public comment; directed Plan Development Team to develop Draft Amendment
May - December 2021	Preparation of Draft Amendment
January 2022	Board reviewed and approved Draft Amendment for public comment
February - April 2022	Public comment on Draft Amendment ***Current Step***
May 2022	Board reviews public comment and selects final measures for the Amendment; Policy Board and Commission approve the Amendment

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1.0 INTRODUCTION

The Atlantic States Marine Fisheries Commission (ASMFC), under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, is responsible for managing Atlantic striped bass *(Morone saxatilis)* in state waters (0-3 miles) along the Atlantic Coast. The states and jurisdictions of Maine through North Carolina, including Pennsylvania, the District of Columbia, and the Potomac River Fisheries Commission (PRFC), participate in the management of this species as part of the Commission's Atlantic Striped Bass Management Board (Board). Amendment 7 to the Interstate Fishery Management Plan (FMP) for Atlantic striped bass replaces Amendment 6 (2003) and its Addenda I – VI. Management authority in the exclusive economic zone (3-200 miles from shore) lies with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS).

1.1 BACKGROUND INFORMATION

Since Amendment 6 was adopted in 2003, the status and understanding of the striped bass stock and fishery has changed considerably. The results of the 2018 Benchmark Stock Assessment (NEFSC 2019) in particular led the Board to discuss a number of significant issues facing striped bass management. The 2018 benchmark stock assessment indicated the striped bass stock has been overfished since 2013 and is experiencing overfishing, which changed perception of stock status. The Board accepted the assessment for management use in 2019; management triggers established through Amendment 6 tripped at that time, requiring the Board to take action to address both overfishing and the overfished status.

In April 2020, the Board implemented Addendum VI to end overfishing. In August 2020, the Board initiated development of Amendment 7 to the FMP to update the management program to better align with current fishery needs and priorities, and build upon the Addendum VI action to initiate rebuilding.

In February 2021, the Board approved for public comment the Public Information Document (PID) for Draft Amendment 7. Public comment was received and hearings were held between February and April 2021. At its May 2021 meeting, the Board tasked the Plan Development Team (PDT) with developing Draft Amendment 7 and provided additional guidance to the PDT at the August and October 2021 Board meetings. In January 2022, the Board approved for public comment Draft Amendment 7 with proposed options to address the following issues:

- Management Triggers (see *Section 4.1* Management Triggers)*;*
- Recreational Release Mortality (see *Section 4.2.2* Measures to Address Recreational Release Mortality)*;*
- Rebuilding Plan (see *Section 4.4* Rebuilding Plan); and
- Conservation Equivalency (see *Section 4.6.2* Management Program Equivalency)*.*

1.1.1 Statement of Problem

1.1.1.1 Management Triggers

The management triggers are intended to keep the Board accountable and were developed at a time when the stock was thought to be at historic high abundance and well above the female spawning stock biomass (SSB) target. However, as perceptions of stock status and fishery performance have changed, shortfalls with how the management triggers are designed have emerged. When female SSB is below the target level, the variable nature of fishing mortality can result in a continued need for management action. The shorter timetables for corrective action are also in conflict with the desire for management stability. As a consequence, the Board is sometimes criticized for considering changes to the management program before the stock has a chance to respond to the most recent management changes. Furthermore, the use of point estimates in decision-making does not account for an inherent level of uncertainty. Lastly, the observed long period of below average recruitment which contributed to recent declines in biomass has raised questions about the recruitment-based trigger and whether it is designed appropriately.

1.1.1.2 Recreational Release Mortality

Recreational release mortality constitutes a large component of annual fishing mortality—the largest component from 2017 through 2020—because the striped bass fishery is predominantly recreational and an overwhelming majority of the catch is released alive, either due to cultural preferences (i.e., fishing with the intent to catch and release striped bass) or regulation (e.g., the fish is not of legal size). Some stakeholders value the ability to harvest striped bass, while others value the experience of fishing for striped bass regardless of whether they are able to retain fish. The current management program, which primarily uses bag limits and size limits to constrain recreational harvest, is not designed to control fishing effort which makes it difficult to control overall fishing mortality. While the acceptable proportion of recreational release mortality in total removals should reflect the management objectives for the fishery, efforts to reduce overall fishing mortality through harvest reductions may be of limited use unless recreational release mortality can be addressed.

1.1.1.3 Stock Rebuilding and Low Recruitment

The Board has expressed concern about recent low recruitment estimates and the potential impact of low recruitment levels on the ability of the striped bass stock to rebuild by 2029. If rebuilding measures are implemented based on the standard recruitment method from the stock assessment but recruitment remains lower than average, the population may not be able to rebuild to the female SSB target by 2029. The next stock assessment update (expected in 2022) will calculate the fishing mortality rate required to rebuild the stock by 2029, and those rebuilding calculations could take into account different assumptions about recruitment.

1.1.1.4 Management Program Equivalency (Conservation Equivalency)

There is an essential tension between managing the striped bass fishery on a coastwide basis while affording states the flexibility to deviate from the FMP standard through conservation

equivalency (CE).[1] There is value in allowing states to implement alternative regulations tailored to the needs of their fisheries; however, this creates regulatory inconsistency among states and within shared waterbodies with associated challenges (e.g., enforcement). It is difficult to evaluate the effectiveness of CE programs and their equivalency to the FMP standard once implemented due to the challenge of separating the performance of management measures and outside variables (like angler behavior and availability of fish). Concerns have been raised that some alternative measures implemented through CE could potentially undermine management objectives. And finally, there is also limited guidance on how and when CE should be pursued, particularly when the stock is overfished and rebuilding is required, and how "equivalency" is defined.

1.1.2 Benefits of Implementation

The status and understanding of the striped bass resource and fishery has changed considerably since implementation of Amendment 6 in 2003. Reevaluation of striped bass management processes, specifically management triggers and conservation equivalency, and consideration of recreational fishery measures to address release mortality will support stock rebuilding and promote the sustainable management of the striped bass resource and fishery moving forward.

1.1.2.1 Ecological Benefits

Striped bass play an important ecological role in coastal marine ecosystems. Managers and stakeholders have expressed interest in the role of striped bass in the ecosystem from both a top-down perspective (as a predator that could affect other species) and a bottom-up perspective (as a consumer affected by prey availability). Young-of-year striped bass feed primarily on small invertebrates, and as they age, they start eating fish and larger invertebrates, including Atlantic menhaden, herring, bay anchovies, blue crabs, and lobster. Striped bass are also preyed on by other species; as young-of-year and juveniles, they are consumed by adult fish like bluefish, weakfish, and even other striped bass. Sustainable management of striped bass will contribute to maintaining a balanced marine ecosystem.

1.1.2.2 Social/Economic Benefits

Rebuilding the Atlantic striped bass population will enhance the economic and social benefits attributable to this population in the ASMFC member states. Economic benefits of a rebuilt stock would include increased use values (e.g., consumptive and non-consumptive use values related to commercial and recreational fishing) and non-use values (e.g., existence values) for current and future generations. There are many potential socioeconomic impacts that could result from changes in striped bass management, notably potential implementation of seasonal closures. These potential changes may result in short-term negative impacts to recreational angler welfare. However, the net positive long-term social and economic benefits stemming

[1] FMP standard refers to a management measure specified in the FMP.

from stock recovery and subsequent catch increases in successive years will likely outweigh the short-term impacts. Potential restrictions on how and when states can pursue CE programs could result in socioeconomic impacts if there is less flexibility to implement alternative regulations tailored to the needs of each state's fisheries.

1.2 DESCRIPTION OF THE RESOURCE

1.2.1 Species Life History

1.2.1.1 Stock Structure and Geographic Range

Atlantic coastal migratory striped bass inhabit estuaries and the Atlantic Ocean along the eastern coast of North America from the St. Lawrence River in Canada to the Roanoke River and other tributaries of Albemarle and Pamlico Sounds in North Carolina (Merriman, 1941). Some individuals from longer river systems within this range may not undergo coastal migrations, but rather restrict their migrations to within the river and estuary (Morris et al., 2003; Zlokovitz et al., 2003). Stocks which occupy coastal rivers from the Tar-Pamlico River in North Carolina south to the St. Johns River in Florida are primarily endemic and riverine and do not presently undertake extensive Atlantic Ocean migrations as do stocks from the Roanoke River north (Richkus, 1990), based on tagging studies (Callihan et al., 2014; Callihan et al., 2015). Striped bass are also naturally found in the Gulf of Mexico from the western coast of Florida to Louisiana (Merriman, 1941; Musick et al., 1997). Striped bass were introduced to the Pacific Coast using transplants from the Atlantic Coast in 1879 as well as into rivers, lakes, and reservoirs throughout the US and foreign countries such as Russia, France, and Portugal (Hill et al., 1989).

The anadromous populations of striped bass on the Atlantic coast are primarily the product of four distinct spawning stocks: an Albemarle Sound-Roanoke River stock, a Chesapeake Bay stock, a Delaware River stock, and a Hudson River stock (ASMFC 1998). The Atlantic coast fisheries rely primarily on production from the spawning populations in the Chesapeake Bay and in the Hudson and Delaware rivers. Historically, tagging data indicated very little mixing between the Albemarle Sound-Roanoke River stock and so that stock is managed and assessed separately from the coastal stock.

The Chesapeake Bay stock of striped bass is widely regarded as the largest of the four major spawning stocks (Goodyear et al. 1985; Kohlenstein 1980; Fabrizio 1987). Recent tag-recovery studies in the Rappahannock River and upper Chesapeake Bay show that larger and older (ages 7+) female striped bass, after spawning, move more extensively along the Atlantic coast than stripers from the Hudson River stock (ASMFC 2004).

Striped bass abundance in the Delaware River, as measured by juvenile seine surveys, rose steadily following pollution abatement during the mid-1980s and peaked in abundance in 2003 and 2004. Like the Chesapeake Bay and Hudson stocks, spawning in the Delaware River begins during early April and extends through mid-June (ASMFC 1990). Recent tagging studies in the Delaware River show that larger and older (ages 7+) female striped bass undergo extensive

migration northward into New England from July to November that spatially overlap the migratory range of Chesapeake Bay striped bass (ASMFC 2004).

1.2.1.2 Age and Growth

Generally, longevity of striped bass has been estimated as 30 years, although a striped bass was aged to 31 years based on otoliths (Secor 2000). This longevity suggests striped bass populations can persist during long periods of poor recruitment due to a long reproductive lifespan. In general, the maximum ages observed have increased since 1995 when the striped bass fisheries reopened. From 1995 to 2016, the maximum observed female age increased from 16 to 31, with the oldest fish caught in Chesapeake Bay, Virginia, in 2014. During the same period, the maximum observed male age increased from 16 to 24 with the oldest fish caught in Chesapeake Bay, Virginia, in 2011.

As a relatively long-lived species, striped bass are capable of attaining moderately large size, reaching as much as 125 pounds (57 kg) (Tresselt 1952). Growth rates of striped bass are variable, depending on season, age, sex, competition and location. For example, a 35 inch (889 mm) striped bass can be 7 to 15 years of age and a 10-pound (4.5 kg) striped bass can be 6 to 16 years old (ODU CQFE 2006). Growth occurs during the seven-month period between April and October. Within this time frame, striped bass stop feeding for a brief period just before and during spawning, but feeding continues during the upriver spawning migration and begins again soon after spawning (Trent and Hassler 1966). Growth rates and maximum size are significantly different for males and females. Both sexes grow at the same rate until 3 years old; beginning at age-4, females grow faster than males. Females grow to a considerably larger size than males; striped bass over about 30 pounds (14 kg) are almost exclusively female (Bigelow and Schroeder 1953).

1.2.1.3 Spawning and Reproduction

Atlantic striped bass are anadromous, meaning they spend most of their adult life in ocean waters, but return to their natal rivers to spawn in the spring. The rivers that feed into the Chesapeake Bay and the Delaware and Hudson Rivers are the major spawning grounds for the coastal migratory population. The spawning season along the Atlantic coast usually extends from April to June and is governed largely by water temperature (Smith and Wells 1977) and the number of mature ova in female striped bass varies by age, weight, and fork length. Studies have found that older fish produce more eggs than younger fish and heavier fish produce more eggs than smaller fish (Jackson and Tiller 1952; Raney 1952; Goodyear 1984; Mihursky 1987; Richards et al. 2003; Sadler et al. 2006; Gervasi et al. 2019). Newly hatched bass larvae remain in fresh or slightly brackish water until they are about 12 to 15 mm long and move in small schools toward shallow protected shorelines, where they remain until fall. Over the winter, the young concentrate in deep water of rivers.

The 2018 assessment used maturity-at-age values derived from an updated dataset with samples from multiple states along the coast, which estimated that 89% of females are mature by age-8 and 100% are mature by age-9. There are indications that some older striped bass may not spawn every year (Raney 1952) and Jackson and Tiller (1952) reported curtailment of

spawning in about 1/3 of the fish age-10 and older taken from Chesapeake Bay, though they also found striped bass up to age-14 in spawning condition.

Striped bass, like many fish populations, shows high interannual variability in recruitment. Environmental effects have been shown to be correlated with recruitment success in striped bass, including over-winter temperatures, hydrological conditions, and zooplankton prey availability (Hurst and Conover 1998; Martino and Houde 2010 and 2012). However, Martino and Houde (2012) found density-dependent effects on growth and mortality in the upper Chesapeake Bay for age-0 striped bass, where growth rates were higher and mortality rates lower in years with lower juvenile density.

1.2.1.4 Mortality

Because striped bass are a long-lived species, this suggests natural mortality is relatively low. One increasing source of natural mortality is disease. Mycobacteriosis was first detected in the Chesapeake Bay in 1997 (Heckert et al 2001; Rhodes et al. 2001) and may have been apparent in Chesapeake Bay striped bass as early as 1984 (Jacobs et al. 2009a). A rise in *mycobacterium* infection in the Chesapeake Bay could be causing increases in natural mortality (Pieper 2006; Ottinger and Jacobs 2006). Vogelbein et al. (2006) hypothesized that increased natural mortality could be associated with elevated nutrient inputs to the Chesapeake Bay contributing to eutrophication and suboptimal, stressful habitat for striped bass; or, the increased natural mortality could be associated with low abundance of Atlantic menhaden and reductions in Chesapeake Bay forage species resulting in starvation.

Prevalence of *mycobacterium* infection ranges from ~50% (Overton et al. 2003) to 75% with molecular techniques (Kaattari et al. 2005) and is dependent on the age class sampled, with prevalence increasing with age to approximately age 5 and then decreasing in older ages (Kaattari et al. 2005; Gauthier et al. 2008). *Mycobacteriosis* appears to be much less prevalent in other producer areas such as the Delaware Bay (Ottinger et al. 2006) and the Albemarle Sound-Roanoke River (Overton et al. 2006; Matsche et al. 2010). Although fish who are infected with the disease show overall decreased health (Overton et al. 2003), the slow progression of the disease may take years to become lethal in infected fish, thus allowing for multiple spawning opportunities, making determination of the population level impacts of the disease difficult (Jacobs et al. 2009b). In the most recent study, Groner et al. (2018) suggested disease-associated mortality will likely increase with warming temperatures in the Chesapeake Bay.

Striped bass exhibit a number of characteristics identified by NOAA as increasing their vulnerability to climate change effects, including complexity of reproductive strategy, short duration aggregate spawning, sensitivity to temperature, prey-specificity, and specific larval requirements (Morrison et al. 2015). Temperature is correlated with or impacts a number of aspects of striped bass biology, including time to hatch and egg and larval mortality (Massoudieh et al. 2011); larval growth length and yolk utilization (Peterson et al. 2017); activity levels and metabolic rate (Hollema et al. 2017); consumption, and growth (Secor et al. 2000); and growth and mortality in striped bass larvae (Secor et al. 2017). See *Section 1.4.3* for details on climate change impacts to striped bass habitat.

1.2.1.5 Ecological Roles

Young-of-year striped bass feed primarily on small invertebrates like amphipods, bristle worms, and mysid shrimp. As they get older, they start eating fish and larger invertebrates (starting around age-2). Adult striped bass consume a variety of species, including Atlantic menhaden, herring, bay anchovies, blue crabs, and lobster (Schaefer 1970; Hartman and Brandt 1995; Walter et al. 2003; Rudershausen et al. 2005; Ferry and Mather 2012). Their diet varies depending on how big they are, what season it is, where they are feeding, and how abundant their different prey species are (Walter and Austin 2003; Overton et al. 2009). Striped bass are also preyed on by other species. As young-of-year and juveniles, they are consumed by adult fish like bluefish, weakfish, and even other striped bass, and larger striped bass may be eaten by sharks or birds like bald eagles and osprey (ASMFC 2011).

Managers and stakeholders have expressed interest in the role of striped bass in the ecosystem from both a top-down perspective (as a predator that could affect other species) and a bottom-up perspective (as a consumer that was affected by prey availability). The high abundance of striped bass in the late 1990s and early 2000s led to concerns that striped bass could have a negative impact on other species that they preyed on, like shad and river herring, or that they competed with for food, like weakfish (Uphoff 2003; Davis et al. 2012). Declines in striped bass condition and the increasing prevalence of mycobacteriosis in Chesapeake Bay raised concerns that the depletion of key prey species like Atlantic menhaden were negatively affecting striped bass (Jacobs et al. 2009; Overton et al. 2003).

In August 2020, ASMFC adopted an ecosystem approach for the management of Atlantic menhaden using ecological reference points (ERPs) for menhaden management. Ecological modeling indicated striped bass were one of the most sensitive species to menhaden abundance. Therefore, the ERP values that sustained striped bass would likely provide sufficient forage for other predators under current ecosystem conditions. ERPs for the management of Atlantic menhaden are as follows:

- ERP target: The maximum fishing mortality rate on Atlantic menhaden that sustains Atlantic striped bass at their biomass target when striped bass are fished at their F target
- ERP threshold: The maximum fishing mortality rate on Atlantic menhaden that keeps Atlantic striped bass at their biomass threshold when striped bass are fished at their fishing mortality rate target.

These ERPs allow ASMFC to take into account menhaden's role as a forage fish, especially its importance to striped bass, when setting harvest limits for menhaden. However, the biological reference points for striped bass are still set using single-species modeling. ASMFC is working on refining the ERP model and improving the understanding of the role of striped bass in the ecosystem beyond the relationship with menhaden.

1.2.2 Stock Assessment Summary

The 2018 Benchmark Stock Assessment (NEFSC 2019) provides the most recent status of the coastwide striped bass stock for use in fisheries management. The assessment was peer-reviewed at the 66th Northeast Regional Stock Assessment Review Committee (SARC) meeting in November 2018 and approved by the Board for management use in May 2019. The accepted assessment model is a forward projecting statistical catch-at-age (SCA) model which uses catch-at-age data and fishery-dependent and -independent survey indices to produce annual estimates of recruitment, annual fishing mortality (F), and selectivity parameters in order to calculate abundance and female SSB through the assessment terminal year of 2017. As a complement to the SCA model, an instantaneous tag return model (IRCR) was run on data from the U.S. Fish and Wildlife Service (USFWS) coastwide striped bass tagging program through the 2017 tagging year. The IRCR model makes inferences using the numbers of tagged fish that have been recaptured to the numbers of fish that were originally tagged over time to estimate the survival rate of striped bass from year-to-year, fishing mortality rates and natural mortality rates.

The 2018 benchmark was the first assessment for striped bass to use the improved MRIP survey methods to estimate recreational fishery catches. The new time series of recreational catch estimates is on average 2.3 times higher than the values used in previous stock assessments, resulting in higher estimates of stock size. Although the magnitude of these estimates has changed, the overall trend throughout time remains similar for both harvest and total catch (released fish + harvested fish).

1.2.2.1 Abundance and Structure

Striped bass abundance (age-1+) increased steadily from 1982 through 1997 when it peaked around 420 million fish. Total abundance fluctuated without trend through 2004 and from 2005-2009, total abundance declined to around 189 million fish. Total abundance increased to 351 million fish by 2016 before dropping to 249 million fish in 2017. The increase in 2012 was due primarily to the abundant 2011 year class from Chesapeake Bay. Abundance of age-8+ striped bass (representing mature fish) increased steadily through 2004. Between 2004 and 2011, age-8+ abundance oscillated followed by a decline since 2011. Age-8+ abundance in 2017 was estimated at 6.7 million fish, a value near the 30th percentile of the time-series.

1.2.2.2 Fishing Mortality

The current single-stock SCA model separates fishery removals into an ocean fleet and a Chesapeake Bay fleet, but there is one set of coastwide fishing mortality reference points. The ocean fleet includes removals from ocean waters and other areas such as Delaware Bay and Long Island Sound. Fully-recruited fishing mortality in 2017 for the Chesapeake Bay and Ocean fleets was 0.068 and 0.262, respectively. Total fishing mortality has been at or above the threshold in 13 of the last 15 years of the assessment (2003-2017) and was estimated to be 0.31 in 2017.

1.2.2.3 Recruitment

Striped bass experienced a period of strong recruitment (age-1 fish entering the population) from 1994-2004, followed by a period of lower recruitment from 2005-2011 (although not as low as the early 1980s, when the stock was considered collapsed). This period of low recruitment contributed to the decline in female SSB that the stock has experienced since 2010. Recruitment of age-1 fish was high in 2012, 2015, and 2016 (corresponding to strong 2011, 2014, and 2015 year classes), but estimates of age-1 striped bass were below the long-term average in 2013, 2014, and 2017. Recruitment in 2017 was estimated at 108.8 million age-1 fish, below the time series average of 140.9 million fish.

1.2.2.4 Female Spawning Stock Biomass (SSB)

Female SSB peaked in 2003 and has been declining since then; female SSB has been below the threshold level since 2013. Female SSB grew steadily from 1986 through 1996 after which female SSB dropped to just below levels observed in 1995. Female SSB grew steadily between 1999 and 2003 when it peaked around 114,000 thousand metric tons and has generally declined since then.

1.2.2.5 Two-Stock Model Development

Although the coastwide fishing mortality reference points include the effects of harvesting smaller striped bass in the Chesapeake Bay (and in other areas like the Delaware Bay and Hudson River), they do not reflect the heavily male-skewed sex ratio in the Chesapeake Bay catch. During the 2018 benchmark assessment, the current single-stock SCA model was modified into a competing two-stock SCA model; a Chesapeake Bay stock and a mixed ocean stock which included all other stock components of the population. The intent of the two-stock model approach was to develop separate reference points for the Chesapeake Bay stock and the ocean region (which includes the Delaware Bay/Hudson River stock complex); however, this model requires further testing and was not approved for management by the SARC-66 peer review panel.

1.2.3 Current Stock Status

The current stock status determination is based on the 2018 Atlantic Striped Bass Benchmark Stock Assessment (NEFSC 2019). The results of the 2018 benchmark indicate that the Atlantic striped bass stock is overfished and overfishing is occurring. Female SSB in 2017 was estimated at 68,576 metric tons (151 million pounds), which is below the female SSB threshold of 91,436 metric tons (202 million pounds) (Figure 6). Total fishing mortality in 2017 was estimated at 0.31, which is above the fishing mortality threshold of 0.24 (Figure 7). The reference points currently used for management are based on stock conditions in 1995, the year the stock was declared rebuilt. The biomass threshold is the level of female SSB in 1995, the biomass target is 125% of the threshold, and the fishing mortality threshold and target are the levels of fishing mortality projected to achieve the biomass reference points over the long-term, respectively. The specific values of these reference points change when the time series of female SSB is updated with each iteration of the stock assessment model.

1.3 DESCRIPTION OF THE FISHERY

The Atlantic striped bass fishery is predominantly recreational with the recreational sector accounting for over 80% of total removals by number each year since 1985 (Table 12). In 2019, total removals (commercial and recreational combined, including harvest and dead releases) were estimated at 5.5 million fish; the recreational sector accounted for 87% of total removals by number. In 2020, total removals were estimated at 5.1 million fish; the recreational sector accounted for 87% of total removals by number (Table 11-12).

1.3.1 Commercial Fishery

Commercial striped bass fisheries operate in the waters of Massachusetts, Rhode Island, New York, Delaware, Maryland, the Potomac River Fisheries Commission, Maryland, Virginia, and North Carolina. The primary gear types for the commercial fisheries are gill nets, hook and line, and pound nets/other fixed gears. Additional gears used in the commercial fishery include haul seines and trawls.

The commercial fishery is managed via a quota system resulting in relatively stable landings since Amendment 6 (approved in 2003; implemented in 2004). From 2004 to 2014, coastwide commercial harvest averaged 6.8 million pounds (942,922 fish) annually (Tables 13-15). From 2015-2019, commercial landings decreased to an average of 4.7 million pounds (619,716 fish) due to implementation of Addendum IV and a reduction in the commercial quota. Commercial landings in 2020 were estimated at 3.6 million pounds (577,363 fish). Commercial discards are estimated to account for <2% of total removals per year since 2003 (Tables 12). In 2019, commercial removals (landings plus commercial discards) accounted for 13.5% of total removals (commercial plus recreational) in numbers of fish, and 12.6% of total removals in 2020.

There are two sets of quota allocations; one to all states (Maine through North Carolina, excluding Pennsylvania) for harvest in the ocean, and a second allocation to Maryland, PRFC, and Virginia for harvest in Chesapeake Bay. The ocean region quota is based on average landings during the 1970s and the Chesapeake Bay quota changed annually under a harvest control rule until implementation of a static quota in 2015 through Addendum IV. Although the regional quota allocations are about equal, the majority of commercial harvest comes from Chesapeake Bay; roughly 60% by weight and 80% in numbers of fish since 1990. The differences between landings in weight and in numbers of fish are primarily attributed to the availability of smaller fish and lower size limits in Chesapeake Bay relative to the ocean fishery. Additionally, the ocean fishery tends to underutilize its allocations due to lack of availability in state waters (particularly off of North Carolina) and because commercial fishing is not allowed in some states (Maine, New Hampshire, Connecticut and New Jersey). Furthermore, the underage has increased in recent years since migratory striped bass have not been available to the ocean fishery in North Carolina resulting in zero harvest since 2012 (North Carolina holds 13% of the ocean quota).

1.3.2 Recreational Fishery

The recreational fishery is comprised of private and for-hire components. The private component includes anglers fishing from shore (including all land-based structures) and private/rental boats. The for-hire component is composed of charter boats and headboats (also called party boats). Although charter boats tend to be smaller than headboats, the key distinction between the two types of operations is how the fee is typically determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

The recreational sector operates in state waters across the entire management unit (Maine through North Carolina) and uses hook and line almost exclusively. The recreational fishery is managed via bag and size limits and therefore recreational catch and harvest vary from year to year with changes in angler effort and the size and availability of fish.

Recreational harvest of striped bass follows a similar trend to the commercial harvest. Since 1984 when recreational harvest was lowest (2.4 million pounds; 264,004 fish), recreational harvest has increased reaching a peak by weight in 2013 at 65 million pounds, and by numbers of fish in 2010 at 5.4 million fish (Tables 16-18). Between 2004 and 2014, recreational harvest remained at a steady level averaging 54.8 million pounds (4.6 million fish) per year. Following the implementation of the size and bag limit changes in the recreational fisheries in Addendum IV due to declining biomass, recreational harvest decreased to an average of 33.6 million pounds (2.8 million fish). In 2020, recreational harvest was estimated at 14.9 million pounds (1.7 million fish).

A large proportion of recreational harvest comes from Chesapeake Bay (Tables 16-18). From 2004-2014, 33% of recreational harvest in numbers of fish came from Chesapeake Bay. From 2015-2019, that percentage increased to 43% in numbers of fish, likely as a result of the strong 2011, 2014, and 2015 year classes moving through the fishery. The majority of recreational harvest in the ocean fishery comes from Massachusetts, New York, and New Jersey.

The vast majority of recreational striped bass catch is released alive either due to angler preference or regulation; roughly 90% annually since 1990 (Figure 12). Based on peer reviewed literature, a 9% release mortality rate is used to estimate the number of fish that die as a consequence of being caught and released. Despite this low rate, the popularity of striped bass as a targeted recreational species means that recreational releases contribute a significant source of mortality to the stock each year. In 2020, recreational anglers caught and released an estimated 30.7 million fish, of which 2.76 million (9%) are assumed to have died; this represents 54% of total striped bass removals (commercial and recreational) in 2020 (Tables 12, 16).

1.3.3 Subsistence Fishing

Data describing the exact magnitude of subsistence fishing, (i.e., catching fish in order to provide necessary food) for striped bass does not exist. However, some anglers, usually fishing

from shore, may rely to some degree on striped bass they catch for food. Additionally, the head and carcasses of larger striped bass often discarded by anglers after processing the fillet are highly sought after in some areas.

1.3.4 Non-Consumptive Factors

Catch and release fishing for striped bass is often considered a non-consumptive use of the striped bass resource. A large number of fishermen coastwide target striped bass with the intention of releasing all of the fish that are caught. This practice can take place during no-harvest (i.e., no-take) closures, but is not permitted during no-targeting closures. See *Section 1.3.2* for more details on the number of striped bass released alive.

1.3.5 Interactions with Other Fisheries

In the recreational fishery, anglers targeting striped bass may also be targeting species that commonly occur with striped bass. Or, striped bass anglers may incidentally interact with non-target species. The 2018 stock assessment (NEFSC 2019) included analysis identifying recreational species that are commonly caught with striped bass in ocean waters (i.e., species that were intercepted at least 100 times over the entire time series) for each state based on private/rental boat trip data that occurred during Waves 3-5 for states from Maine through Virginia. A Jaccard coefficient was calculated for each species, with a higher coefficient indicating the species is caught more often with striped bass. For most states, bluefish or Atlantic mackerel had the highest Jaccard coefficient, meaning it was the species caught most often with striped bass in ocean waters.

Striped bass are caught as bycatch in non-striped bass commercial fisheries. The commercial discard estimates for striped bass incorporate estimated discards from non-striped bass fisheries based on tag return data.

1.4 HABITAT CONSIDERATIONS

1.4.1 Habitat Use and Migration Patterns

Migration of striped bass occurs at adult and juvenile stages. Adults migrate into rivers to spawn in turbulent fresh water upstream of the estuarine turbidity maximum (ETM) and as far as the Fall Zone (transition zone from Coastal Plain to Piedmont provinces) during spring (Greene et al., 2009). Afterwards, migratory adult striped bass return to the ocean, where they travel north along the coast in summer and fall, and south during the winter; non-migratory adult striped bass return downstream to estuarine waters but do not transit coastal waters during the summer, fall, and winter (Greene et al., 2009).

In general, juveniles migrate downstream in summer and fall. Juvenile striped bass migration varies by locations. In Virginia, the movement of young bass during their first summer is downstream into Chesapeake Bay waters of higher salinity (Setzler et al., 1980). In the Hudson

River, striped bass begin migrating in July. Migration was documented through an increase in the number of juvenile striped bass caught along the beaches and subsequent decline in the numbers in the channel areas after mid-July. Downstream migration continues through late summer, and by the fall, juveniles start to move into Long Island Sound (Raney, 1952). The ASMFC Striped Bass Technical Committee (TC) tracks juvenile abundance, and cohort strength, through sampling to produce annual striped bass juvenile abundance indices (JAIs) in six different nursery areas.

Juvenile striped bass rarely complete coastal migrations. The presence of juveniles <20 cm (ages 0-1) in New Jersey's non-natal estuaries indicates some dispersal from Hudson River, Delaware Bay, and Chesapeake Bay (via C&D Canal) estuaries where they were spawned (Able et al., 2012). Many striped bass inhabiting rivers and associated estuaries undergo evacuation into coastal waters following extreme precipitation events that reduce water temperature, salinity, and dissolved oxygen (Bailey & Secor, 2016); events projected to increase in frequency and intensity due to climate change (USGCRP, 2017). In Chesapeake Bay 50% of females, who grow faster, emigrate to coastal waters by age 3 while a significant proportion of young males remain within the estuary (Kohlenstein, 1981); however, emigration cues are under debate and may be more a function of size than age (Secor et al., 2020). From Cape Hatteras (and in some years, Cape Lookout), North Carolina, to New England, fish may migrate in groups along the coast. They migrate north in the summer and south in the winter, however, the extent of the migration varies between sexes and populations (Hill et al., 1989). Larger bass, typically the females, tend to migrate farther distances. Striped bass historically were not usually found more than 6 to 8 km offshore (Bain & Bain, 1982). In the past decade, large schools have been moving between state waters and federal Exclusive Economic Zone (EEZ) waters during the year (Kneebone et al., 2014) and further offshore during the winter months (ASMFC, MDDNR, NCDMF and USFWS, unpublished data) well out into federal EEZ waters (e.g., 25-30 nm, or 46.3 to 55.6 km). These coastal migrations are not associated with spawning and usually begin in early spring, but this time period can be prolonged by the migration of bass that are spawning.

Some areas along the coast are used as wintering grounds for adult striped bass. Historically the inshore zones between Cape Henry, Virginia, and Cape Lookout, North Carolina, served as the wintering grounds for the migratory segment of the Atlantic coast striped bass population (Setzler et al., 1980). Geographic Information Systems (GIS) analysis of cooperative winter tagging cruise data from 1988-2013 did not detect a northward latitudinal shift in highest percent capture of striped bass, although occurrence of a longitudinal shift was not included in the analysis (Osborne, 2018). However, recent Atlantic coastal striped bass winter sampling coordinated by ASMFC indicated that overwintering striped bass have been encountered north of Chincoteague Inlet, Virginia to Ocean City, Maryland and in offshore areas entering the EEZ. There are three or more groups of fish that are found in nearshore ocean waters of North Carolina, Virginia, and Maryland between the months of November and March, the wintering period. These groups include striped bass from Albemarle and Pamlico Sounds, North Carolina, Chesapeake Bay, and Hudson River (ASMFC, MDDNR, NCDMF and USFWS, unpublished data); and of these, large striped bass spend the summer in New Jersey and north (Holland & Yelverton, 1973; Nelson et al., 2010; Pautzke et al., 2010). Based on tagging studies conducted

under the auspices of ASMFC and the Southeast Area Monitoring and Assessment Program (SEAMAP) each winter since 1988, striped bass wintering off North Carolina, Virginia, and Maryland range widely up and down the Atlantic Coast, at least as far north as Nova Scotia, and represent all major migratory stocks (US Fish and Wildlife Service, ASMFC, and partners, unpublished data).

1.4.2 Identification and Distribution of Habitat

1.4.2.1 Spawning and Egg Habitat

Striped bass spawn in fresh water or nearly fresh water of Atlantic Coast rivers and estuaries. They spawn above the tide in mid-February in Florida but in the St. Lawrence River they spawn in June or July. The bass spawn in turbid areas as far upstream as 320 km from the tidal zone (Hill et al., 1989). The tributaries of the Chesapeake Bay are the primary spawning areas for the migratory stock of striped bass, but other major areas include the Hudson River, Delaware Bay, and the Roanoke River. Prior to spawning, females pause below the salt front (Hocutt et al., 1990) while eggs ripen and water temperature reaches 12-18 degrees Celsius (Secor, 2000) before continuing into freshwater reaches. Spawning is triggered by increased water temperature, occurs between 10 and 24 degrees Celsius, and generally peaks at temperatures between 14 and 19 degrees Celsius (Setzler et al., 1980). Spawning is characterized by brief excursions to the surface by females surrounded by males, accompanied by much splashing. Females release eggs in the water where fertilization occurs (Raney, 1952). Spawning occurs during all hours of day and night (Setzler et al., 1980). Striped bass spawning runs may be blocked when the concentration of total suspended solids exceeds 350 mg/L (Radtke & Turner, 1967).

An egg is only viable for about an hour for fertilization. Following fertilization, the fertilized eggs are spherical, non-adhesive, and semi-buoyant and will harden within one to two hours at 18 degrees Celsius (Hill et al., 1989). Survival of striped bass eggs is dependent on environmental conditions. In general, cooler and wetter winter and spring conditions are favorable. A temperature range of 17-19 degrees Celsius is important for egg survival as well as for maintaining appropriate dissolved oxygen levels (Bain & Bain, 1982), although they can tolerate a temperature range of 14-23 degrees Celsius (Mansueti, 1958). Eggs hatch from about 30 hours at 22 degrees Celsius to about 80 hours at 11 degrees Celsius (Hill et al., 1989). Eggs can tolerate dissolved oxygen levels down to 1.5 mg/L and salinities ranging from 0-10 ppt with 1.5-3 ppt being optimal (Mansueti, 1958). Water currents are an important factor for the survival of the eggs. Minimum water velocity of 30 cm/sec, from either current or tidal flow, is needed to keep the eggs suspended in the water column; the optimum flow rate is 100-200 cm/sec (Mansueti, 1958). An oil globule provides some buoyancy for the egg, and it is larger when water velocity is slower (Albrecht, 1964). Without the buoyancy, the eggs sink to the bottom, where the sediment may smother them. It is possible for the eggs to hatch if the sediment is course and not sticky or muddy, but survival is limited (Bayless, 1972). Suspended sediment loads ≥1,000 mg/L were lethal to striped bass eggs but were tolerant to loads of 0-500 mg/L (Auld & Schubel, 1978).

1.4.2.2 Larvae Habitat

There are three stages of larval development. These are: yolk-sac larvae, finfold larvae, and post-finfold larvae (Hill et al., 1989). The yolk-sac larvae occur right after hatching and the stage usually lasts for about 3 to 9 days. They are 2.0 to 3.7 mm in length and contain an easily identified yolk-sac. Yolk-sac larvae occur in open water at varying depths (Setzler et al., 1980). This phase is finished when the yolk-sac is absorbed. The finfold phase lasts for about 11 days and the striped bass reach a length of 12mm (Setzler et al., 1980). Occurrence of finfold larvae varied with time of day and depth (Hill et al., 1989). The last phase is the post-finfold larvae which lasts for about 20 to 30 days and the larvae reach a length of 20 mm (Bain & Bain, 1982). Post-finfold striped bass larvae are present at varying depths in open waters of estuaries.

Survival of the larvae depends on optimal conditions of three main factors: temperature, salinity, and dissolved oxygen. The optimal temperature for larvae is 18 to 21 degrees Celsius, but temperatures of 12 to 23 degrees Celsius can be tolerated (Bain & Bain, 1982). Studies have shown that striped bass larvae do better and have a higher survival rate when they are in low salinity waters (>0-15 ppt) rather than fresh water (Setzler et al., 1980). Abundance was highest in oligohaline portions of the St. Lawrence Estuary ETM zone; 60 times higher than in tidal fresh water and 330 times higher than in mesohaline ETM waters (Vanalderweireldt et al., 2019). The third factor, dissolved oxygen, is equally critical for larvae as it was for the egg stage. A reduction in the dissolved oxygen level reduces the chances of survival of the larvae (Turner & Farley, 1971), which have a lower limit of 3 mg/L (Chittenden, 1971). Poorly buffered rivers may have significant changes in pH. A pH of 5-6.5 in the absence of contaminants causes significant mortality to 11-13 day old fish and a pH of 5.5 is toxic to 159-day-old fish (Buckler et al., 1987). Another factor that influences the survival of striped bass larvae is turbulence. While at first it is necessary for the larvae to reside in turbulent waters to maintain position, the larvae quickly become motile and then are able to maintain position on their own (Doroshev, 1970). Optimum flow for larvae is 30-100 cm/sec although larvae can survive 0-500 cm/sec (Regan et al., 1968). Suspended sediment loads ≥500 mg/L had a significant negative effect on larval survival (Auld & Schubel, 1978).

1.4.2.3 Juvenile Habitat

Striped bass become juveniles at about 30 mm, when the fins are fully developed. At this point they resemble adults. Temperature tolerance for young-of-year striped bass 20-100 mm ranges from 10-30 degrees Celsius and 18-19 degrees Celsius is optimal (Bogdanov et al., 1967, as cited in Setzler, 1980). Salinity does affect striped bass' capacity to survive low temperatures. Young-of-year striped bass exposed to 5 degrees Celsius water had greater survival across a broad range of salinities (5-35 ppt); however, when exposed to 1 degree Celsius water young-of-year striped bass survival was greater within a narrower salinity range of 10-25 ppt (Hurst & Conover, 2002). Striped bass juveniles exhibit a warmwater fundamental temperature niche (Coutant, 2013); e.g., 80-270 mm (0.25-0.72 kg) fish selected 24-27 degree Celsius water (Coutant et al., 1984) and 430-626 mm (0.91-3.52 kg) fish occupied 20-24 degrees Celsius water (Coutant & Carroll, 1980). Juveniles can tolerate water up to 30-33.5 degree Celsius provided there is sufficient dissolved oxygen (Coutant, 2013). As the juvenile bass grow, they migrate to nearshore areas and then to higher salinity areas of an estuary (Raney, 1952) usually remaining

upstream of polyhaline waters (Able et al., 2012) optimally at 10-20 ppt (Bogdanov et al., 1967, as cited in Setzler, 1980). Young-of-year striped bass are less tolerant of low dissolved oxygen than larvae and egg, having a lower limit of 3 mg/l and optimally ≥6 mg/l (Bogdanov et al., 1967, as cited in Setzler, 1980). Juvenile striped bass often occupy waters having a clean sandy bottom, but they have also been found over gravel beaches, rock bottoms, and soft mud areas suggesting that they do not require specific microhabitat conditions (Bain & Bain, 1982; Hill et al., 1989). Association with emergent marsh banks is common throughout the year and especially during spring and fall and commonly with submerged channel embankments in summer (Able et al., 2012). They are usually found in schools of as many as several thousand fish. However, the location of the schools depends on the age of the fish (Hill et al., 1989) and season. Juveniles 21-46 cm (ages 2-5) were most abundant at depths of 5.5-9.1 m in New Jersey nearshore coastal waters (Able et al., 2012), but during winter in Chesapeake Bay juveniles are known to migrate into holes down to 30.5 m deep (Mansueti, 1954).

1.4.2.4 Adult Habitat

Mature adult striped bass in the migratory contingents leave the estuaries and migrate along the coast where they have lower temperature requirements and comparable dissolved oxygen requirements as juvenile bass (Bain & Bain, 1982). The fundamental thermal niche of striped bass ≥3.1 kg is cool water at 17.5 (mean) to 19 (mode) degrees Celsius (Bettoli, 2005). Temperatures 25-30 degrees Celsius could be tolerated for limited durations provided sufficient dissolved oxygen concentrations were present (>2 mg/l), although condition declined and higher mortality occurred for fish >10 kg (Coutant, 2013). Lower temperature boundary for activity is 0.1-1 degree Celsius; rapid temperature changes can be tolerated (Greene et al., 2009). Striped bass are tolerant of a broad range of salinities (0-35 ppt) and abrupt changes to salinity (Greene et al., 2009). Depths occupied range from 0.6-46 m although straying into deeper waters does occur (Greene et al., 2009). Tagging studies indicate that fish from all stocks range widely along the Atlantic Coast, historically generally remaining in state (0-3 miles) waters but more recently in some areas entering the EEZ (3-200 miles; Kneebone et al., 2014; ASMFC, MDDNR, NCDMF and USFWS, unpublished data). GIS analysis of tagging data from 1988-2013 detected a 3-11 m vertical shift to deeper water and a shift to coarser sand grain size associated with the highest percent capture (Osborne, 2018). While in coastal and estuarine waters, striped bass are associated with a variety of habitats including substrates composed of sand, gravel, rock, boulder, eelgrass, and mussel beds; subsurface features such as sand bars, troughs, gullies, and shallow bays; floating rockweed; sandy and rocky shorelines; and in the surf zone (Greene et al., 2009).

1.4.3 Chemical, Biological, and Physical Threats to Striped Bass and Their Habitat

Residual chlorine; chlorinated hydrocarbons such as PCBs; monocyclic aromatic hydrocarbons such as benzene; and metals such as, copper, zinc, cadmium, mercury, and aluminum are known to be toxic to life history stages of striped bass. Residual chlorine causes 50% mortality in eggs when the concentration is 0.22 ppm, and there is 50% mortality in larvae when the concentration is 0.20 ppm (Hill et al., 1989). Chlorine was also observed to be a predominant factor in egg mortality by Hall et al. (1981). Ozone is an effective substitute for chlorine to

reduce fouling (Marine Research Incorporated, 1976). Studies have shown that ozone has a detrimental effect on striped bass eggs (Kosak-Channing & Helz, 1979). Eggs exposed to 0.05 mg/L and 0.10 mg/L of ozone in an estuarine environment were delayed in hatching, but only 70% of the eggs hatched in fresh water under the expected time frame. There was 6% mortality when the eggs were exposed to 0.06 mg/L of ozone for 12 hours, but there was 100% mortality when they were exposed for 36 hours. Effects of ozone and chlorine on striped bass eggs are comparable in estuarine waters, but ozone can have more of an effect if discharged in fresh water located near striped bass spawning areas (Hall et al., 1981). Exposure to sublethal levels of benzene for 24 hours increases the respiratory rates of juveniles and if they are exposed for longer periods of time, reversible narcosis can occur (Brocksen & Bailey, 1973). Chronic exposure to benzene can also result in difficulty locating and consuming prey (Korn et al., 1976). When striped bass are exposed to 6.9 ppm of benzene for 24 hours there is 50% mortality in juveniles (Benville & Korn, 1977). Copper and zinc have an effect on yolk-sac larvae, but eggs are unaffected by these metals. Juveniles can develop lesions in their gill tissue as well as impaired respiration when they are exposed to cadmium and mercury. Low pH increases the toxicity of aluminum (Rago, 1992) and high aluminum levels can severely alter epidermal microridge structures in larvae (Rulifson et al., 1986).

Increased attention is focused on emerging contaminants such as endocrine disruptors (pharmaceuticals, pesticides, industrial compounds, and personal care products), microplastics, and automotive derived compounds. Endocrine disruption of striped bass has not been studied; however, it is known to cause increased disease susceptibility, intersex (Blazer et al., 2007), and altered sexual development (Oberdörster & Oliver, 2001) in fishes. Microplastics are known to enter trophic pathways through ingestion (Au et al., 2017; Bergmann et al., 2015; Bour et al., 2020; Parker et al., 2020) as are nanoplastics through inhalation and gill uptake (Tetra Tech, 2020). Modeling efforts are underway to understand trophic pathways of microplastics exposure and accumulation in striped bass; however, study of potential physiological and behavioral effects is lacking (Tetra Tech, 2020). Striped bass response to automotive derived contaminants has not been studied, although road runoff has the capacity to cause abnormal behavior and physiological change (Chow et al., 2019; McIntyre et al., 2018).

Historically, physical threats to striped bass habitat were attributed to channelization, creation of dams, and land reclamation. In coastal regions, 50% of the original estuarine areas important to striped bass have been lost to filling, road construction, or real estate development (Clark, 1967; Kennish, 2002). In the South Atlantic region, dams restrict the upstream migration on the Roanoke, Tar, Neuse, and Pee Dee rivers (Baker, 1968). Efforts have been undertaken to restore access to historical striped bass spawning habitats through the provision of fishways or through removal of impediments to migration. Contemporary threats to striped bass access to spawning and nursery habitat include alteration of river flow regime by consumptive uses such as agriculture and manufacturing as well as dam operation (Cimino et al., 2009). Furthermore, access to aquatic habitats is largely driven by precipitation. Elevated spring precipitation and river flow increases volume of spawning and nursery habitat available to striped bass (Secor et al., 2017). Heavy winter and spring precipitation events in the northeast and eastern US

continue to increase in frequency and intensity coupled with a northward shift in the rain-snow transition zone (USGCRP, 2017).

Change in water temperature may be localized such as from industrial discharge or regional resulting from climate change. The localized heated water discharged from many power plants can cause thermal shock in the fish with the severity depending on the life stage (Schubel et al., 1976). Eggs are more sensitive and subject to greatly mortality from the high temperatures. Larvae and juveniles decrease in their susceptibility as they grow older, and there is not usually higher than 50% mortality of thermal shock in adults (Hill et al., 1989). Regionally, climate change has the potential to alter temperature and precipitation dynamics which directly affects timing of spawning migration as well as survival, growth, and habitat suitability throughout the year. In Chesapeake Bay, spawning female striped bass migration was earlier when spring water temperature was warmer (~3 days per 1 degree Celsius increase); this trend was more evident for larger females (Peer & Miller, 2014). Model projections for Hudson River spawning indicate occurrence up to 15 days earlier (Nack et al., 2019). Suitable temperatures, precipitation and flow, and prey availability directly affect larval striped bass survival (Martino & Houde, 2010; Millette et al., 2019); the temporal and spatial match of which are subject to disruption by climate change (Cimino et al., 2009). Increased winter temperatures may facilitate feeding efficiency, increase growth, and improve juvenile overwinter survival (Cimino et al., 2009); conversely warming of summer estuarine waters subjected to decreased dissolved oxygen will reduce available juvenile and adult summer habitat (Constantini et al., 2008). Striped bass occupied normoxic Patuxent River (Chesapeake Bay) waters at supraoptimal temperatures up to 31 degrees Celsius because of higher growth rate potential within the tributary (Kraus et al., 2015). The disease mycobacteriosis coupled with elevated summer sea surface temperature (>26 degree Celsius) appears to have a negative effect on striped bass survival in Chesapeake Bay (Groner et al., 2018). Climate warming conditions that raise estuarine and riverine surface water temperatures above 28 degrees Celsius concurrent with hypoxic bottom waters would expose striped bass to annual summer temperature-oxygen squeeze conditions that could limit growth and production (Constantini et al., 2008).

Since colonial times, conversion of forests and wetlands to agricultural, suburban, and urban uses has contributed to increased eutrophication and resultant hypoxic and anoxic conditions in the Chesapeake Bay watershed (Brush, 2009; Kemp et al., 2005) as has happened in many other watersheds. Hypoxic coastal waters reduce the extent of suitable fish habitat. Temperature-oxygen squeeze habitat conditions have been observed in Chesapeake Bay during summer and fall and where striped bass sought to avoid waters >27 degrees Celsius (Itakura et al., 2021). Hypoxia is common in coastal waters receiving inputs of anthropogenic derived nutrients (Hagy et al., 2004); particularly when those waters have strong density stratification, low tidal energy, and high surface temperatures during seasons where oxygen levels are already low (Breitburg, 2002). A contributing factor to hypoxia is the extent of impervious surface within the watershed where increases in impervious surface are associated with increased probability of hypoxic waters and reduced likelihood of young-of-year striped bass presence (Uphoff et al., 2011). In Chesapeake Bay, the volume of suitable juvenile and adult striped bass summer habitat has contracted as the volume of hypoxic water has increased (Cimino et al., 2009). Expansive

hypoxia coupled with warming water temperatures due to climate change will further reduce future summer habitat available to striped bass (Coutant, 1990).

Conversion of forested and wetland areas to agricultural, suburban, and urban uses are known to affect aquatic systems through increase of factors such as runoff volume and intensity; physical instability, erosion, and sedimentation; thermal pollution; contaminant loads including endocrine disruptors and microplastics; road salt; nutrients through nonpoint and direct discharges, sewage leaks and spills, and stormwater runoff; and disruption of organic matter dynamics. Watershed development associated with urban sprawl and population growth has resulted in significant impairment of striped bass habitat in Chesapeake Bay due to sedimentation, eutrophication, contaminants, flow alteration, and thermal pollution (Cimino et al., 2009). Increased urbanization is associated with increased mobilization of contaminants in runoff (Kaushal et al., 2020) which will be exacerbated by increasingly common and intense rain events. Percent impervious surface is a commonly used indicator of watershed development whereby 10% is a threshold for aquatic ecosystem deterioration (Cappiella & Brown 2001; Beach 2002). In essence, a watershed's percent impervious surface is a catchall index of aquatic habitat condition. Watershed percent impervious surface has been used to assess suitability of striped bass spawning and nursery habitat in Chesapeake Bay tributaries (Uphoff et al., 2011; Uphoff et al., 2020).

1.4.4 Habitat Management as an Element of Ecosystem Management

Migratory striped bass require a broad geographic range to complete their life cycle; consequently, the ecosystems used are vast and variable and the cooperative management approach embodied by ASMFC is necessary. Attempts to incorporate ecosystem management into fisheries management are increasing. Ecosystem management can be interpreted as a) the consideration of how the harvest of one species might impact other species in an ecosystem and incorporating that relationship in management decisions and b) the incorporation of the protection and enhancement of habitat features that contribute to fish production into the fishery management process. While the implementation of multispecies management is increasingly common, incorporation of habitat condition in the management framework and decision-making process is rare.

Biologists, fisheries managers, and fishermen all recognize that habitat quality is one of the keys to maintaining and improving fish stocks for harvest. Increasing demands for seafood and recreation requires that fisheries regulations provide for maximizing yield, minimizing bycatch, and rebuilding and maintaining adequate spawning stocks. Effective fishery management requires more than issuing regulations governing sizes, seasons and catch limits. Degraded habitat negatively affects aquatic communities necessary to support fish life, reduces levels of fish, and inhibits management to provide adequate fish for food or recreational experiences.

Fisheries managers recognize that provisions must be made for agriculture, housing, commerce, and transportation that support our present and growing population; however, components of an unaltered watershed including forested uplands, wetlands, and tidal and

nontidal streams are integral for maintaining suitable fish habitat. By 2020 the terrestrial portions of Chesapeake Bay watershed comprised 17% actively used for agriculture, 11% had been developed, and 60% was forested (Chesapeake Conservation Partnership, 2020). These watershed wide percentages are not uniformly distributed among spawning tributaries. For example, the Potomac River is estimated at 26% agriculture and 26% developed, the Choptank River is estimated at 48% agricultural and 10% developed, and the James River is estimated to be 14% agricultural and 11% developed (Chesapeake Bay Program as cited in Chesapeake Bay Foundation, 2021). Population within the Chesapeake Bay watershed will increase from 18 million in 2020 to a projected 22.5 million by 2050 and with it an estimated additional 570,000 acres or 1.3% of land area converted to developed land (Chesapeake Conservation Partnership, 2020). Inherent in land development is increased impervious surface, its veritable permanence, and resultant exacerbation of chemical, biological, and physical threats to striped bass habitat. As ecosystems are altered, production of coastal fishery resources is typically reduced.

Habitat management, as a tool of fisheries management, was traditionally practiced by installation and manipulation of physical structures in the water for the benefit of aquatic life, remediation of point source pollution, removal of stream blockages, and planting of streamside trees. These traditional practices have demonstrated benefit and continue to be employed. However, fisheries management must consider the myriad of impacts that result from land use change and implement environmental protection and restoration activities outside the traditional scope of fish management.

At the federal level, the coastal Regional Fisheries Management Councils' fisheries management plans (FMPs) and Federal EEZ FMPs all now are required to define Essential Fish Habitat (EFH) including Habitat Areas of Particular Concern (HAPC) and to be proactive in protecting it. A report to Congress by an Ecosystems Principles Advisory Panel, Ecosystem-Based Fishery Management (1999), recommended that Regional Management Councils develop Fisheries Ecosystem Plans that recognizes the interrelationships between species and the habitat needs of the managed species. The ASMFC FMP process has habitat protection as one of its objectives (ASMFC, 2019). Each of the cooperating states of the ASMFC should incorporate habitat protection recommendations in its state waters as an element of their fisheries management framework. However, state fisheries management agencies often lack jurisdiction to mandate measures to protect and conserve fish habitat. Variously named state and county departments of natural resources, environment, coastal resources, and health have the primary responsibilities for programs that protect, promote, and enhance environmental quality for residents and living resources. Fisheries management agencies must integrate their fish production objectives with activities of these habitat management agencies. For example, North Carolina has mandated the preparation and implementation of a Coastal Habitat Protection Plan, which requires the collaboration of the state's Coastal Management,

Environmental Management, and Marine Fisheries commissions.[2] Active involvement of fisheries management agencies in strategic planning, application of regulatory controls and permits that feature protection of environmental quality, and production of fish as objectives can provide for human needs while minimizing the impact on ecosystems.

1.5 IMPACTS OF THE FISHERY MANAGEMENT PROGRAM

1.5.1 Biological and Ecological Impacts

Options to address recreational release mortality through seasonal closures, gear restrictions, and/or education and outreach may reduce the number of striped bass released alive (through seasonal closures) or may increase the chance of survival of striped bass caught and released in the recreational fishery (through gear restrictions and education/outreach). Some seasonal closure options would offer additional benefit to the stock by reducing effort during seasons associated with higher post-release mortality rates or by protecting spawning or pre-spawn fish, which could contribute to stock rebuilding. Changes to the management triggers may affect how quickly and how often the fishing mortality rate, which is the rate at which striped bass are dying because of fishing, is adjusted.

1.5.2 Social and Economic Impacts

This Amendment includes several measures which could carry social and economic impacts, notably potential implementation of seasonal closures. Changes in spatial or seasonal closures, gear restrictions, bag and size limits, and other effort controls affect important attributes of a recreational fishing trip, such as the number of fish of each species that anglers catch and are allowed to keep. In turn, these changes in trip attributes will modify the utility (i.e., level of satisfaction) an angler expects to obtain from the fishing trip (McConnell et al. 1995, Haab and McConnell 2003). As a result, the angler may shift target species, modify trip duration or location, or decide not to take the trip and do something else instead. These behavioral responses lead to changes in directed fishing effort, with accompanying changes in harvest, fishing mortality, and angler welfare. This is, however, only a short-term response and stock dynamics will dictate any longer-term effects on the resource, which may subsequently feed back and affect future management decisions and angling behavior.

Assessing the fishery impacts and potential success of proposed policy measures requires a predictive model that links angler participation and decision-making to changes in management measures, stock levels, and fishing conditions. When data describing angler trip-taking, species targeting, and/or harvest decisions are available, fisheries economists can utilize bioeconomic models to assess the impact of changes in regulation on recreational fishing. Bioeconomic models seek to assess the total effect of changes in policy, immediate and future.

[2] See https://deq.nc.gov/about/divisions/marine-fisheries/public-information-and-education/habitat-information/chpp for more information.

Bioeconomic models combine an economic sub-model with a biological sub-model, which are linked via the impact of angler behavior and fishing mortality on stock dynamics. The integrated model is characterized by two-way feedback loops between fish stocks and angler decision-making in terms of participation, species targeting, and harvest. The number of trips, angler preferences for harvest and release, stock sizes, and regulations jointly determine fishing mortality which, in turn, impacts both future stock levels and future recreational fishing outcomes (Jarvis 2011, Lee at al. 2017). The economic sub-model uses anglers' preferences for different trip attributes to derive anglers' demand for recreational trips under alternative policy scenarios. The biological sub-model, typically an age-structured or size-structured population dynamics model in discrete time, specifies the effect of recreational fishing on the future structure and abundance of the population. Before conducting simulations under alternative policy scenarios, the integrated bioeconomic model can be calibrated such that the number of predicted trips under existing regulations corresponds to MRIP effort estimates (Lee at al. 2017, Holzer and McConnell 2017). The use of bioeconomic simulations allows for a wide range of analyses regarding policy options, often including novel regulatory alternatives, and provides both expected outcomes, in terms of stock abundances and angler welfare, as well as confidence levels around these outcomes.

Recent research into striped bass anglers' preferences and behavior illustrates the connection between regulatory policies and fishing effort while also providing information that could be used to operationalize a bioeconomic model for striped bass management in the future.

Murphy et al. (2019) surveyed striped bass anglers from Massachusetts, Connecticut, Virginia, and North Carolina, collecting data on angler motivations, attitudes, behavior and responses to alternative policy measures. The authors found that changes in size and bag limits led to changes in trip-taking, species targeting, and harvest decisions; these changes in behavior were correlated with angler characteristics such as consumptive orientation (i.e., different attitudes toward catching fish, keeping fish, catching large numbers of fish, and catching trophy fish) and that attitudes; and motivations of striped bass anglers were considerably diverse.

Carr-Harris and Steinback (2020) developed an angler behavioral model using stated preference choice experiment data collected from striped bass anglers from Maine through Virginia. The model was used to simulate trip-taking, harvest decisions, fishing mortality, and angler welfare across a range of alternative policy measures for anglers in Massachusetts, Rhode Island, and Connecticut, incorporating the impacts of fish size on angler behavior, utility, and resulting size- and sex-specific fishing mortality. The authors found that the range of economically efficient policies (i.e., policies that maximize angler welfare for a given level of recreational fishing mortality) was broad if managers were concerned with controlling recreational fishing mortality only, though considerably narrower if protecting female spawning stock was instead the primary management objective. Carr-Harris and Steinback (2020) note their behavioral model could be extended geographically and combined with a population dynamics sub-model to form an integrated bioeconomic model that would be capable of assessing feedbacks and long-run impacts of management decisions on anglers and the striped bass resource. Such an integrated model would allow the ASMFC to estimate the impact of alternative policy options (such as

those in draft Amendment 7), as currently done by the New England Fishery Management Council for the cod and haddock recreational fishery (Lee et al. 2017) (see *Section 6.3 Socio-Economic Research Needs*).

1.5.2.1 Striped Bass Fisheries and the Economy

A 2019 report from Southwick Associates[3] indicates 97% of the economic impacts associated with striped bass fishing came from the recreational sector in 2016. According to the report, total revenues in the commercial sector (from Maine to North Carolina) were $19.8 million that year, while total expenditures in the recreational sector amounted to $6.3 billion. The contribution of the commercial sector to the region's gross domestic product (GDP), when attempting to account for all industries involved in harvesting, processing, distributing, and retailing striped bass to consumers, was $103.2 million and supported 2,664 regional jobs. In comparison, the contribution of the recreational sector to the region's GDP was $7.7 billion and supported 104,867 jobs. Importantly, the report acknowledges that it is not intended to be used to set fishery regulations, but rather to demonstrate the economic significance of striped bass to local economies. It should also be noted that these numbers are for the entire region and actual economic impacts are expected to vary by state.

The dollar values above refer to economic impacts, not to the economic value (or net economic benefit for society) associated with the recreational and commercial fisheries. While data required to quantify these measures are not currently available, the effects of changes to the striped bass management program for recreational sector can be qualified as follows: further limitations on the size and number of fish that can be kept can lead to increased effort to retain a legal-sized fish and an increase in dead releases. Conversely, increased fishing restrictions could result in a reduction in number of recreational trips which could translate into a reduction in angler welfare. However, as in the case of the economic impacts (and assuming increased restrictions do not permanently deter stakeholders from the striped bass fishery), these effects are expected to be outweighed by the positive effects on anglers', harvesters', and consumers' welfare associated with stock recovery in successive years.

2.0 GOALS AND OBJECTIVES

2.1 HISTORY OF MANAGEMENT

Atlantic striped bass (*Morone saxatilis*) have supported valuable commercial and recreational fisheries on the U.S. Atlantic coast for centuries. The Commission coordinates interstate management of the species in state waters (0-3 miles from shore), while management authority in the exclusive economic zone (3-200 miles) lies with NMFS. The first Interstate FMP for the species was approved in 1981 in response to poor juvenile recruitment and declining

[3] While this is a useful source of updated information, it is not peer-reviewed and, therefore, the methods behind the report's figures should be considered accordingly.

landings. The FMP recommended increased restrictions on commercial and recreational fisheries, such as minimum size limits and harvest closures on spawning grounds. Two amendments were passed in 1984 recommending additional management measures to reduce fishing mortality. To strengthen the management response and improve compliance and enforcement, the Atlantic Striped Bass Conservation Act (P.L. 98-613) was passed in late 1984. The Striped Bass Act mandated the implementation of striped bass regulations passed by the Commission and gave the Commission authority to recommend to the Secretaries of Commerce and Interior that states be found out of compliance when they failed to implement management measures consistent with the FMP.

The first enforceable plan under the Striped Bass Act, Amendment 3, was approved in 1985, and required size regulations to protect the 1982 year class—the first modest size cohort since the previous decade. The objective was to increase size limits to allow at least 95% of the females in the 1982 year class to spawn at least once. Smaller size limits were permitted in producer areas than along the coast. Several states opted for a more conservative approach and imposed a total moratorium on striped bass landings for several years. The amendment contained a trigger mechanism to relax regulations when the 3-year moving average of the Maryland juvenile abundance index (JAI) exceeded an arithmetic mean of 8.0. This was attained with the recruitment of the 1989 year class and led to the development of Amendment 4. Also, in 1985, the Commission determined the Albemarle Sound-Roanoke River (Albemarle-Roanoke) stock in North Carolina contributed minimally to the coastal migratory population, and was therefore allowed to operate under an alternative management program.

Amendment 4, implemented in 1989, aimed to rebuild the resource rather than maximize yield. The amendment allowed state fisheries to reopen under an interim target fishing morality (F) of 0.25, which was half the estimated F needed to achieve maximum sustainable yield (MSY). The amendment would allow an increase in the target F (0.5) once female SSB was restored to levels estimated during the late 1960s and early 1970s. The dual size limit concept was maintained (28” coastal versus 18” producer areas), and a recreational trip limit and commercial season was implemented to reduce the harvest to 20% of that during 1972-1979. A series of four addenda were implemented from 1990-1994 to maintain protection of the 1982 year class through sequentially higher minimum size limits which reached 34” along the coast by 1994.

In 1990, to provide additional protection to striped bass and ensure the effectiveness of state regulations, NMFS adopted a prohibition on possession, fishing (catch and release fishing), harvest, and retention of Atlantic striped bass in the Exclusive Economic Zone (EEZ), with the exception of a defined transit zone within Block Island Sound (55 Federal Register 40181-02). Atlantic striped bass may be transported through this defined area provided that the vessel is not used to fish while in the EEZ and the vessel remains in continuous transit, and that the fish were legally caught in adjoining state waters. The EEZ has remained closed since 1990. In addition, an Executive Order issued in 2017 prohibits the sale of striped bass caught from the EEZ.

In 1995, the Atlantic striped bass migratory stock was declared recovered by the Commission (the Albemarle-Roanoke stock was declared recovered in 1997 and the Delaware River stock was declared recovered in 1998) and Amendment 5 was adopted to increase the target F to 0.33, midway between the existing F target (0.25) and F_{MSY}. Target F was allowed to increase again to 0.40 after two years of implementation. Regulations were developed to achieve the target fishing mortality, which included measures to restore commercial harvest to 70% of the average landings during the 1972-1979 historical period, and recreational season, possession (two fish), and size limits (a return to 28" on the coast and 20" for producer areas). States were allowed to submit proposals to implement alternative regulations that were deemed conservationally equivalent to the Amendment 5 measures, provided no size limits were below 18". From 1997-2000[4], a series of five addenda were implemented to respond to the latest stock status information and adjust the regulatory program to achieve each change in target F.

In 2003, Amendment 6[5] was adopted to address five limitations within the existing management program: 1) potential inability to prevent the Amendment 5 exploitation target from being exceeded; 2) perceived decrease in availability or abundance of large striped bass in the coastal migratory population; 3) a lack of management direction with respect to target and threshold biomass levels; 4) inequitable effects of regulations on the recreational and commercial fisheries, and coastal and producer area sectors; and 5) excessively frequent changes to the management program.

Amendment 6 modified the F target and threshold, and introduced a new set of biological reference points (BRPs) based on female SSB, as well as a list of management triggers based on the BRPs. The F threshold value was set to achieve MSY and the F target was set to provide a higher long-term yield from the fishery and adequate protection to ensure that the striped bass population is not reduced to a level where the spawning potential is adversely affected. The F target provided a buffer to account for the uncertainty in the estimate of F_{MSY} threshold. The female SSB threshold value was set equal to the female SSB value in 1995, the year that the striped bass stock was declared rebuilt, while the SSB target was set to 125% of the SSB threshold. New management measures were selected based on the F target.

[4] The 1997 reauthorization of the Striped Bass Act also required the Secretaries of Commerce and Interior provide a biennial report to Congress highlighting the progress and findings of studies of migratory and estuarine Striped Bass. The tenth such report was recently provided to Congress (Shepherd et al. 2020).

[5] While NMFS continues to implement a complete ban on the fishing and harvest of striped bass in the EEZ, Amendment 6 includes a recommendation to consider reopening the EEZ to striped bass fisheries. In September 2006, NMFS concluded that it would be imprudent to open the EEZ to striped bass fishing because it could not be certain that opening the EEZ would not lead to increased effort and an overfishing scenario. In 2018, the Consolidated Appropriations Act directed NMFS (in consultation with ASMFC) to review the federal moratorium once the 2018 benchmark was completed, and consider lifting the ban, however, there has not been any update from NMFS on this directive.

The coastal commercial quotas were restored to 100% of the states' average landings during the 1972-1979 historical period, except for Delaware's coastal commercial quota which remained at the level allocated in 2002[6]. For the recreational fisheries, a two-fish bag limit with a minimum size limit of 28 inches was established, except for the Chesapeake Bay fisheries and North Carolina fisheries that operate in the Albemarle-Roanoke. The Chesapeake Bay and Albemarle-Roanoke regulatory programs were predicated on a more conservative F target than the coastal migratory stock, which allowed these states/jurisdictions (hereafter states) to implement separate seasons, harvest caps, and size and bag limits as long as they remained under that F target. Additionally, states were permitted the flexibility to deviate from the coastwide regulations by submitting conservation equivalency proposals. No minimum size limit could be less than 18 inches under Amendment 6. The same minimum size standards regulated the commercial fisheries as the recreational fisheries, except for a minimum 20 inch size limit in the Delaware Bay spring American shad gillnet fishery.

Five addenda to Amendment 6 have been implemented. Addendum I, approved in 2007, established a bycatch monitoring and research program to increase the accuracy of data on striped bass discards and recommended development of a web-based angler education program. Addendum II was approved in 2010 and established a new definition of recruitment failure such that each index would have a fixed threshold rather than a threshold that changes annually with the addition of each year's data. Addendum III was approved in 2012 and requires all states with a commercial fishery for striped bass to implement a uniform commercial harvest tagging program. The Addendum was initiated in response to significant poaching events in the Chesapeake Bay and aims to limit illegal harvest of striped bass.

Addendum IV was triggered in response to the 2013 benchmark assessment, which indicated a steady decline in SSB since the mid-2000s to the point of approaching the SSB threshold in the terminal year. The Addendum established new F reference points, including the elimination of Chesapeake Bay stock-specific reference points due to modeling limitations, and changed commercial and recreational measures to reduce F to a level at or below the new target. While the 1995 female SSB level had proved to be a useful reference point for striped bass, fishing at (and even below) the F_{MSY} target reference point did not maintain female SSB at the 1995 level. To address this issue, the 2013 benchmark stock assessment recommended new F reference points that would maintain SSB at or above its 1995 level which Addendum IV adopted. Chesapeake Bay fisheries were required to implement lower reductions than coastal states (20.5% compared to 25%) since their fisheries were reduced by 14% in 2013 based on their management program; however, this included replacing the Bay's variable commercial harvest cap (based on exploitable biomass) with a fixed level based on reducing 20.5% from the 2021 harvest. Along the coast, the measures included 25% coastal commercial quota reductions and

[6] The decision to hold Delaware's commercial quota at the 2002 level was based on tagging information that indicated F on the Delaware River/Bay stock was too high, and uncertainty regarding the status of the spawning stock for the Delaware River/Bay.

a 1-fish limit and 28" minimum size for recreational fisheries. The addendum maintained the flexibility to implement alternative regulations through the conservation equivalency process, which resulted in some variety of regulations among states. All states promulgated regulations prior to the start of their 2015 seasons.

In February 2017, the Board initiated development of Draft Addendum V to consider liberalizing coastwide commercial and recreational regulations. The Board's action responded to concerns raised by Chesapeake Bay jurisdictions regarding continued economic hardship endured by its stakeholders since the implementation of Addendum IV and information from the 2016 stock assessment update indicating that F was below target in 2015, and that total removals could increase by 10% to achieve the target F. However, the Board chose to not advance the draft addendum for public comment largely due to harvest estimates having increased in 2016 without changing regulations. Instead, the Board decided to wait until it reviewed the results of the 2018 benchmark stock assessment (NEFSC 2019) before considering making changes to the management program.

Addendum VI was initiated in response to the 2018 benchmark assessment which indicated the stock was overfished and experiencing overfishing in 2017. Approved in October 2019, the Addendum aims to reduce total removals by 18% relative to 2017 levels in order to achieve the F target in 2020 and begin rebuilding the stock. Specifically, the Addendum reduces all state commercial quotas by 18%, and implements a 1 fish bag limit and a 28"to less than 35" slot limit for ocean fisheries and a 1 fish bag limit and an 18" minimum size limit in Chesapeake Bay to reduce total recreational removals by 18% in both regions. The Addendum's measures are designed to apply the needed reductions proportionally to both the commercial and recreational sectors, although states were permitted to submit alternative regulations through conservation equivalency that achieve an 18% reduction in total removals statewide. The Board reviewed and approved management options for 2020 on a state-by-state basis in February, and all states promulgated regulations by April 1 (Tables 12-13).

Addendum VI also requires the mandatory use of circle hooks when fishing with bait to reduce release mortality in recreational striped bass fisheries. States are encouraged to promote the use of circle hooks through various public outreach and education platforms to garner support and compliance with this important conservation measure. Circle hook regulations were required to be implemented no later than January 1, 2021. In March 2021, the Board approved a clarification on the definition of bait and methods of fishing that require circle hooks. The Board also approved guidance on how to address incidental catch of striped bass when targeting other species with non-circle hooks with bait attached.[7]

[7] This guidance on incidental catch could not be implemented as a compliance criterion since incidental catch was not originally part of Addendum VI.

2.2 PURPOSE AND NEED FOR ACTION

The purpose of Amendment 7 is to update the management program to align with current fishery needs and priorities given the status and understanding of the resource and fishery has changed considerably since implementation of Amendment 6 in 2003. The Board intends for this amendment to build upon the Addendum VI action to end overfishing and initiate rebuilding in response to the overfished status.

The Board-approved 2018 benchmark stock assessment indicated the striped bass stock is overfished and experiencing overfishing relative to the updated reference points defined in the assessment. By accepting the assessment for management use in 2019, two management triggers were tripped requiring the Board to take action to address both the overfishing and overfished status. Addendum VI was implemented in 2020 to address the overfishing status by implementing measures to reduce fishing mortality back to the fishing mortality target in 2020. To address the overfished status, the Board must adjust the striped bass management program to rebuild the biomass to the target level by no later than 2029 (within 10 years). Addendum VI measures are expected to contribute to stock rebuilding.

This draft amendment presents options that would contribute to stock rebuilding and would update the management program to address concerns raised by the Board and the public (see *Section 1.1.1 Statement of the Problem*). For the recreational fishery, this amendment considers management measures to address recreational release mortality. Regarding management program processes, this amendment considers options to modify the use of conservation equivalency in the Striped Bass FMP and options to modify the management triggers established through Amendment 6. Regarding the rebuilding plan, this amendment considers options for how recruitment assumptions would be applied to the rebuilding calculations and projections in the next stock assessment update (expected in 2022). Besides these five issues, all other management measures are consistent with Amendment 6 and its Addenda; however, other issues can be addressed in a separate management document(s) following approval of the final amendment (see *Section 4.7 Adaptive Management*).

2.3 GOAL

The Goal of Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass is:

> To perpetuate, through cooperative interstate fishery management, migratory stocks of striped bass; to allow commercial and recreational fisheries consistent with the long-term maintenance of a broad age structure, a self-sustaining spawning stock; and also to provide for the restoration and maintenance of their essential habitat.

2.4 OBJECTIVES

In support of this goal, the following objectives are specified:

1. Manage striped bass fisheries under a control rule designed to maintain stock size at or above the target female spawning stock biomass level and a level of fishing mortality at or below the target exploitation rate.
2. Manage fishing mortality to maintain an age structure that provides adequate spawning potential to sustain long-term abundance of striped bass populations.
3. Provide a management plan that strives, to the extent practical, to maintain coastwide consistency of implemented measures, while allowing the States defined flexibility to implement alternative strategies that accomplish the objectives of the FMP.
4. Foster quality and economically viable recreational, for-hire, and commercial fisheries.
5. Maximize cost effectiveness of current information gathering and prioritize state obligations in order to minimize costs of monitoring and management.
6. Adopt a long-term management regime that minimizes or eliminates the need to make annual changes or modifications to management measures.
7. Establish a fishing mortality target that will result in a net increase in the abundance (pounds) of age 15 and older striped bass in the population, relative to the 2000 estimate.

2.5 MANAGEMENT UNIT

The management unit includes all coastal migratory striped bass stocks on the East Coast of the United States, excluding the Exclusive Economic Zone (3-200 nautical miles offshore), which is managed separately by NMFS. The coastal migratory striped bass stocks occur in the coastal and estuarine areas of all states and jurisdictions from Maine through North Carolina. Inclusion of these states in the management unit is also congressionally mandated in the Atlantic Striped Bass Conservation Act (PL 98-613).

2.5.1 Chesapeake Bay Management Area

The Chesapeake Bay management area is defined by the striped bass residing between the baseline from which the territorial sea is measured as it extends from Cape Henry to Cape Charles to the upstream boundary of the fall line. Unlike the Albemarle Sound-Roanoke River stock, the striped bass in the Chesapeake Bay are unquestionably part of the coastal migratory stock and are assessed as part of the coastal migratory striped bass management unit. However, Amendment 7 implements a separate management program for the Chesapeake Bay due to the size availability of striped bass in this area.

2.5.2 Albemarle Sound-Roanoke River Management Area

The Albemarle Sound-Roanoke River (Albemarle-Roanoke) stock is currently assessed and managed separately by the State of North Carolina under the auspices of ASMFC.[8] The Albemarle-Roanoke management area is defined by the striped bass inhabiting the Albemarle, Currituck, Croatan, and Roanoke Sounds and their tributaries, including the Roanoke River. The Virginia/North Carolina line bound these areas to the north and a line from Roanoke Marshes Point to the Eagle Nest Bay bounds the area to the south. The Bonner Bridge at Oregon Inlet defines the ocean boundary of the Albemarle-Roanoke management area.

The Albemarle-Roanoke stock is not included in the coastwide assessment and management program because it contributes minimally to the coastal migratory stock. The Albemarle-Roanoke stock is smaller in total abundance relative to the other producer areas and does not participate in the coastal migration until older ages. The female maturation schedule for the Albemarle-Roanoke stock is also different than the Chesapeake Bay stock (ASMFC 2013; NCDMF 2014). The Technical Committee will continue to monitor the contribution of the Albemarle-Roanoke stock to the coastal migratory population and make recommendations to the Management Board regarding future management.

2.6 REFERENCE POINTS

The current status of the Atlantic striped bass stock will be determined with respect to its biological reference points through the stock assessment. Amendment 7 maintains the previously existing reference point definitions from Amendment 6, as modified by Addendum IV, for female spawning stock biomass (SSB) and fishing mortality rate (F).

2.6.1 Definition of Overfishing and Overfished

A common approach in fisheries management for evaluating the need for management action as determined by stock status is through the use of a control rule. For striped bass, the control rule is based on the level of: 1) fishing mortality rate (F) and 2) female spawning stock biomass (SSB). Overfishing is defined relative to the rate of removals from the population, as determined by the fishing mortality on the stock, whereas overfished status is defined relative to female SSB. For striped bass, the threshold levels of F and SSB are used to determine overfishing and overfished status, respectively. If F exceeds the F threshold, overfishing is occurring, and if SSB falls below the SSB threshold, the stock is overfished.

[8] Estuarine striped bass in North Carolina are currently managed under Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan (FMP) and its subsequent revision and recent supplement (NCDMF 2013, 2014, 2019). It is a joint plan between the North Carolina Marine Fisheries Commission (NCMFC) and the North Carolina Wildlife Resources Commission (NCWRC).

The management program is designed to achieve the target F and SSB levels. The use of fishing mortality and spawning stock biomass targets and thresholds will provide managers with a series of factors to use when evaluating the status of the stock. *Section 4.1* outlines a series of management triggers associated with the targets and thresholds.

The following sections identify SSB and F reference points for the coastwide population, which includes the Chesapeake Bay, Hudson River and Delaware River/Bay as a metapopulation. These reference points are consistent with those accepted in the Striped Bass 2018 Benchmark Assessment and Peer Review (NEFSC 2019).

Additional work is being conducted by the TC and SAS to develop management area-based reference points (e.g., for the Chesapeake Bay) for future Board consideration.

2.6.1.1 Female Spawning Stock Biomass Target and Threshold

The biomass target and threshold are based on the weight of sexually mature females in the striped bass population. The 1995 estimate of female SSB is used as the SSB threshold because many stock characteristics, such as an expanded age structure, were reached by this year, and this is also the year the stock was declared recovered. The female SSB target is equal to 125% of the female SSB threshold. Based on the results from the 2018 assessment, the SSB threshold is 91,436 metric tons (202 million pounds) and the SSB target is 114,295 metric tons (252 million pounds) (Table 1). Female SSB target and threshold values will be updated with future stock assessments because these reference point values are estimated based on the best available data.

The striped bass population will be considered overfished when the female SSB falls below the SSB threshold level. *Section 4.1* outlines management triggers based on female SSB reference points.

The use of the word “target” is not intended to imply that the management program will try to limit the population from expanding beyond the target level. In other words, when the population is above the target it is not the intent to reduce the population back to target levels.

2.6.1.2 Fishing Mortality Target and Threshold

Fishing mortality based reference points are designed to manage the rate at which individual striped bass die because of fishing. The fishing mortality target and threshold are the values of F estimated to achieve the respective SSB target and threshold over the long-term. If the current F exceeds the F threshold, then overfishing is occurring. This means the rate at which striped bass are dying because of fishing (i.e., harvest and dead discards) exceeds the stock’s ability to maintain itself at the SSB threshold. The value of the F target is set at a cautionary level

intended to safeguard the fishery from reaching the overfishing threshold.[9] The F target and threshold values will be updated with future stock assessments because these reference point values are estimated based on the best available data.

Section 4.1 outlines management triggers based on the F reference points.

Table 1. Coastwide Population Reference Points

Reference Point	Definition	Value (as estimated in 2018 benchmark stock assessment)*
$SSB_{THRESHOLD}$	SSB in 1995	202 million pounds
SSB_{TARGET}	125% of SSB in 1995	252 million pounds
$F_{THRESHOLD}$	F associated with achieving the SSB threshold	0.24
F_{TARGET}	F associated with achieving the SSB target	0.20

*The target and threshold values may change through future stock assessments because they are estimated based on the best available data.

2.6.1.3 Reference Points for the Albemarle Sound-Roanoke River

The State of North Carolina will manage the Albemarle Sound-Roanoke River stock using reference points from the latest North Carolina Albemarle Sound-Roanoke River stock assessment accepted by the Technical Committee and approved for management use by the Board (Figures 8-9). The recreational and commercial fisheries in the Albemarle Sound and Roanoke River will operate under North Carolina's Fishery Management Plan while the recreational and commercial fisheries in the Atlantic Ocean will continue to operate under the Commission's management measures as the rest of the coastal fisheries.

2.7 STOCK REBUILDING PROGRAM

2.7.1 Stock Rebuilding Targets

Should the Atlantic striped bass population be overfished at any time, it is the intent under Amendment 7 to rebuild the female spawning stock biomass to the target level (defined in *Section 2.6.1.1*) within the timeframe established in *Section 2.7.2*.

2.7.2 Stock Rebuilding Schedules

If at any time the Atlantic striped bass population is declared overfished and rebuilding needs to occur (as specified in *Section 4.1 Management Triggers*), the Management Board will

[9] F reference points are calculated by the stock assessment model, which includes incorporating recruitment from the values observed from 1990 to the terminal year of the assessment. If an alternative recruitment management trigger is selected from *Section 4.1,* an interim F target and threshold may be calculated based on recruitment values from a low recruitment time period only, as specified in *Section 4.1*.

determine the rebuilding schedule at that time. The only limitation imposed under Amendment 7 is that the rebuilding schedule is not to exceed 10 years.

2.7.3 Maintenance of Stock Structure

Using the outputs from the stock assessment model, the Technical Committee will monitor the status of the age structure in the striped bass population. If the Technical Committee identifies a persistent change in the age structure that could jeopardize recruitment then the Management Board could modify the exploitation pattern to increase survival of target age classes. In addition, if an individual stock exceeds threshold limits for biomass or exploitation the Board should consider management changes for that stock.

3.0 MONITORING PROGRAM SPECIFICATION

In order to achieve the goals and objectives of Amendment 7, the collection and maintenance of quality data is necessary. All state fishery management agencies are encouraged to pursue full implementation of the standards of the Atlantic Coastal Cooperative Statistics Program (ACCSP).

3.1 COMMERCIAL CATCH AND LANDINGS INFORMATION

States and jurisdictions with commercial striped bass fisheries are required to collect commercial fishery data elements consistent with ACCSP standards and adhere to the ACCSP standard of mandatory trip-level reporting for catch and effort data collection. These data are used to support commercial quota monitoring efforts to prevent annual quota overages. Commercial quotas are allocated on a calendar year basis with quota monitoring being conducted annually during the Fishery Management Plan Review process based on landings information submitted in state compliance reports. States also conduct quota monitoring during the fishing season. Any overages incurred by a state or jurisdiction is deducted from that state or jurisdictions allowable quota in the following year.

3.1.1 Commercial Tagging Program

States and jurisdictions are required to implement a tagging program for all commercially harvested striped bass within state or jurisdictional waters. Further descriptions of the program requirements are provided in the following sections.

Tag Information and Type

All states and jurisdictions with a commercial striped bass fishery are required to submit a Commercial Tagging Report to ASMFC no later than 60 days prior to the start of the first commercial fishery in that state or jurisdiction. The Commercial Tagging Report will include a picture of the tag(s), as well as a description of the tag color, style, and inscription for all gears and/or seasons issued. Additionally, it should include the number of tags issued or printed and a description of the biological metric used to determine the number of tags printed and distributed to participants. All tags used in a state or jurisdictions tagging program must be

tamper-evident. Tags are required to be valid for only one year or fishing season. Tags are required to be inscribed with, at a minimum, the year of issue, the state of issue, and a unique number that can be linked back to the permit holder. Where possible, tags should also be inscribed with size limit. States should consider the use of bar codes or QR codes imprinted on tags, for use in tracking fish from harvester to dealer to buyer, as the technology becomes more available. Changes to the tags, with the exception of year, are required to be reported to ASMFC as specified in *Section 5.3*.

Tag Timing

States or jurisdictions with a commercial striped bass fishery may choose to implement their commercial tagging program at either the point of harvest or the point of sale.

Tag Allowance

States and jurisdictions with a commercial striped bass fishery are required to allocate commercial tags to permit holders based on a biological metric. This option is intended to help prevent state or jurisdictional commercial quota overages, which will contribute to the health and sustainability of the striped bass population. The biological metric used to allocate tags to participants is required to be included in the annual Commercial Tag Report.

Tag Accounting

States and jurisdictions with a commercial striped bass fishery must require permit holders to turn in unused tags or provide an accounting report for any unused tags prior to the start of the next fishing season. Tags or the accounting report shall be turned into the agency issuing the tags. The accounting report must include the disposition of all tags issued to the permittee (e.g., used, unused, broken, lost). Permit holders who do not comply with this section may be subject to penalties as set forth below.

Reporting for Tagging Program

States and jurisdictions with a commercial striped bass fishery shall, at a minimum, approve the ACCSP standards for catch and effort data collection. The ACCSP standard for commercial catch and effort data is mandatory, trip-level reporting of all species commercially harvested with reporting of specific minimum data elements; including species, quantity, state and port of landing, market grade and category, areas fished and hours fished. Dealers and/or harvesters landing catches must report to the state of landing monthly or more frequently, if possible. Each gear and area combination should be detailed; such as separate listings each time the fisherman changes gear or fishing area within a trip. Price data are preferred at the trip-level, but partners may opt to collect prices through dealer surveys.

Striped Bass Processing

For all commercial striped bass tagging programs, tags must remain affixed to the fish until processed for consumption by the consumer. Retail markets may prepare portions of legally tagged striped bass for the consumer but must retain the tagged carcass until all portions are sold. The tag must then be removed from the rack and destroyed (e.g. by cutting the tag in two). Possession of untagged striped bass or striped bass fillets or steaks without the properly

tagged carcass in establishments where fish are sold or offered for sale (including wholesale establishments, retail establishments and restaurants) is presumptive evidence of intent to sell, trade, or barter such striped bass.

Striped Bass Exportation

It is unlawful to sell or purchase commercially caught striped bass without a commercial tag. This is to prevent the sale or purchase of untagged striped bass into a state or jurisdiction where there is currently no commercial fishery program.

Penalties

It is recommended that states and jurisdictions strengthen their penalties for striped bass violations, including counterfeit tag operations, so that the penalties are sufficient to deter illegal harvest of striped bass. License revocation or suspension is supported as a primary penalty for state or federal violations. Civil and/or criminal penalties can be effective deterrents.

It is recommended that if the permit holder issued tags cannot account for unused commercial striped bass tags, then that individual will not be issued a commercial striped bass permit for the subsequent fishing year.

3.2 RECREATIONAL CATCH AND LANDINGS INFORMATION

The Marine Recreational Information Program (MRIP) contains estimated Atlantic striped bass catches starting in 1981 for shore, private/rental boats, and for-hire modes. Recreational harvest of striped bass was previously collected through the Marine Recreational Fisheries Statistics Survey (MRFSS), which was a recreational data collection program used from 1981-2003. The MRFSS program was replaced by MRIP in 2004 and was designed to provide more accurate and timely reporting as well as greater spatial coverage. The MRFSS and MRIP programs were simultaneously conducted in 2004-2006 and this information was used to calibrate past MRFSS recreational harvest estimates against MRIP recreational harvest estimates.

In 2018, MRIP implemented the Fishing Effort Survey (FES) which used an improved methodology to address several concerns with the prior Coastal Household Telephone Survey. These concerns included under-coverage of the angling public, declining number of households with landline telephones, reduced response rates, and memory recall issues. Past estimates have been recalibrated to the FES. This calibration resulted in much higher recreational catch estimates compared to previous estimates. The 2018 striped bass benchmark assessment incorporated these newly calibrated MRIP estimates.

Recreational catches of striped bass were downloaded from https://www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries using the query option.

A description of MRIP survey methods can be found online: https://www.fisheries.noaa.gov/recreational-fishing-data/types-recreational-fishing-surveys#access-point-angler-intercept-survey.

3.3 SOCIAL AND ECONOMIC COLLECTION PROGRAMS

Data on a number of variables relevant to social and economic dimensions of striped bass fisheries are collected through existing ACCSP data collection programs and MRIP; however, no explicit mandates to collect socioeconomic data for this species currently exist. In addition to landed quantities, commercial harvesters and dealers may report ex-vessel prices or value, fishing and landing locations, landing disposition, and a variety of measures capturing fishing effort. MRIP regularly collects information on recreational fishing effort and landings, and occasionally gathers socioeconomic data on angler motivations and expenditures.

3.4 BIOLOGICAL DATA COLLECTION PROGRAM

3.4.1 Fishery-Dependent Data Collection

Required fishery-dependent data collection programs are as follows:

1. Catch composition information will be gathered by those states/jurisdictions with commercial fisheries (currently Massachusetts, Rhode Island, New York, Delaware, Maryland, Virginia, Potomac River Fisheries Commission, and North Carolina) and by those states with significant recreational fisheries (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and the Potomac River Fisheries Commission). Samples shall be representative of location and seasonal distribution of catch, and appropriate biological data shall be collected.

2. Representative catch and effort data will be gathered by those states with significant commercial fisheries (currently Massachusetts, New York, Delaware, Maryland, Virginia, and the Potomac River Fisheries Commission) and by those agencies monitoring recreational fisheries (National Marine Fisheries Service, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and the Potomac River Fisheries Commission).

3. Striped bass tagging programs currently executed by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Southeastern Monitoring and Assessment Program, Massachusetts Division of Marine Fisheries, New York Department of Environmental Conservation, New Jersey Department of Environmental Protection, Maryland Department of Natural Resources, Virginia Marine Resources Commission, and North Carolina Division of Marine Fisheries will be continued to generate estimates of migration and mortality rates.

   Appendix 1 summarizes required fishery-dependent data collection.

3.4.2 Fishery-Independent Data Collection

3.4.2.1 Young-of-Year (YOY) Surveys

Annual juvenile recruitment (appearance of juveniles in the ecosystem) of striped bass which comprise the Atlantic Coast migratory population is measured in order to provide an indication of future stock abundance. When low numbers of juvenile fish (age 0) are produced in a given year, recreational and commercial catches from that year class may be lower four years later when surviving fish become available to the fisheries. Recruitment is measured by sampling current year juvenile fish abundance in nursery areas. Currently, these juvenile abundance indices are determined annually for stocks in the Kennebec River, Hudson River, Delaware River, Chesapeake Bay and its tributaries, and Albemarle Sound-Roanoke River. Since there is a time delay of several years between the measurement of recruitment and initial harvest of those fish, managers have ample time to protect year classes that have not yet been exploited.

The juvenile abundance index values for the Hudson River, Delaware River, Chesapeake Bay and its tributaries serve as input to the assessment model. Juvenile abundance indices can also serve as another indicator of the status, and future status, of the striped bass population. Recruitment failure is defined as an index value that is below 75% of all values in a fixed time series appropriate to each juvenile abundance index. The fixed time series for determining recruitment failure are as follows:

State JAI	Water Body	Reference Period
ME	Kennebec River	1987-2009
NY	Hudson River	1985-2009
NJ	Delaware River	1986-2009
MD	Chesapeake Bay	1957-2009
VA	Chesapeake Bay	1980-2009
NC	Albemarle-Roanoke	1955-2009

The following states are currently required to conduct juvenile abundance index surveys on an annual basis: Maine for the Kennebec River; New York for the Hudson River; New Jersey for the Delaware River; Maryland for the Chesapeake Bay tributaries; Virginia for Chesapeake Bay tributaries; and North Carolina for the Albemarle Sound-Roanoke River.

The requirements for measurement of juvenile indices are as follows:

1. The sampling protocol (stations, sampling intensity and gear type) shall be consistent throughout the period for which the index is to be used. For new indices, the following information will be required: details of the sampling design of the study yielding the data used to develop the index; a description of the analyses performed; and a presentation of the results of those analyses. The Technical Committee shall review any such submittal and either accept or reject it. If rejected, the Committee will provide a written explanation to the sponsor explaining the reasons for rejection.

2. In order to be validated, the index should exhibit a significant ($p<0.05$) positive correlation to either the magnitude of future landings (lagged 2-7 years) from the stock, or to the relative abundance of the same year class later in life (i.e., relative abundance of juveniles versus the relative abundance of yearling fish of the same year class).

3. The Management Board may require juvenile abundance surveys in additional river systems to evaluate the level of striped bass productivity.

4. The Technical Committee shall annually examine trends in all required juvenile abundance index surveys and evaluate index values against the recruitment trigger, as defined in *Section 4.1*.

   Appendix 1 summarizes required juvenile abundance index surveys.

3.4.2.2 Spawning Stock Biomass Surveys

Spawning stock surveys are required to be monitored in each of the following areas: Hudson River, Delaware River, Chesapeake Bay, and Albemarle Sound-Roanoke River.

The requirements for monitoring spawning stock biomass are as follows:

1. The Technical Committee shall examine output from the stock assessment model when stock assessment benchmarks or updates are conducted and use those estimates to evaluate the status of the striped bass stock relative to the female spawning stock biomass targets and thresholds in this Amendment.

2. Jurisdictions bordering the Hudson River, Delaware River, Chesapeake Bay, and Albemarle Sound/Roanoke River (currently New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina) shall be responsible for conducting spawning stock assessment surveys in those river systems. Accepted studies for fulfilling this requirement currently include: **New York**: Hudson River haul seine survey and shad by-catch analysis; **Maryland**: Gill net surveys; **Virginia**: spring pound net survey; **North Carolina**: spring electroshocking survey of spawning stock; **Pennsylvania-New Jersey-Delaware**: Delaware River electroshocking/gill net survey. Any changes to the survey methodology must be reviewed by the Technical Committee and approved by the Management Board prior to implementation.

   Appendix 1 summarizes required spawning stock biomass surveys.

3.4.2.3 Observer Programs

As a condition of state and/or federal permitting, many vessels are required to carry at-sea observers when requested. A minimum set of standard data elements are to be collected through the ACCSP at-sea observer program (refer to the ACCSP Program Design document for details). Specific fisheries priorities will be determined by the Discard/Release Prioritization Committee of ACCSP.

3.4.2.4 Tagging Studies/Program

Tagging of fish with individually-numbered tags is a proven technique for determining movement and migration routes and rates, growth rates and patterns, estimation of mortality/survival, estimation of population size (if assumptions are met), stock identification and determination of movement/migration corridors and habitat use. The use of more sophisticated electronic tags can provide additional habitat information such as temperature (of both water and fish body), depth and specific location. The species' Advisory Panel, Stock Assessment Subcommittee, Technical Committee and/or Management Board (for ASMFC), Advisory Panel or Committee (for Fishery Management Councils) and working groups for International Fisheries Commissions may decide to recommend that tagging studies be performed. Alternatively, such studies may be initiated independently by one or more of the partners in the fishery management process.

Fish tagging is a technical activity which is usually conducted by scientific personnel; however a number of other entities have become involved in or conducted their own tagging studies. If a new tagging study is proposed for striped bass, a number of considerations should be addressed. Any proposed study must have stated objectives, which directly relate to scientific or management purposes. A second important consideration is whether a species can be tagged with minimal mortality, as the utility of study data will be highly questionable if handling/tagging mortality is high. The ideal tag should be one which has a unique alpha-numeric identifier and organization contact information, is easily implanted, has a high rate of retention, is readily visible to potential recoverers without increasing an animal's susceptibility to predation, and remains permanently legible, or in the case of internally-embedded coded wire (CWT) or passive integrated transponder (PIT) tags, is easily and consistently detectable. The implantation location and type of CWT or PIT tags should be fully coordinated with other investigators tagging the same species. Tag number sequences and colors of externally visible tags should be coordinated with other investigators conducting similar studies, via the Interstate Tagging Committee, to ensure that duplication does not occur, and contact information for recoveries and returns should be clearly imprinted on the tag. Tagging should be conducted in a consistent manner by personnel who have been properly trained. Consideration should be given to requiring certification of both professional staff and volunteer angler taggers by the sponsoring organization, in order to increase both the efficiency of tagging and the survival of tagged fish through minimization of handling/tagging mortality. The ASMFC Interstate Tagging Committee has developed a certification for tagging programs, for which sponsoring organizations may wish to apply.

Tagging studies should be highly publicized among the fishing public to maximize the rate of return from both commercial and recreational sectors. In most cases, efforts should be undertaken to accurately measure the rate of tag encounter and reporting. Ideally each study conducted should assess short-term tagging (handling) mortality; short and long-term tag loss; and reporting rates for each fishery sector. Advertised/promised rewards should be provided promptly upon receipt of data. Study managers should insist on complete and accurate return information. Numbers of animals tagged should be sufficiently high to ensure that the desired information will be produced by the study. Careful and appropriate study design (i.e., purpose,

location, sample size, duration, recapture procedures, analysis) is vital to ensure success. Prior to study implementation, a repository for any resultant data should be specified, and long-term commitments made by the sponsoring program, and resources made available to analyze and publish the results. Funds should be provided/reserved to process recaptured tagged fish reported after the program has ended. In angler programs, participants with tagging kits should be notified when the program has ended. All incoming tagging data should be added to the existing database until no additional data are received. Failure to respond to reports of recaptured fish will be detrimental to surrounding tagging programs. Tag reporting apathy develops in anglers when they do not receive replies from the tagging entity.

Investigators may wish to consider collaboration with existing tag database managers (e.g. NMFS Northeast Fishery Science Center, Woods Hole, MA; or U.S. Fish and Wildlife Service, Fishery Resources Office, Annapolis, MD; Atlantic States Marine Fisheries Commission, 1050 N Highland Ave, Suite 200 A-N, Arlington, VA 22201, 703-842-0740, info@asmfc.org) for data entry and analysis. Studies should not be undertaken without adequate consideration of all of these issues. The Interstate Tagging Committee strongly encourages programs which are implemented with: 1) connection to an agency or scientific entity for study design and data analyses; 2) an established constituent base to promote the program; 3) training for individuals on proper fish handling and tagging techniques; and 4) identified research needs and objectives.

Any public or private entity proposing new tagging studies should seek guidelines from and provide a proposal to the Interstate Tagging Committee for review and coordination prior to initiation of any study. The proposal should use the ASMFC's Protocols for Tagging Programs as guidance in developing the proposed study. If the proposed study is an integral component of the FMP, study design should ideally be reviewed and approved by the Stock Assessment Subcommittee and/or Technical Committee as well, during the FMP review process. Tagging studies outside the ASMFC jurisdiction may choose not to participate in the ASMFC review process.

The ASMFC's Interstate Tagging Committee was developed to serve as a technical resource for jurisdictions other than the ASMFC, as well as for private, non-profit tagging groups, who may plan to tag. Protocols have been developed by the Committee as a source of information, advice and coordination for all Atlantic coast tagging programs. A copy of the protocol is available on the ASMFC web site. Copies of proposals for review and coordination should be provided to the Interstate Tagging Coordinator at the ASMFC.

3.5 ASSESSMENT OF STOCK CONDITION

An Atlantic striped bass stock assessment update or benchmark assessment will be performed by the Stock Assessment Subcommittee (SAS) on a regular schedule recommended by the Assessment Science Committee and as approved by the Interstate Fisheries Management Program Policy Board (ISFMP Policy Board). The Board can request a stock assessment at any time. The SAS and TC will meet to review the stock assessment and all other relevant data

sources. The stock assessment report shall follow the general outline as approved by the ISFMP Policy Board for all Commission-managed species. In addition to the general content of the report as specified in the outline, the stock assessment report may also address the specific topics detailed in the following sections. Specific topics in the stock assessment may change as the SAS continues to provide the best model and metrics possible to assess the Atlantic striped bass stock.

3.5.1 Assessment of Population Age/Size Structure

Estimates of Atlantic striped bass age and size structure are monitored based on results of the stock assessment. As of the 2018 benchmark assessment, the accepted model for use in striped bass stock assessments is a forward projecting statistical catch-at-age (SCA) model, which uses catch-at-age data and fishery-dependent and -independent survey indices to estimate annual population size and fishing mortality. Indices of abundance track relative changes in the population over time while catch data provide information on the scale of the population size. Age structure data (numbers of fish by age) provide additional information on recruitment (number of age-1 fish entering the population) and trends in mortality.

3.5.2 Assessment of Annual Recruitment

Recruitment (age-1) of Atlantic striped bass is estimated by the SCA stock assessment model. The SCA model uses several fishery-independent indices of relative abundance for young-of-year (YOY) and age-1 fish (New York and Maryland YOY and Yearling Surveys, and New Jersey and Virginia YOY Surveys).

3.5.3 Assessment of Spawning Stock Biomass

Spawning stock biomass is estimated by the SCA stock assessment model and those estimates are compared to target and threshold levels (i.e., biological reference points) in order to assess the status of the stock. The 1995 estimate of female SSB is used as the SSB threshold because many stock characteristics, such as an expanded age structure, were reached by this year, and this is also the year the stock was declared recovered. The female SSB target is equal to 125% of the female SSB threshold.

3.5.4 Assessment of Fishing Mortality

The fishing mortality rate is estimated by the SCA stock assessment model and that estimate is compared to target and threshold levels (i.e., biological reference points) in order to assess the status of the stock. The F threshold and target are calculated to achieve the respective SSB reference points in the long term.

3.6 STOCKING PROGRAM

Amendment 7 does not include a stocking program for Atlantic striped bass.

3.7 BYCATCH DATA COLLECTION PROGRAM

In general, states shall undertake every effort to reduce or eliminate the loss of striped bass from the general population due to bycatch discard mortality. The Technical Committee shall examine trends in estimated bycatch during benchmark stock assessments and stock assessment updates.

The overarching goal of the bycatch data collection program (established through Addendum I to Amendment 6) is to develop more accurate estimates of striped bass discards and discard mortality. Additional sector-specific goals are listed below.

Commercial Fisheries

- Implement at-sea observer coverage on commercial vessels that are targeting striped bass, as well as vessels that may encounter striped bass, to collect information on the number of fish being discarded from various commercial gears. Ideally, the sampling effort will be optimally allocated, both seasonally and spatially, among directed and non-directed fishing that has a strong likelihood of generating striped bass bycatch.
- Determine the discard mortality associated with all of the commercial gear types currently encountering striped bass.
- Document the level of bycatch in identified problem fisheries in annual state compliance reports.

Recreational Fisheries

- Determine proportional use of different gear types and fishing practices (e.g. fly fishing, live bait fishing, circle hooks, treble hooks, etc.).
- Determine the discard mortality associated with each gear type and fishing practice.
- Document the level of bycatch in identified problem fisheries in annual state compliance reports.

For-Hire Fisheries

- Determine proportional use of different gear types and fishing practices (e.g. fly fishing, live bait fishing, circle hooks, treble hooks, etc.).
- Determine the discard mortality associated with each gear type and fishing practice.
- Document the level of bycatch in identified problem fisheries in annual state compliance reports.

3.7.1 Requirements and Recommendations for Bycatch Data and Research

MANDATORY DATA COLLECTION

- Collect commercial fishery data elements consistent with ACCSP standards.
- Coordinate with NMFS to ensure coverage in federal waters.
- Continue collection of quantitative data on the bycatch of finfish species as reported by interviewed fishermen through existing recreational and for-hire intercept surveys (ACCSP standard).

RECOMMENDED DATA COLLECTION

- Implement commercial at-sea observer coverage on 2-5% of the total trips in state waters. Applicable to all states with commercial fisheries (directed and non-directed) that encounter striped bass.
- Develop “add-on” questions for interview surveys to collect information on gear/terminal tackle used (circle hooks, J-Hooks, treble hooks, fly fishing, live bait, etc.) in recreational and for-hire fisheries.
- Develop a survey to estimate size composition of discarded fish. The Board will need to work with the TC to determine an effective way to collect these data. Approaches for consideration include, but are not limited to, volunteer angler surveys, additional questions for intercept survey, and expansion of data collected in for-hire fisheries.

MANDATORY DISCARD MORTALITY STUDIES

- Review existing commercial discard studies to determine what information has already been collected.
- Review existing recreational studies for various species and gears to develop estimates of striped bass discard mortality.

RECOMMENDED DISCARD MORTALITY STUDIES

- Conduct studies to estimate the discard mortality associated with the following commercial gear types: trawl (highest priority), gill net, fixed nets (pound net/fyke net/floating fish trap), hook and line, haul seine. These studies do not need to be conducted in all states, but should be conducted to reflect the fishing activities (gear type, temperature, salinity, etc.) that encounter striped bass.
- Conduct additional studies on recreational post-release mortality associated with a range of temperature, salinity, and gear types.

MANDATORY TECHNICAL COMMITTEE ANALYSES

- Analyze any newly collected commercial at-sea observer data to determine if any discarding “hot spots” can be reliably identified.
- Develop estimates for the proportion of discards based on water temperature and salinity, if possible. Apply existing post-release mortality rates to the proportions to determine the effect on estimated discard mortality. For example, if 20% of the catch occurs in warm brackish water, that portion of the catch is likely to have a higher mortality rate than discards in cold ocean water.

RECOMMENDED TECHNICAL COMMITTEE ANALYSES

- Analyze the number and type of all fishing trips from each state, by season and area if possible, and determine ideal allocation of recommended observer coverage.

MANDATORY DATA REPORTING

- Once any mandatory or recommended elements of this program are implemented, states are required to report any bycatch and/or data monitoring as part of the annual compliance report to the Commission.

4.0 MANAGEMENT PROGRAM AND PROPOSED OPTIONS

This section includes the following sections with options for Board consideration and public comment: *Section 4.1 Management Triggers; Section 4.2.2 Measures to Address Recreational Release Mortality; Section 4.4 Rebuilding Plan;* and *Section 4.6.2 Management Program Equivalency.*

The striped bass ocean fishery (also referred to as "ocean region") is defined as all fisheries operating in coastal and estuarine areas of the U.S. Atlantic coast from Maine through North Carolina, excluding the Chesapeake Bay and Albemarle Sound-Roanoke River management areas. The Chesapeake Bay fishery is defined as all fisheries operating within Chesapeake Bay, except for the Chesapeake Bay spring trophy fishery. The Chesapeake Bay spring trophy fishery is part of the ocean fishery for management purposes because it targets coastal migratory striped bass.[10]

The Albemarle Sound-Roanoke River stock is managed separately by the State of North Carolina (see *Section 2.5.2*).

Draft Amendment 7 continues to use bag and size limits, as well as a circle hook requirement when fishing with bait, to manage recreational striped bass fisheries, and quotas and size limits to regulate the striped bass commercial fisheries. Draft Amendment 7 also considers options for effort controls (seasonal closures), additional gear restrictions, and outreach efforts to manage the recreational fishery and address recreational release mortality.

4.1 MANAGEMENT TRIGGERS

The management triggers are intended to keep the Board accountable and were developed at a time when the stock was thought to be at historic high abundance and well above the SSB target. However, as perceptions of stock status and fishery performance have changed, shortfalls with how the management triggers are designed have emerged. When female SSB is below the target level, the variable nature of fishing mortality can result in a continued need for management action. Additionally, the shorter timetables for corrective action are in conflict with the desire for management stability, and the use of point estimates does not account for an inherent level of uncertainty. Furthermore, the Board is sometimes criticized for considering changes to the management program before the stock has a chance to respond to the most recent set of management changes. Lastly, the observed long period of below average recruitment which contributed to recent declines in biomass has raised questions about the recruitment-based trigger and whether it is designed appropriately.

[10] While the Chesapeake Bay spring trophy fishery is subject to the same requirements as the ocean recreational fishery, Chesapeake Bay trophy fishery removals are counted as part of total removals from the Chesapeake Bay and are included as part of the Chesapeake Bay fleet in the stock assessment model.

The following options consider how to set the management triggers in Amendment 7. Upon reaching any (or all) of the specified management triggers, the Board is required to alter the management program to ensure the objectives of Amendment 7 are achieved. It is important to note that the Board is not limited to taking action only when a management trigger is tripped.

The Status Quo option is defined by the management triggers as specified in Amendment 6 to the Atlantic Striped Bass FMP (listed below). To account for the various combinations of management trigger methods, timeframes, implementation deadlines, and deferment options, the following management alternatives have been divided into four (4) tiers. The first tier outlines the F-based trigger methods, the second tier outlines the SSB-based trigger methods, the third tier outlines the recruitment trigger methods, and the fourth tier outlines deferred management options if a management trigger is tripped and certain criteria are met. Within each tier is a set of primary options and sub-options (alternatives) for the Board to choose from.

An alternative under each primary option within a tier must be chosen to complete each management trigger package. For example, to achieve the current management triggers specified in Amendment 6 (status quo), the Board would select: Tier 1, Sub-options A1, B1, and C1; Tier 2, Sub-options A1, B1, and C1; Tier 3, Sub-options A1 and B1; and Tier 4, Option A. This decision framework is designed to provide the Board the option to maintain, remove, or change any of the existing management triggers individually. The intent is to evaluate the triggers against the most recent year(s) of data from the most recent stock assessment update or benchmark stock assessment accepted by the Board for management use. During years when stock assessments are conducted, the recruitment trigger should be evaluated concurrently, when possible, with the F and female SSB triggers when assessment results are presented to the Board.

Amendment 6 Management Triggers (Status Quo):

1) If the fishing mortality threshold is exceeded in any year, the striped bass management program must be adjusted to reduce the fishing mortality to a level that is at or below the target within one year.
2) If female SSB falls below the threshold, the striped bass management program must be adjusted to rebuild the biomass to the target level within an established timeframe [not to exceed 10-years].
3) If the fishing mortality target is exceeded in two consecutive years and the female SSB falls below the target within either of those years, the striped bass management program must be adjusted to reduce the F to a level that is at or below the target within one year.
4) If female SSB falls below the target for two consecutive years and the fishing mortality rate exceeds the target in either of those years, the striped bass management program must be adjusted to rebuild the biomass to a level that is at or above the target within an established timeframe [not to exceed 10-years].
5) If any Juvenile Abundance Index shows recruitment failure (i.e., an index value lower than 75% of all other values in the dataset) for three consecutive years, then the Board

will review the cause of recruitment failure (e.g., fishing mortality, environmental conditions, and disease) and determine the appropriate management action.

TIER 1 OPTIONS: Fishing Mortality (F) Management Triggers

Option A: Timeline to Reduce F to the Target

Sub-option A1 (status quo): Reduce F to a level that is at or below the target within one year.

Sub-option A2: Reduce F to a level that is at or below the target within two years.

Option B: F Threshold Triggers

Sub-option B1 (status quo): If F exceeds the F threshold, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under Option A.

Sub-option B2: If the two-year average F exceeds the F threshold, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under Option A. The two-year average F should not include data under different management actions (i.e., the F threshold trigger should not be evaluated unless there are at least two years of data in the assessment under the most recent management action).

Note: Although the trigger would only be evaluated when sufficient data years are available for sub-options B2, the Board is not limited to taking action only when a management trigger is tripped.

Option C: F Target Triggers

Sub-option C1 (status quo): If F exceeds the F target for two consecutive years and female SSB falls below the SSB target in either of those years, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under sub-option A.

Sub-option C2: If F exceeds the F target for three consecutive years, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under sub-option A.

Sub-option C3: No management trigger related to F target.

TIER 2 OPTIONS: Female Spawning Stock Biomass (SSB) Management Triggers

Option A: Deadline to Implement a Rebuilding Plan

Sub-option A1 (status quo): No Deadline to Implement a Rebuilding Plan
There would not be any requirement regarding how quickly the Board must implement a rebuilding plan when an SSB-based management trigger is tripped, as long as the rebuilding timeframe does not exceed 10-years from when the management trigger was tripped (i.e., the Board may implement a rebuilding plan at any time in response to the management trigger). A management trigger is not considered tripped until the Board formally reviews and accepts, if necessary, the results of the relevant stock assessment.

Sub-option A2: Two-Year Deadline to Implement a Rebuilding Plan
The Board must implement a rebuilding plan within two years from when an SSB-based management trigger is tripped. A management trigger is not considered tripped until the Board formally reviews and accepts, if necessary, the results of the relevant stock assessment.

Option B: SSB Threshold Trigger

Sub-option B1 (status quo): If female SSB falls below the SSB threshold, the striped bass management program must be adjusted to rebuild the biomass to the target level within an established timeframe [not to exceed 10-years].

Sub-option B2: No management trigger related to the female SSB threshold. The Board cannot choose this option in combination with Sub-option C3 below (i.e., there must be an SSB-based management trigger). This option recognizes that if managing to the SSB target is more conservative than managing to the SSB threshold, and if the management response is the same (i.e., rebuild to the SSB target within 10 years) for both types of SSB triggers, then there does not necessarily have to be a trigger for both.

Option C: SSB Target Trigger

Sub-option C1 (status quo): If female SSB falls below the target for two consecutive years and the fishing mortality rate exceeds the target in either of those years, the striped bass management program must be adjusted to rebuild the biomass to a level that is at or above the target within an established timeframe [not to exceed 10-years].

Sub-option C2: If female SSB falls below the target for three consecutive years, the striped bass management program must be adjusted to rebuild the biomass to a level that is at or above the target within an established timeframe [not to exceed 10-years].

Sub-option C3: No management trigger related to the female SSB target. The Board cannot choose this option in combination with Sub-option B2 above (i.e., there must be an SSB-based management trigger).

TIER 3 OPTIONS: Recruitment Triggers

Option A: Recruitment Trigger Definition

The status quo recruitment trigger (sub-option A1) was designed and has performed adequately to identify true recruitment failure (i.e., a prolonged period of very low recruitment events as seen during the 1970s and 1980s). Sub-options A2 and A3 are designed to identify periods of recruitment that are not necessarily at historically low levels, but are lower than the period of high recruitment seen in the late 1990s and early 2000s. As requested by the Board, the recruitment trigger alternatives are more sensitive than the status quo in order to alert the Board to periods of low recruitment. Specifically, the alternative trigger options are designed to be an early warning sign of potential reduced productivity of the stock following multiple weak year classes entering the population.

The status quo recruitment trigger includes the years of very low recruitment in the 1970s and 1980s in the trigger reference period. Sub-options A2 and A3 would change the reference period to exclude those years of very low recruitment which results in a more sensitive trigger. Sub-options A2 and A3 use a reference period of 1992-2006, which was identified as a period of high recruitment (i.e., high recruitment regime) by a change point analysis on the Maryland juvenile abundance index (JAI). This period spans the time of high recruitment seen in the late 1990s through the early 2000s. The Maryland JAI was used as the basis for this analysis because it is closely correlated to the coastwide age-1 estimates from the stock assessment model, and provides the longest time series to evaluate changes in high and low periods over time. If sub-option A2 or A3 is selected, the TC will update the change point analysis during benchmark stock assessments to evaluate if the high recruitment period for the trigger has changed with new years of data.

> **Sub-option A1 (status quo):** The recruitment trigger is tripped when any of the JAIs (ME, NY, NJ, MD, VA, NC) show recruitment failure, which is defined as a value that is below 75% of all values (i.e., below the 25th percentile) in a fixed time series appropriate to each juvenile abundance index, for three consecutive years. This status quo trigger tripped one time (NC in 2020) since approval of Amendment 6 in 2003 (Table 2). The state JAIs and reference periods are as follows:

State JAI	Water Body	Reference Period*
ME	Kennebec River	1987-2009
NY	Hudson River	1985-2009
NJ	Delaware River	1986-2009
MD	Chesapeake Bay	1957-2009
VA	Chesapeake Bay	1980-2009
NC	Albemarle-Roanoke	1955-2009

*Reference period established through Addendum II (2010).

For the following sub-options, the Board could select sub-option A2 (moderate sensitivity trigger) or A3 (high sensitivity trigger). Sub-options A2 and A3 would alert the Board to periods of low recruitment (i.e., while the stock has not quite reached recruitment failure, there have been multiple years of low recruitment).

Sub-option A2: The recruitment trigger is tripped when any of the four JAIs used in the stock assessment model to estimate recruitment (NY, NJ, MD, VA)[11] shows an index value that is below 75% of all values (i.e., below the 25th percentile) in the respective JAI from 1992-2006, which represents a period of high recruitment, for three consecutive years. The high recruitment reference period used for this trigger may be adjusted as recommended by the TC during benchmark stock assessments. This trigger alternative has a moderate sensitivity; it is more sensitive than the status quo but less sensitive than sub-option A3 (Figure 1). This trigger alternative would have tripped three times since 2003: NY in 2006; MD in 2010; MD in 2014 (Table 2).

Sub-option A3: The recruitment trigger is tripped when any of the four JAIs used in the stock assessment model (NY, NJ, MD, VA) shows an index value that is below the median of all values in the respective JAI from 1992-2006, which represents a period of high recruitment, for three consecutive years. The high recruitment reference period used for this trigger may be adjusted as recommended by the TC during benchmark stock assessments. This trigger alternative has a higher sensitivity than both the status quo trigger and sub-option A2 (Figure 1). This trigger alternative would have tripped six times since 2003: NY in 2006; MD in 2008; MD in 2009; MD and VA in 2010; NY in 2013; MD in 2014 (Table 2).

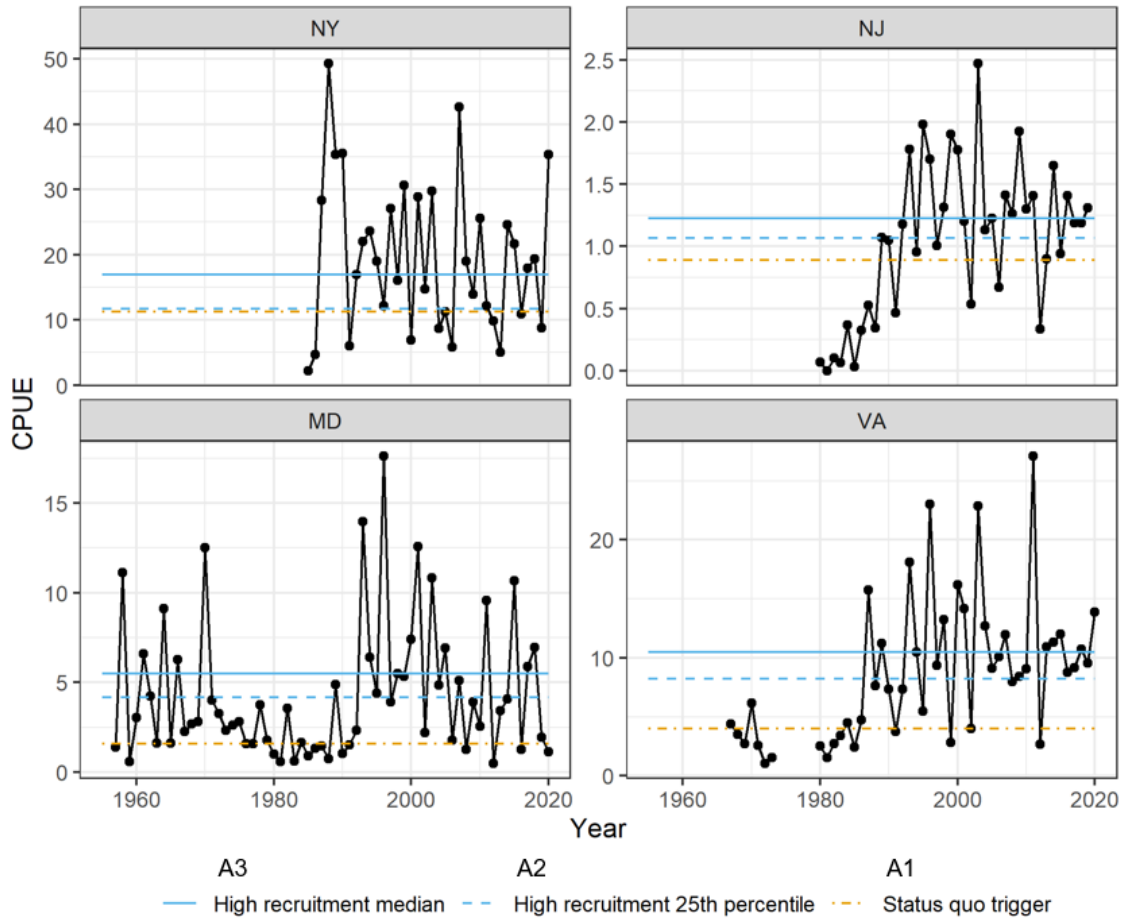
[11] The North Carolina JAI for the Albemarle Sound-Roanoke River is not used in the stock assessment because the Albemarle Sound-Roanoke River stock is managed and assessed separately by the state of North Carolina; the Maine JAI for the Kennebec River is not used in the stock assessment because that stock is assumed to only contribute a small amount to the coastwide stock.

Table 2. When the status quo and alternative juvenile abundance index (JAI) triggers would have tripped (black shaded cells) compared to the model estimates of recruitment. Note: "Core" JAIs are the four JAIs used in the stock assessment model to estimate recruitment (NY, NJ, MD, VA).

	Recruitment (Model age 1 estimates lagged back 1 year)	Sub-option A1 Status Quo Ref. period = Established through Addendum II One or more JAI below 25th Percentile for 3 consecutive years	Sub-option A2 Ref. period = High recruitment (1992-2006) One or more of the "core" JAIs below 25th Percentile for 3 consecutive years	Sub-option A3 Ref. period = High recruitment (1992-2006) One or more of the "core" JAIs below Median for 3 consecutive years
2003				
2004				
2005				
2006				
2007				
2008				
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
	# Years tripped	**1**	**3**	**6**

Below average recruitment
Above average recruitment
No data available
Trigger not tripped
Trigger tripped

Figure 1. Juvenile abundance indices (JAI) for NY, NJ, MD, and VA showing the trigger reference level for each recruitment trigger alternative. For each sub-option, the trigger would be tripped if any of the four JAIs falls below the specified reference level for three consecutive years.



Option B: Management Response to Recruitment Trigger

The following sub-options are alternatives for the management response that would be triggered when the recruitment trigger definition selected under Option A is tripped. Sub-options B2 and B3 are intended to reduce fishing pressure as the weak year classes enter the population. These management response options are not necessarily designed to increase recruitment in the future because the striped bass stock exhibits a weak stock-recruit relationship (i.e., a larger spawning stock does not necessarily correlate with higher recruitment).

Juvenile abundance indices and model recruitment estimates provide information on the near-term productivity of the stock. Several years of poor recruitment may indicate the stock is entering a low recruitment regime, and levels of removals that were sustainable during average or above average recruitment regimes may not be sustainable in the future. If the Board wants to be proactive about responding to periods of lower recruitment, the Board could redefine the F target to be more precautionary (sub-options B2 and B3).

The F target for striped bass is defined as the level of F that will maintain the population at the SSB target in the long-term. F target is calculated by drawing recruitment from the values observed from 1990 to 2017 (this time period includes both high and low recruitment values, but does not include the very low values in the 1980s). If recruitment is only drawn from a below-average period instead of the full 1990-2017 period, for example, the F target would be lower. If the population is fished at the current F target but average recruitment remains lower than the 1990-2017 mean, then the population may not rebuild to the SSB target in the long term.

Based on the change point analysis of the Maryland JAI with data through 2020, the TC identified 1992-2006 to represent the high recruitment period (i.e., high recruitment regime) and 2007-2020 to represent the low recruitment period (i.e., low recruitment regime). This translates to years 1993-2007 and 2008-2017 for age-1 model estimates of recruit abundance used to calculate the interim F target for sub-options B2 and B3. If sub-option B2 or B3 is selected, the TC will update the change point analysis during benchmark assessments to evaluate whether the definition of the high/low recruitment periods for the trigger has changed with new years of data.

OPTIONS

Sub-option B1 (status quo): If the recruitment trigger is tripped, the Board would review the cause of recruitment failure (e.g., fishing mortality, environmental conditions, and disease) and determine the appropriate management action.

For the following sub-options, the Board could select sub-option B2 or B3. Note: Sub-option B2 evaluates one point estimate of F against the F target, which is more conservative than the F-based management trigger definitions under Section 4.1 used in sub-option B3.

Sub-option B2. If the recruitment trigger is tripped, an interim F target calculated using the low recruitment assumption is implemented, and if F from the terminal year of the most recent stock assessment is above the interim F target, the striped bass management program must be adjusted to reduce F to the interim F target within one year.

Sub-option B3. If the recruitment trigger is tripped, an interim F target and interim F threshold calculated using the low recruitment assumption are implemented, and the F-based management triggers defined in *Section 4.1* would be reevaluated using those interim reference points. If an F-based trigger is tripped upon reevaluation, the striped bass management program must be adjusted to reduce F to the interim F target within the timeline defined in *Section 4.1*.

Note: Under both Sub-option B2 and B3, the lower interim F target would remain in place at least until the next stock assessment update or benchmark assessment is approved for management use. The Board would determine at that time which F rate

(target or interim target) to manage towards moving forward by considering factors such as current stock status, recent JAI data, and TC input.

TIER 4 OPTIONS: Deferred Management Action

Under Amendment 6, if a management trigger is tripped at any time, the Board must take the corresponding action. However, the following options provide the Board flexibility to defer management action when a management trigger is tripped and certain criteria are met. The Board may choose more than one option, unless it chooses Option A (status quo): No Deferred Management Action. Options C, D and E are invalid if the Board chooses Tier 1, Sub-option C3 (no F target management trigger).

These options were developed in response to the Board's concern about the frequent need for management action due to triggers tripping with each stock assessment update or benchmark. Stock assessment updates are typically conducted about every 2 years with benchmark assessments conducted about every 5 years. The alternative Options B-F would defer management action until the following stock assessment. The Board can request an additional stock assessment or request a change to the stock assessment schedule at any time.

Option A (status quo): No Deferred Management Action.

If any (or all) of the management triggers are tripped following a benchmark stock assessment or assessment update, the Board is required to respond to that trigger regardless of when the last management action was implemented in response to any management trigger.

Option B: Management action may be deferred until the next assessment if it has been less than three years since the last management action was implemented in response to a management trigger.

If any (or all) of the management triggers are tripped following a benchmark stock assessment or assessment update, and it has been less than three years since the last management action was implemented (i.e., the assessment incorporates less than three years of data under the new fishery regulations) in response to a management trigger, the Board may defer the management response until the management triggers are reevaluated after the next stock assessment.

Option C: Management action may be deferred until the next assessment if the F target management trigger is tripped and SSB is above the target.

If the F target management trigger is tripped but SSB is at or above the SSB target, the Board may defer the management response until the management triggers are reevaluated after the next stock assessment.

Option D: Management action may be deferred until the next assessment if the F target management trigger is tripped and SSB is projected to increase or remain at the current level over the next five years.

If the F target management trigger is tripped, and if none of the SSB management triggers are tripped and projections indicate SSB will increase or remain at the current level over the next five years, the Board may defer the management response until the management triggers are reevaluated after the next stock assessment.

Option E: Management action may be deferred until the next assessment if the F target management trigger is tripped and there is at least a 75% probability of SSB remaining above the SSB threshold over the next five years.

If the F target management trigger is tripped, and if none of the SSB management triggers are tripped and projections indicate SSB has at least a 75% probability of remaining above the SSB threshold over the next five years, the Board may defer the management response until the management triggers are reevaluated after the next stock assessment.

Option F: If a management trigger trips after the Board has already initiated action in response to a different management trigger, the Board can defer management action in response to the subsequent trigger until the next assessment.

For example, this scenario would most likely occur if the Board selects a new recruitment trigger that would require reducing F in response. The recruitment trigger could trip and the Board could initiate action in response; however, a few months later an F or SSB trigger could trip based on results of a stock assessment. Under this option, the Board could defer responding to the F or SSB trigger until the next assessment because the Board is already taking action in response to the recruitment trigger.

Figure 2a. Summary of management trigger options Tiers 1-2: fishing mortality (F) and female spawning stock biomass (SSB) triggers.

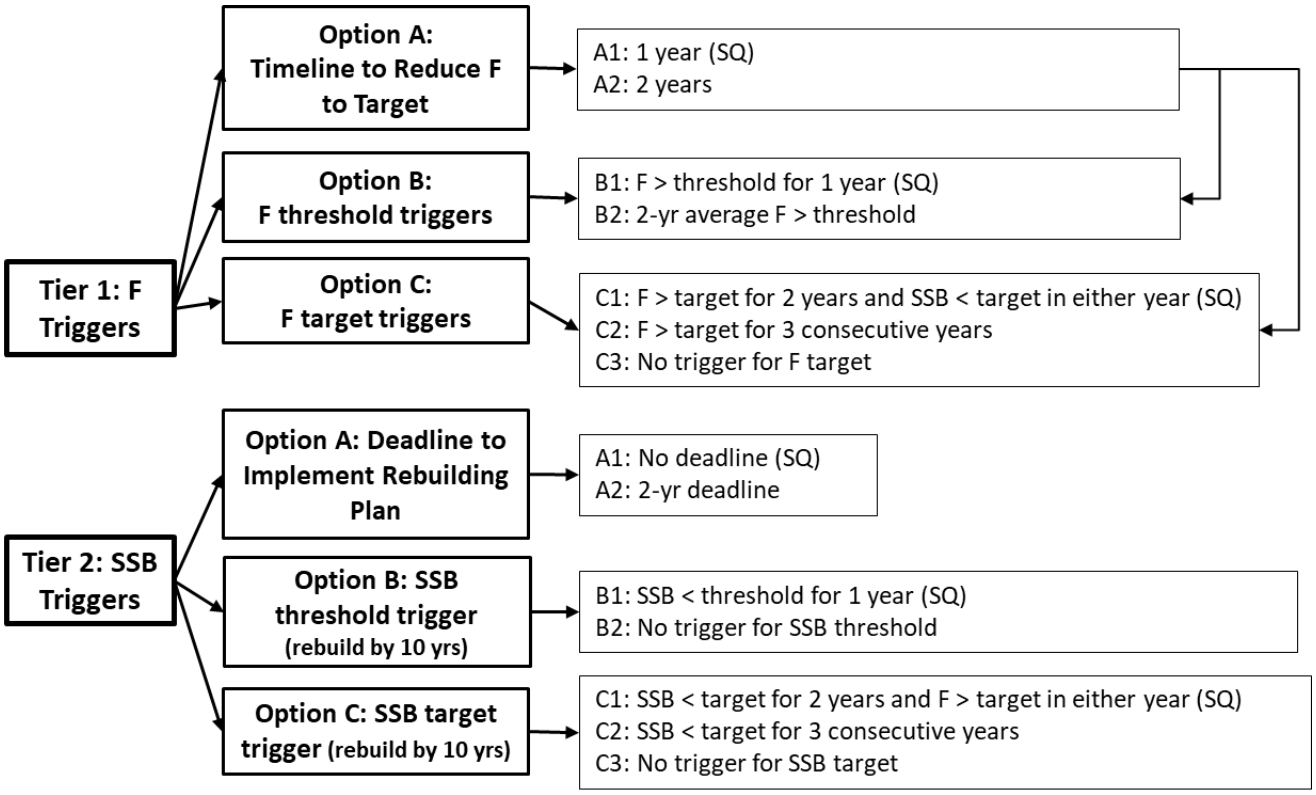


Figure 2b. Summary of management trigger options Tier 3: recruitment-based trigger.

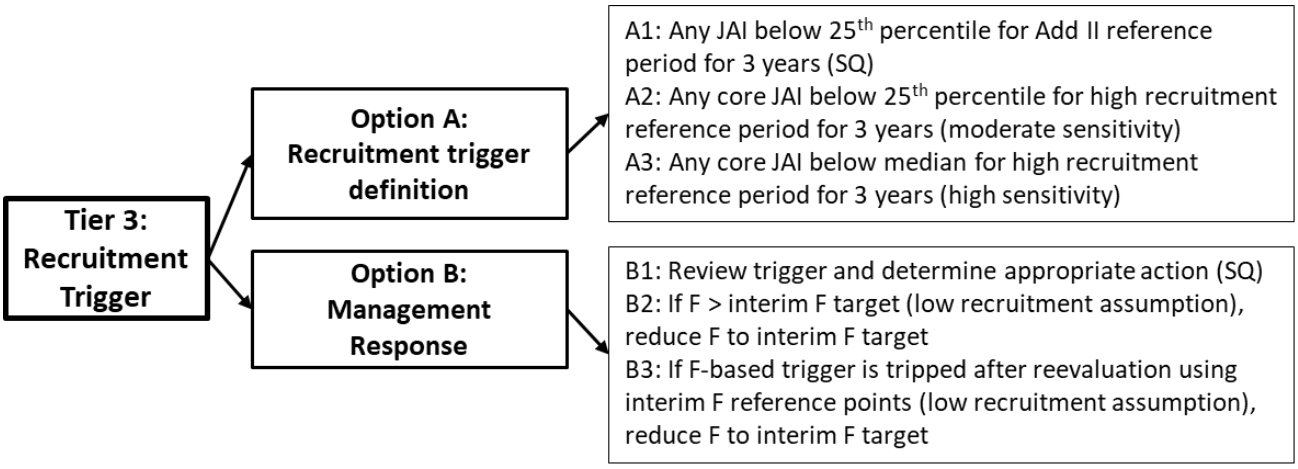
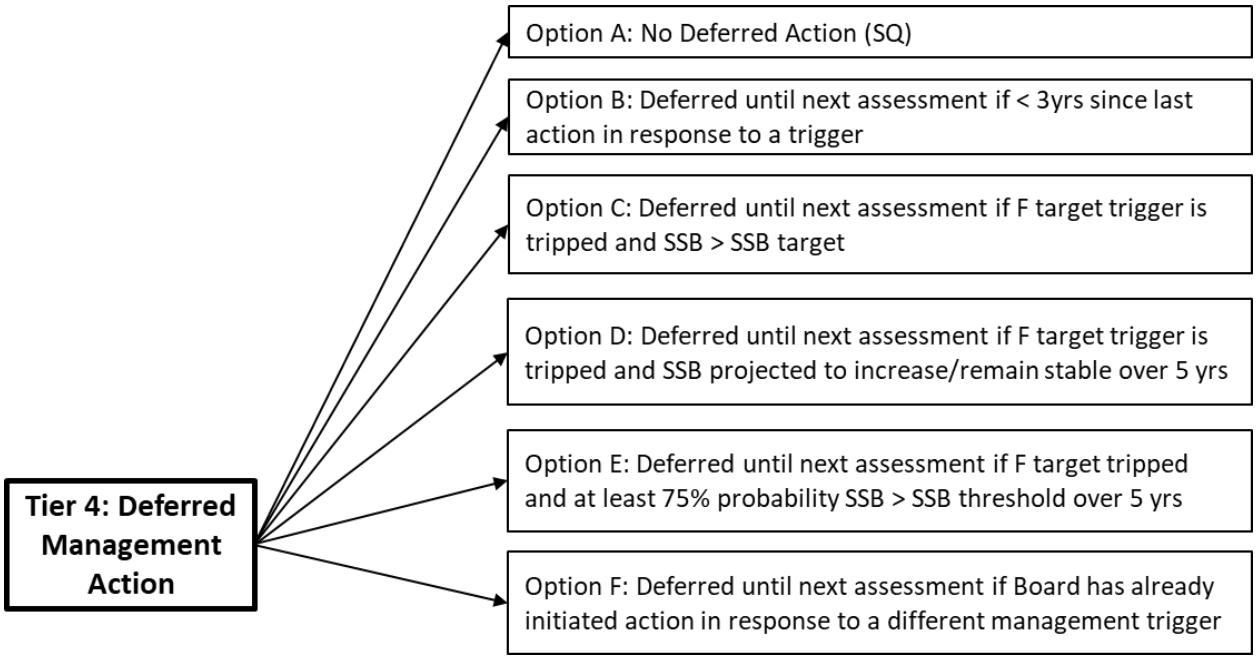


Figure 2c. Summary of management trigger options Tier 4: deferred management action.



4.2 RECREATIONAL FISHERY MANAGEMENT MEASURES

4.2.1 Size Limits, Bag Limit, and Seasons

Ocean recreational fisheries are constrained by a one fish bag limit and a slot limit of 28 inches to less than 35 inches. Chesapeake Bay recreational fisheries are constrained by a one fish bag limit and a minimum size of 18 inches. All bag limits are per person per day. All minimum and maximum size limits are in total length. States are required to maintain the same seasons that were in place in 2017.[12]

4.2.2 Measures to Address Recreational Release Mortality

Recreational releases are fish caught and released alive during recreational fishing trips. A proportion of releases die as a result of that fishing interaction, which is referred to as release mortality (or dead releases). The number of striped bass that die after being caught and released is estimated by multiplying the total number of live releases by an estimated rate of

[12] Some states have implemented alternative recreational size limits, bag limits, and seasons through conservation equivalency, which are maintained through current (approved in 2020) CE programs and state implementation plans from Addendum VI to Amendment 6. See Table 10 in *Section 9.0* for each state's 2020 recreational measures. Maryland's updated summer no-targeting closure dates (changed from August 16-31 closure in 2020 to July 16-31 closure in 2021) was discussed at the August 2021 Board meeting.

hooking mortality. The stock assessment currently applies a 9% hooking mortality rate to all recreationally released striped bass. This does not mean that every time a fish is released alive it has a 9% chance of dying. Under some conditions, the released fish has a higher or lower probability of dying, but overall, coastwide, it is assumed that 9% of all striped bass released alive die.

This 9% hooking mortality rate estimate is from a study by Diodati and Richards (1996) which took place in a saltwater environment and encompassed a range of variables including hook types, hooking locations, and angler experience levels. The TC conducted a meta-analysis of other striped bass release mortality studies which confirmed that an overall 9% release mortality rate accounts for the variation in conditions and factors that attribute to release mortality coastwide.

Since 1990, roughly 90% of all striped bass caught recreationally were released alive either due to cultural preferences (i.e., fishing with the intent to catch and release striped bass) or regulation (e.g., the fish is not of legal size, was caught out of season, or the angler already caught the bag limit) (Figure 12). Each year since 2017, more fish were estimated to have died from catch and release fishing than were harvested by the recreational fishery. For example, 2.76 million fish are estimated to have died from catch and release fishing in 2020, whereas 1.71 million fish were harvested in 2020 (Table 11). Since release mortality accounts for a significant proportion of total fishing mortality, Addendum VI sought to lower the rate at which fish die after being released by requiring the use of non-offset circle hooks when fishing for striped bass with bait because circle hooks have been proven to help reduce rates of gut-hooking when fished correctly. In addition to hook type, studies have shown other factors influence release mortality as well, including environmental conditions (e.g., salinity, air and water temperatures), angler experience, and angler behavior (e.g., how fish are handled). Addendum VI also encouraged states to develop education campaigns to increase compliance with circle hook regulations and to encourage responsible angler behavior.

If management action is taken to influence where mortality (harvest vs. discard) is coming from, managers must consider the impacts those actions will have on the fishery. For example, management measures focusing on reducing recreational releases could discourage participation from anglers that value food fish and negatively impact industries that cater to those anglers.

The current management program primarily uses bag limits and size limits to control harvest, and is not designed to control the catch and release fishery which makes it difficult to control overall fishing mortality. Some stakeholders value the ability to harvest striped bass, either commercially or recreationally, while others value the experience of fishing for striped bass regardless of whether they are able to retain fish. The acceptable proportion of release mortality in total removals should reflect the management objectives for the fishery. Nonetheless, in order to better control all sources of fishing mortality, managers could consider additional gear restrictions to help increase the chance of survival after being released, or

additional effort controls (i.e., time and area closures) to reduce the number of trips interacting with striped bass and thus the overall number of striped bass released alive.

In addition to the circle hook requirement implemented through Addendum VI (Option A. Status Quo), the Board could consider the following types of options to address recreational release mortality:

- Option B. Effort Controls (Seasonal Closures)
- Option C. Gear Restrictions
- Option D. Outreach and Education

Although the impact of many of these options on the stock are difficult to quantify, they are intended to reduce the number of recreational releases or improve post-release survival. The Board could select one or more sub-options from one or more primary option categories that would be implemented in addition to the status quo circle hook measures.

Option A. Status Quo (Addendum VI circle hook measures)
Under this option, the circle hook requirement implemented through Addendum VI to Amendment 6 (Addendum VI Section 3.2) would remain in place <u>as the only measure implemented</u> specifically to address recreational release mortality:

> *The use of circle hooks, as defined herein, is required when recreationally fishing for striped bass with bait, which is defined as any marine or aquatic organism live or dead, whole or parts thereof. This shall not apply to any artificial lure with bait attached. A circle hook is "a non-offset hook where the point is pointed perpendicularly back towards the shank". The term "non-offset" means the point and barb are in the same plane as the shank (e.g. when the hook is laying on a flat surface, the entire hook and barb also lay flat). States have the flexibility to further specify details of the regulation to address specific needs of the state fishery. In order to promote the use of circle hooks, states are encouraged to develop public education and outreach campaigns on the benefits of circle hooks when fishing with bait. The intent of the requirement is to reduce striped bass discard mortality in the recreational fishery. It is recommended that striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury…*
>
> *The use of circle hooks by anglers targeting striped bass with bait, live or chunk, has been identified as a method to reduce the discard mortality of striped bass in recreational fisheries. When a circle hook begins to exit the mouth of a fish, the shape causes the shaft to rotate towards the point of resistance and the barb is more likely to embed in the jaw or corner of the fish's mouth. Circle hooks can reduce rates of "gut-hooking" and lower the likelihood of puncturing internal organs if the hook is swallowed…*

For the following Options B – D, any sub-options selected would be implemented in addition to the current circle hook requirements described above in Option A (status quo).

Option B. Effort Controls (Seasonal Closures)

Recreational release mortality could be addressed by reducing fishing effort in the recreational fishery through implementation of seasonal closures, which are intended to reduce the number of live releases by reducing the number of fishing trips (effort) interacting with striped bass. The following options outline a variety of seasonal closures for consideration.[13] Some of the closure options would offer additional benefits to the stock by reducing effort during seasons associated with higher post-release mortality rates or by protecting spawning or pre-spawn fish, which could contribute to stock rebuilding. When considering effort controls, the Board must weigh the cost of limiting access to the fishery with the potential benefit of decreasing recreational release mortality. Current recreational seasons are summarized in Figures 3 and 4.

Seasonal closures could be no-harvest closures (i.e., catch and release fishing is allowed) or no-targeting closures (i.e. no person may take, attempt to take, target, or have in possession any striped bass). The most appropriate approach may depend on the reason for the closure; for example, implementing a no-targeting closure during high temperature periods when release mortality rates are higher. The majority of the proposed options are no-targeting closures in order to address recreational releases resulting from both harvest trips and catch-and-release fishing trips. Although there are added enforceability concerns and uncertainty about angler compliance with no-targeting closures, the PDT assumes maximum reduction of effort, and thus a reduction in number of releases would be achieved with a no-targeting closure. While no-harvest closures would reduce the number of fish harvested, angler behavior may shift to catch-and-release fishing, thereby increasing the number of recreational releases which is counter to the objective of reducing release mortality.

It is important to note that fishing trips targeting other species that incidentally catch and release striped bass would still occur regardless of closure type. For example, an average of 24% of all trips interacting with striped bass in 2018 and 2019 were non-targeted trips or trips where striped bass was the secondary target species. These trips would likely still occur during a striped bass no-targeting closure. Additionally, seasonal closures for striped bass may shift effort to targeting other species or to other times of year when the striped bass fishery is open.

A coastwide closure would ensure consistency in the timing of closures across all states, but would present an equitability challenge. Recreational fisheries operate very differently along the coast based on timing (availability of fish), among other biological, environmental, and socioeconomic considerations, so coastwide closures would result in different levels of effort

[13] In the criteria for CE proposals for Addendum VI, the TC noted season closures less than two weeks duration are unlikely to be effective. For that reason, the following options do not include any closures less than two weeks duration.

reduction across states. State-specific or regional closure options could help account for these differences, but this may result in a patchwork of season closures across the coast. States would need to develop closure proposals to pursue through their state public processes and submit for TC review and Board approval as part of state implementation plans.

Note on Estimating Reduction in Removals: No-targeting closures considered for Draft Amendment 7 are not intended to achieve a specific reduction in removals. Estimating the reduction in removals from a no-targeting seasonal closure depends on assumptions about changes in angler behavior, which is highly uncertain. The TC has not established a standardized method for estimating the reduction in removals from a no-targeting closure.[14] Given the no-targeting closure options considered in Draft Amendment 7 (i.e., potential inclusion of no-targeting closures in the striped bass management program) as well as the potential for states to propose no-targeting closures in future CE proposals, the PDT recommends the Board task the TC to establish such methods in advance of implementation of subsequent management actions. The TC may need guidance from the Board on this task.

If sub-option B1 (state-specific closures) is selected, the Board must also consider options under Tier 1 to determine applicability of existing no-targeting closures. Sub-option B2 (spawning closures) can be selected independent of or in addition to sub-option B1.

> **Sub-option B1. State-Specific Two-Week Closures:** All recreational targeting of striped bass would be prohibited for a minimum two-week period to reduce fishing effort during times when the striped bass fishery is particularly active in each state. As defined in sub-options B1-a and B1-b, a minimum threshold of directed trips targeting striped bass will be used to define "active" waves for each state in which to implement its closure. In addition to this criteria, state implementation plans should consider protection for spawning and pre-spawn fish, extreme air and water temperatures, and relevant water quality data (dissolved oxygen, salinity, etc.), as well as socioeconomic considerations and regulatory consistency within shared waterbodies. If this options is selected, CE would not be permitted.
>
> > **B1-a. Minimum 15% Directed Trips:** Each state's closure must occur during a Wave with at least 15% of the state's annual striped bass directed trips, as provided in Table 3. At least two waves in each state/region meets this 15% minimum threshold. Considering the limited availability of MRIP data for Pennsylvania, Potomac River Fisheries Commission, and District of Columbia, those three jurisdictions would determine which state listed in Table 3 most closely aligns with their distribution of effort.

[14] In their review of Addendum VI CE proposals, the TC noted "the TC supports the use of closed seasons to reduce effort and dead discards, but stresses that the predicted savings, particularly from a "no targeting" provision, are highly uncertain due to current data limitations and predicting changes in angler behavior."

B1-b. Minimum 25% Directed Trips: Each state's closure must occur during a Wave with at least 25% of the state's annual striped bass directed trips, as provided in Table 3. At least one wave in each state/region meets this 25% minimum threshold. Considering the limited availability of MRIP data for Pennsylvania, Potomac River Fisheries Commission, and District of Columbia, those three jurisdictions would determine which state listed in Table 3 most closely aligns with their distribution of effort.

Table 3. Proportion of each state's total annual striped bass directed trips (primary and secondary target) by wave for 2017-2019. Note: the distribution of directed trips reflects closures that were already in place in 2017-2019 and so may not fully reflect when fish are available. Source: MRIP

	Jan-Feb Wave 1* Percent	Mar-Apr Wave 2* Percent	May-Jun Wave 3 Percent	Jul-Aug Wave 4 Percent	Sep-Oct Wave 5 Percent	Nov-Dec Wave 6* Percent
MAINE	0.0%	0.0%	34.7%	41.6%	23.7%	0.0%
NEW HAMPSHIRE	0.0%	0.0%	25.6%	53.7%	20.8%	0.0%
MASSACHUSETTS	0.0%	2.3%	33.7%	34.5%	23.8%	5.7%
RHODE ISLAND	0.0%	12.9%	30.3%	20.6%	19.2%	17.1%
CONNECTICUT	0.0%	22.9%	29.9%	18.7%	13.2%	15.3%
NEW YORK	0.0%	21.3%	26.3%	13.5%	20.3%	18.6%
NEW JERSEY	0.0%	24.7%	18.4%	4.1%	11.7%	41.1%
DELAWARE	0.0%	30.9%	15.3%	8.1%	7.8%	38.0%
MD CHES BAY	0.0%	14.6%	21.1%	26.7%	17.7%	19.9%
VA CHES BAY	0.0%	7.7%	5.5%	1.6%	15.0%	70.1%
MD OCEAN	0.0%	0.6%	20.7%	0.4%	40.7%	37.6%
VA OCEAN	0.0%	1.3%	24.1%	31.4%	0.0%	43.2%
NC OCEAN	5.1%	9.0%	12.2%	17.8%	1.7%	54.3%

*The Fishing Effort Survey is not administered in any state except NC during Wave 1, nor in ME during Waves 2 and 6.

***Tier 1. Applicability of Existing No-Targeting Closures*:** If sub-option B1 is selected, the Board needs to consider whether the summer no-targeting closures implemented in 2020 by Maryland and PRFC through CE to meet the required Addendum VI reduction would also meet the new seasonal closure requirement.

Option A. Existing no-targeting closures implemented in 2020 would fulfill the requirements of sub-option B1.

Option B. Existing no-targeting closures implemented in 2020 would not fulfill the requirements of sub-option B1. States that implemented no-targeting closures in 2020 would need to choose between the following actions:

- Implement an additional closure to meet the new seasonal closure requirement as selected in sub-option B1; OR
- Implement only the new seasonal closure requirement as selected in sub-option B1, and implement the FMP standard size limit for the Chesapeake Bay recreational fishery *(Section 4.2.1)*.

Sub-option B2. Spawning Area Closures: The Board can select either or both of the following sub-options B2-a and B2-b. Multiple states currently have spawning closures in place with closure boundaries defined by those states. Existing spawning closures would be applied toward meeting the requirements of the selected option(s).[15] Spawning area closures during the spawning season could contribute to stock rebuilding by eliminating harvest and/or reducing releases of spawning and pre-spawn fish. Reducing releases during this time is particularly important to reduce stress and injury to fish as they move into lower salinity spawning areas. If new information on the timing of striped bass spawning is available in the future, the TC would conduct a review of that research and recommend changes to the timing of spawning closures if needed. If this option is selected, CE would not be permitted.

Prior to implementation, if sub-option B2-a and/or sub-option B2-b is selected, all existing spawning closure boundaries and new proposed spawning closure boundaries must be reviewed by the TC and included as part of state implementation plans.

B2-a. No-Harvest Spawning Closure Required: All recreational harvest of striped bass would be prohibited during Waves 1 and 2 (January through April) in the following spawning areas to protect pre-spawn and spawning fish: Chesapeake Bay, Delaware River/Bay, Hudson River, and Kennebec River. States bordering these areas will determine the boundaries of closures. Prohibiting harvest for a long period of time may eliminate some striped bass trips altogether, and therefore reduce releases, during this period. Closures prohibiting recreational harvest in spawning areas have already been implemented by multiple states during Wave 1 (Jan-Feb) and/or during all or part of Wave 2 (Mar-Apr) (Figure 4).

B2-b. No-Targeting Spawning Closure Required: All recreational targeting of striped bass would be prohibited for a minimum two-week period on all spawning grounds (not necessarily the entire spawning area) during Wave 2 (March-April) or Wave 3 (May-June), as determined by states to align with peak spawning. States will determine the boundaries of spawning ground closures. Closures prohibiting recreational targeting on spawning grounds have already been implemented in Maine (Kennebec River), New Jersey (Delaware River), and Maryland (Chesapeake Bay) during part of Wave 2 and/or Wave 3 (Figure 4).

[15] For example, if sub-option B2-a was selected and a state already has a no-harvest closure in place for Waves 1 and 2, that state would already be considered in compliance with the closure requirement.

Figure 3. 2021 recreational seasons in ocean waters by state.

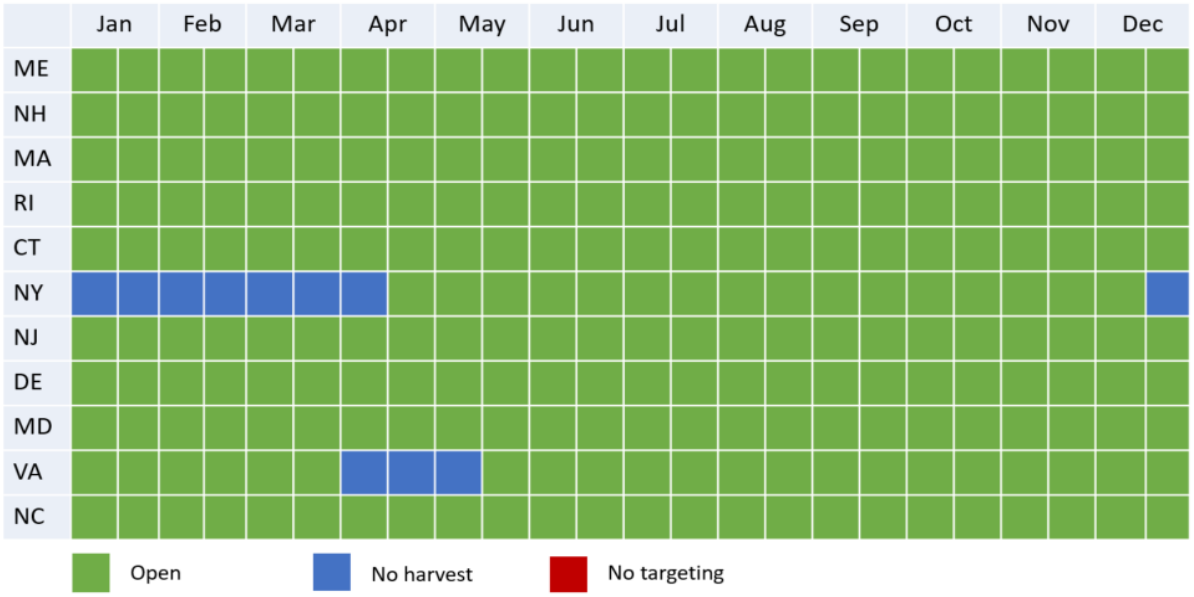
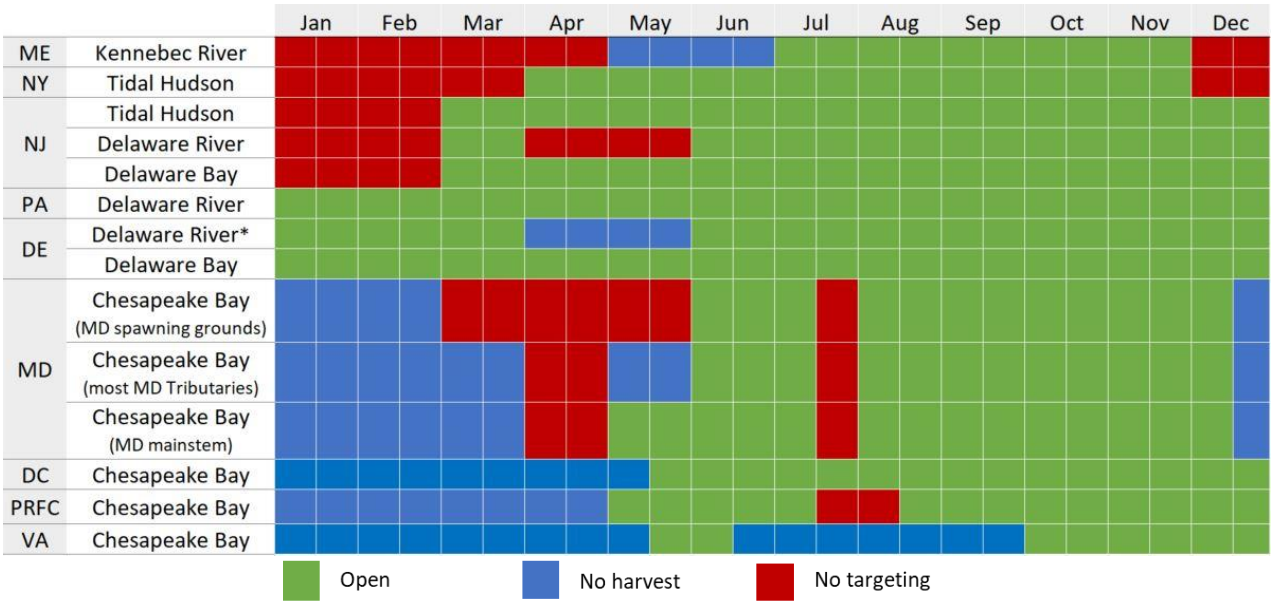


Figure 4. 2021 recreational seasons in the Kennebec River, Hudson River, Delaware River/Bay, and the Chesapeake Bay. Multiple states have spawning closures in place during the spawning season with spawning closure boundaries defined by those states.

Updated April 6, 2022: A correction was made to the New York Tidal Hudson section in Figure 4 showing the current closures in the Tidal Hudson in New York are no-targeting closures.



**In addition to Delaware's spawning closure in the Delaware River, the Nanticoke River and C & D Canal spawning grounds are also closed to harvest in Delaware during the spawning season.*

Note: Refer to Table 10 in Section 9.0 for recreational closure dates by state. Figures 3 and 4 summarize seasons for the recreational fishery only since Draft Amendment 7 considers seasonal closure options for the recreational fishery only. For a summary of commercial seasons by state, refer to Table 9 in Section 9.0.

Option C. Additional Gear Restrictions

In addition to the status quo circle hook requirement, the Board could consider additional gear restrictions outlined in the following options to increase the chance of survival of striped bass caught and released in the recreational fishery. The benefit of gear restrictions (i.e., how many additional fish could be saved) is difficult to quantify for several reasons, including: 1) it is unknown how many anglers already use these tactics; 2) possible non-compliance, especially with management measures that can only be observed on the-water and in real-time; and 3) enforcement challenges related to proving angler intent or target species (i.e., gear restrictions are difficult to enforce if the gear is acceptable to use when targeting a different species). Nonetheless, these options would be expected to result in a favorable trend towards a reduction in release mortality.

The Board may select one or both of the following sub-options C1 and C2.

> **Sub-option C1**: Recreational anglers would be prohibited from using any device other than a nonlethal device to remove a striped bass from the water or assist in the releasing of a striped bass. A non-lethal device means any tool used in the removal of striped bass from the water or to assist in the releasing of striped bass that does not pierce, puncture, or otherwise cause invasive damage to the fish that may result in its mortality. Some states already have regulations that ban the use of gaffs, but the language presented in this option would encompass a broader suite of lethal devices, including gaffs.
>
> **Sub-option C2**: Striped bass caught on any unapproved method of take would be returned to the water immediately without unnecessary injury. The Board approved this language on incidental catch as guidance to Addendum VI in March 2021; this guidance could not be a compliance criterion as part of Addendum VI since incidental catch was not originally part of Addendum VI. Selecting this option would make this incidental catch provision a requirement under Amendment 7 for striped bass that are incidentally caught on any unapproved method of take, including non-circle hooks with bait attached (as implemented through Addendum VI).

Option D. Outreach and Education

States have already implemented outreach and education campaigns related to the use and benefits of circle hooks and to encourage best handling and fishing practices, as recommended by Addendum VI. The following options are intended to more explicitly recognize those efforts as part of Amendment 7. ***The Board may select sub-option D1 or D2.***

> **Sub-option D1**: States would be required to promote best striped bass handling and release practices by developing public education and outreach campaigns. States must provide updates on public education and outreach efforts in annual state compliance reports. Best practices could include**:**

- Be attentive and set the hook immediately to prevent the fish from swallowing the hook (setting the hook is not necessary with circle hooks).
- If the hook is swallowed, do not forcefully remove it. Cut the line off as close to the mouth as possible and then release the fish.
- Leave the fish in the water when possible, including while removing the hook, to minimize stress and injury to the fish. If you need to remove the fish from the water, wet your hands or use a wet rag in order to preserve the protective mucous layer on the outside of the fish.
- Don't use the gills or eyes as a handhold. On larger fish, support under the belly.
- Reduce the fight time.
- Once an angler has retained their bag limit, consider targeting a different species.

Sub-option D2: It is recommended states continue to promote best striped bass handling and release practices by developing public education and outreach campaigns. States should provide updates on public education and outreach efforts in annual state compliance reports. Best practices could include those listed in sub-option D1.

4.3 COMMERCIAL FISHERY MANAGEMENT MEASURES

4.3.1 Size Limits

All commercial fisheries are required to maintain their 2017 size limits.[16]

4.3.2 Quota Allocation

Amendment 7 maintains the commercial quotas from Addendum VI to Amendment 6.[17] Table 4 provides the commercial quota in pounds for the ocean region and for Chesapeake Bay. The Chesapeake Bay commercial quota is allocated to Maryland, Virginia, and the Potomac River Fisheries Commission per the jurisdictions' mutual agreement. Table 5 provides each state's commercial quota for the ocean region.

[16] Some states have implemented alternative commercial size limits through conservation equivalency, which are maintained through current (approved in 2020) CE programs and state implementation plans from Addendum VI to Amendment 6. Refer to Table 9 in *Section 9.0* for each state's 2020 commercial regulations.

[17] Some states have implemented adjusted commercial quotas and/or reallocated commercial quota to the recreational sector through conservation equivalency, which are maintained through current (approved in 2020) CE programs and state implementation plans from Addendum VI to Amendment 6. Refer to Table 8 in *Section 9.0* for each state's quota for 2020, including CE-adjusted quotas where applicable.

Table 4. Ocean Region and Chesapeake Bay Commercial Quota

Region	Quota (Pounds of Fish)
Chesapeake Bay Total	2,588,603
Ocean Total	2,333,408

Table 5. Ocean region commercial quota.

State	Quota (Pounds of Fish)
Maine	154
New Hampshire	3,537
Massachusetts	713,247
Rhode Island	148,889
Connecticut	14,607
New York	652,552
New Jersey	197,877
Delaware	118,970
Maryland	74,396
Virginia	113,685
North Carolina	295,495
Ocean Total	2,333,408

Note: Refer to Table 8 in Section 9.0 for CE-adjusted quotas, where applicable, for fishing year 2020.

Quotas are allocated on a calendar year basis.[18] In the event a state exceeds its allocation, the amount in excess of its annual quota is deducted from the state's allowable quota in the following year.

4.3.2.1 Commercial Quota Transfers

Commercial quota transfers are not permitted. In August 2021, concurrent with the development of Draft Amendment 7, the Board initiated Addendum VII to Amendment 6 to consider allowing the voluntary transfer of commercial striped bass quota between states/jurisdictions that have commercial quota. In October 2021, the Board deferred consideration of Draft Addendum VII until May 2022.

[18] North Carolina's fishing year is December 1 – November 30.

4.4 REBUILDING PLAN

The 2018 benchmark stock assessment indicated the striped bass stock is overfished and experiencing overfishing relative to the updated reference points defined in the assessment. By accepting the assessment for management use in 2019, two management triggers were tripped requiring the Board to take action to address both the overfishing and overfished status determinations. Addendum VI was implemented in 2020 to address the overfishing status by implementing measures to reduce F back to F target in 2020. To address the overfished status, the Board must adjust the striped bass management program to rebuild SSB to the target level in a timeframe not to exceed 10 years, no later than 2029. Addendum VI measures are expected to contribute to stock rebuilding, and options for recreational fishery management measures in Draft Amendment 7, including measures to address release mortality (*Section 4.2.2*), could also support stock rebuilding, if implemented.

The stock rebuilding process is iterative in nature given the 10 year rebuilding horizon. The next stock assessment update (expected in 2022) will provide an updated evaluation of stock status that will incorporate two years of management and data under Addendum VI (2020-2021). The most recent estimates of SSB and F currently available for management use are from the 2018 benchmark stock assessment with a terminal year of 2017. The 2022 stock assessment update will provide estimates of SSB and F through 2021, and will update the SSB and F reference point values. Additionally, the 2022 stock assessment will calculate the F rate required to rebuild SSB to the SSB target by no later than 2029 (i.e., F rebuild). F rebuild is distinct from F target such that F target is the F rate required to achieve the SSB target in the long term, with no fixed rebuilding time frame. F rebuild may or may not be lower than F target.

This section includes options to consider which recruitment assumption to apply to rebuilding calculations. This section also outlines the rebuilding plan framework for responding to the 2022 stock assessment results, and considers how the Board could respond to the 2022 assessment if action is needed to achieve stock rebuilding by 2029.

4.4.1 Recruitment Assumption for Rebuilding Calculation

The Board has expressed concern about recent low recruitment estimates and the potential impact of low recruitment levels on the ability of the striped bass stock to rebuild by no later than 2029. Several years of poor recruitment may indicate the stock is entering a low recruitment regime, and levels of removals that were sustainable during average or above average recruitment regimes may not be sustainable in the future.

F rebuild could be calculated by drawing recruitment from the values observed from 1990 to the terminal year of the stock assessment (i.e., the standard recruitment method used in the striped bass stock assessment). However, if recruitment is only drawn from a below-average period instead of the full period from 1990-forward, for example, the F rebuild would be lower. If the population is fished at F rebuild using the standard recruitment method but average

recruitment remains lower than the time series mean, the population may not be able to rebuild to the SSB target by 2029.

As part of the analysis for alternative recruitment trigger options (*Section 4.1*), the TC conducted a change point analysis of the Maryland juvenile abundance index (JAI) to identify periods of high and low recruitment. This analysis (based on JAI data through 2020) identified 1992-2006 as a high recruitment period (i.e., high recruitment regime) and 2007-2020 as a low recruitment period (i.e., low recruitment regime). This translates to years 1993-2007 and 2008-2017 for age-1 model estimates of recruit abundance; the age-1 model estimate of recruit abundance will be updated to include estimates through 2021 during the 2022 assessment.

The following options consider which recruitment assumption would be applied to the rebuilding calculations and projections for the 2022 stock assessment update:

> **Option A (Status Quo)**: Rebuild female SSB to the SSB target level by no later than 2029. F rebuild is calculated to achieve the SSB target by no later than 2029 using the standard recruitment method from the stock assessment.
>
> **Option B**: Rebuild female SSB to the SSB target level by no later than 2029. F rebuild is calculated to achieve the SSB target by no later than 2029 using the low recruitment regime assumption as identified by the change point analysis. Note: This approach is more conservative than Option A. Using the low recruitment assumption in Option B would likely result in a lower F rebuild than under Option A. To achieve a lower F rebuild (i.e., a lower level of fishery removals), more restrictive management measures may be required if Option B is selected as compared to Option A.

4.4.2 Rebuilding Plan Framework

The rebuilding plan framework (Figure 5) specifies how the recruitment assumption selected as part of Amendment 7 (options described in the preceding section) will inform rebuilding calculations and projections in the 2022 assessment update, which will then determine whether action is needed in response to the assessment results.

If the 2022 assessment indicates Amendment 7 management measures (i.e., status quo recreational size/bag limits and status quo commercial measures) are not projected to achieve stock rebuilding by 2029, the Board will need to consider adjusting measures to achieve the rebuilding target. The TC would calculate the percent reduction in removals required to achieve F rebuild, and the Board would then consider new management measures designed to achieve that reduction and achieve F rebuild.

The following options consider the process for how the Board would respond to the 2022 stock assessment if a reduction is needed to achieve stock rebuilding by 2029. The Board is considering these options to potentially allow for a more timely response to the 2022 assessment if a reduction is needed.

Option A (Status Quo): If the 2022 stock assessment results indicate the Amendment 7 measures are not projected to achieve stock rebuilding by 2029 (as calculated using the recruitment assumption specified in Amendment 7), the Board would initiate and develop an addendum to consider adjusting management measures to achieve F rebuild.

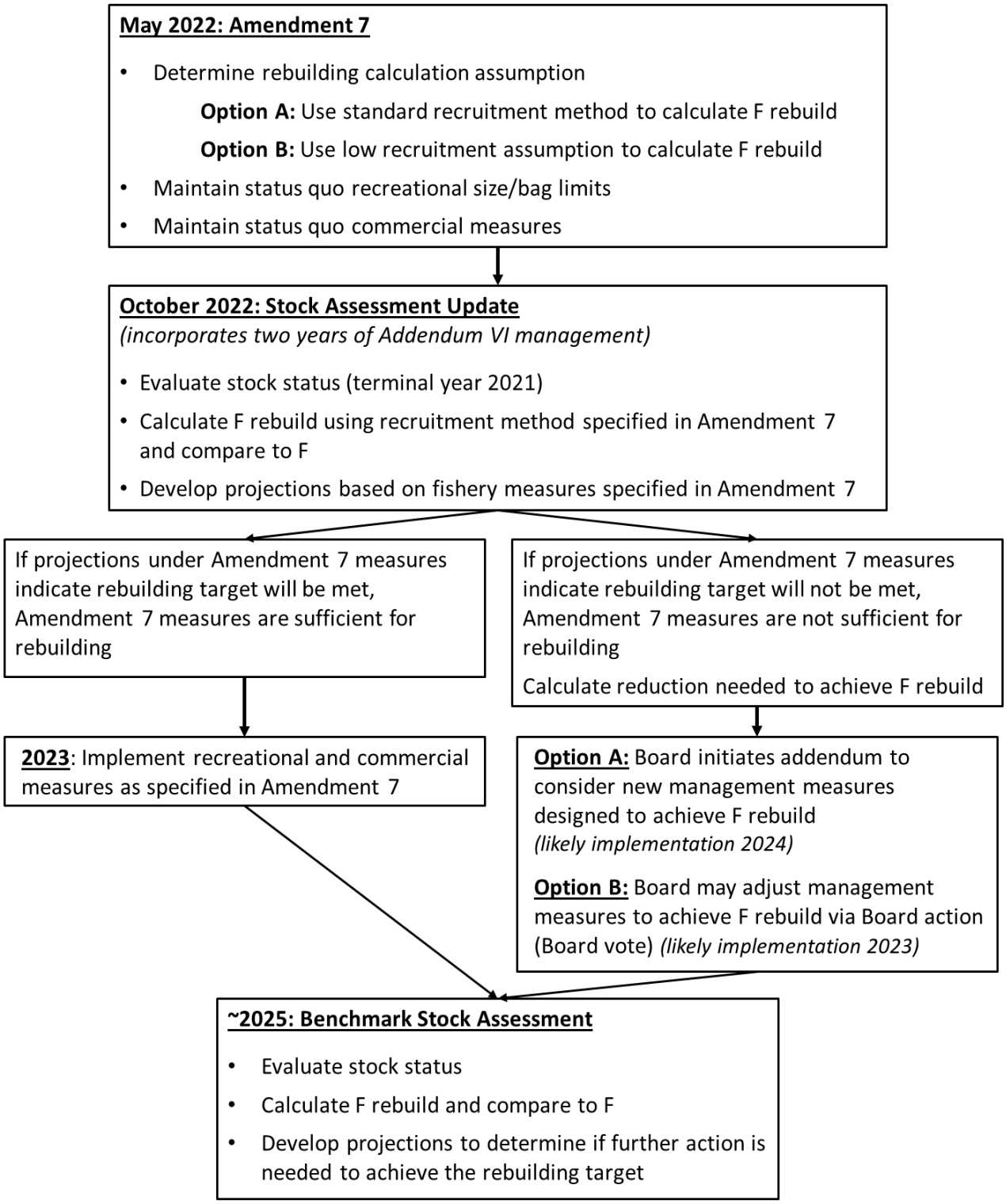
- Under this option, an addendum specifying new management measures could be approved as early as May 2023 with likely implementation in 2024.
- An addendum process includes a public comment period with public hearings and an opportunity to submit written comment on the draft addendum document.

Option B: If the 2022 stock assessment results indicate the Amendment 7 measures have less than a 50% probability of rebuilding the stock by 2029 (as calculated using the recruitment assumption specified in Amendment 7) and if the stock assessment indicates at least a 5% reduction in removals is needed to achieve F rebuild, the Board may adjust measures to achieve F rebuild via Board action.

- Under this option, the Board could take action to change management measures in response to the 2022 assessment by voting to pass a motion at a Board meeting; if a Board motion specifying new management measures was passed in 2022, new management measures could likely be implemented for at least part of the 2023 fishing season.
- Under this option, public comment could be provided during Board meetings per the Commission's guidelines for public comment at Board meetings, and/or public comment could be provided in writing to the Board per the Commission's timeline for submission of written public comments prior to Board meetings.

This section continues on the next page.

Figure 5. Framework to rebuild to SSB target level by no later than 2029.



4.5 HABITAT CONSERVATION AND RESTORATION RECOMMENDATIONS

Each State should engage their county, township, and other local jurisdictions to implement protection for striped bass habitat to ensure the sustainability of that portion of the migratory or resident stock. Such a program should inventory historical habitats, identify habitats presently used, specify those targeted for recovery, and impose or encourage measures to retain or increase the quantity and quality of striped bass essential habitats.

Habitats essential for maintaining striped bass populations include spawning, nursery, wintering areas, and migration corridors. Each state jurisdiction should monitor those habitats located within state waters to ensure adequate water and substrate quality; the quantity, timing, and duration of freshwater flows into spawning and nursery areas; water, substrate quality, and integrity of wintering areas; and open and free access to migration corridors, especially ocean inlets. Federal agencies should work with state partners in addressing these needs in state waters and in the EEZ. State and Federal agencies should partner to develop detailed maps of striped bass habitat use, by life stage, to provide a basis for regulatory review of proposed federal or state actions which could adversely affect striped bass populations. Parameters of particular concern to which jurisdictions should be attentive include nutrient loading, long-term adverse changes in water quality, hypoxia events, substrate extraction in areas used by striped bass (e.g., proposed Corps of Engineers sand mining off NJ and NC, as well as navigational dredging), and projects which could potentially jeopardize striped bass habitat quality or access.

4.5.1 Preservation of Existing Habitat

1) States in which striped bass spawning occurs should notify in writing the appropriate federal and state regulatory agencies of the locations of habitats used by striped bass. Regulatory agencies should be advised of the types of threats to striped bass populations and recommended measures which should be employed to avoid, minimize, or eliminate any threat to current habitat quantity or quality.

2) Where available, States should seek to designate striped bass essential habitats for special protection. Tools available include High Quality Waters, Outstanding Resource Waters, and Fish Habitats of Concern (as defined by ASMFC, in preparation) designations. Designations should, where possible, be accompanied by requirements of nondegradation of habitat quality, including minimization of nonpoint source runoff, prevention of significant increases in contaminant loadings, and prevention of the introduction of any new categories of contaminants into the area (via restrictions on National Pollutant Discharge Elimination System (NPDES) discharge permits for facilities in those areas).

3) State fishery regulatory agencies should develop protocols and schedules for providing input on water quality regulations to the responsible agency, to ensure that water quality needs for striped bass are met.

4) State fishery regulatory agencies should develop protocols and schedules for providing input on Federal permits and licenses required by the Clean Water Act, Federal Power Act, and other appropriate vehicles, to ensure that striped bass habitats are protected.

5) Water quality criteria for striped bass spawning and nursery areas should be established or existing criteria should be upgraded to levels which are sufficient to ensure successful reproduction. Any action taken should be consistent with Federal Clean Water Act guidelines and specifications.

6) All State and Federal agencies responsible for reviewing impact statements and permit applications for projects or facilities proposed for striped bass spawning and nursery areas should ensure that those projects will have no or only minimal impact on local stocks. Natal rivers of stocks considered depressed or undergoing restoration are of special concern. Any project which would result in the elimination of essential habitat should be avoided.

7) State agencies should engage with local jurisdictions during comprehensive development planning to ensure impacts to striped bass spawning and nursery areas are avoided or minimized.

4.5.2 Habitat Restoration and Improvement

1) Each State should survey existing literature and data to determine the historical extent of striped bass occurrence and use within its jurisdiction. An assessment should be conducted of those areas not presently used for which restoration is feasible.

2) Every effort should be made to eliminate existing contaminants from striped bass habitats where a documented adverse impact occurs (e.g., PCBs from the Hudson River).

3) States should work in concert with the USFWS and NMFS, Office of Habitat Conservation, to identify federally-regulated hydropower dams which pose significant impediment to striped bass migration and target them for appropriate recommendations during FERC relicensing.

4.5.3 Avoidance of Incompatible Activities

1) Federal and State fishery management agencies should take steps to limit the introduction of compounds which are known to be accumulated in striped bass tissues and which pose a threat to striped bass health or human health.

2) Each State should establish windows of compatibility for activities known or suspected to adversely affect striped bass such as navigational dredging, bridge construction, and dredged material disposal and notify the appropriate construction or regulatory agencies in writing.

3) Projects involving water withdrawal (e.g., power plants, irrigation, water supply projects) should be scrutinized to ensure that adverse impacts resulting from impingement, entrainment,

and/or modification of flow and salinity regimes due to water removal will not adversely impact on striped bass stocks.

4) Each state which encompasses spawning rivers within its jurisdiction should develop water use and flow regime guidelines which are protective of striped bass spawning and nursery areas, and which will ensure the long-term health and sustainability of the stock.

4.5.4 Fishery Practices

The use of any fishing gear deemed by management agencies to have an unacceptable impact on striped bass habitat should be prohibited within appropriate essential habitats (e.g., trawling in spawning areas or primary nursery areas should be prohibited).

4.6 ALTERNATIVE STATE MANAGEMENT REGIMES

Once approved by the Atlantic Striped Bass Management Board, a state may not amend its regulatory program without the approval of the Board, except when implementing more restrictive measures. All other proposed changes to state regulations must be submitted in writing to the Commission. When implementing more restrictive measures, states should notify the Commission of the new measures in its annual compliance report.

Under no circumstances will states be allowed to institute minimum sizes below 18 inches in alternative management regimes.

4.6.1 General Procedures

A state may submit a proposal for a change to its regulatory program or any mandatory compliance measure under this amendment to the Commission. Such changes shall be submitted to the Chair of the Plan Review Team (PRT), who shall distribute the proposal to appropriate groups, including the Board, the PRT, the TC, and the Advisory Panel (AP).

The PRT is responsible for gathering the comments of the TC and the AP. The PRT is also responsible for presenting these comments to the Board for decision.

The Board will decide whether to approve the state proposal for an alternative management program if it determines that it is consistent with the management program detailed in this Amendment.

4.6.2 Management Program Equivalency

Management program equivalency (also known as "conservation equivalency" or CE) refers to actions taken by a state which differ from the specific requirements of the FMP, but which achieve the same quantified level of conservation for the resource under management. It is the responsibility of the state to demonstrate that the proposed management program is equivalent to the FMP standards and consistent with the restrictions and requirements for CE determined by the Board.

The Commission's Conservation Equivalency Policy and Technical Guidance Document (CE Guidance Document) provides specific guidance on development, submission, review and approval of CE proposals[19].

Option A (Status Quo): Board Discretion on Conservation Equivalency Restrictions and Requirements

The Board will determine conservation equivalency. The Board has final discretion regarding the use of CE and approval of CE programs. The Board may restrict the use of CE on an ad hoc basis for any FMP requirement. Restrictions may include, but are not limited to:

- measures that are not applicable for CE;
- restrictions on rationale for pursuing CE;
- limitations on the range of measures that may be proposed (e.g., maximum or minimum size limits)
- the definition of "equivalency" (e.g., based on harvest or total removals; achieving the predicted state-specific or coastwide reduction);
- minimum levels of precision for catch and effort data used in CE proposals;
- whether proposals must include an uncertainty buffer on the reduction/liberalization target;
- if states may implement, without further Board review, alternative measures than those specifically approved by the Board if developed using the same methodology; and
- if additional sampling or fishery monitoring is required.

When setting restrictions, the Board should consider such factors as stock status, stock structure, data availability, range of species, socio-economic information, and management goals and objectives.

The following sets of options consider whether to adopt new default restrictions or requirements for the use of CE (Options B–E). Sub-options selected under Options B–E would automatically apply to new FMP standards approved through Amendment 7 and all

[19] As of September 2021, the CE Guidance Document is under review for potential updates.

subsequent management actions and CE proposals; additional restrictions and requirements for the use of CE could be identified on an ad hoc basis per the Board's discretion (as described above under the Status Quo option). Options B-E are intended to address concerns about the use of CE at the front-end of the CE process (i.e., considering when CE can be used and requirements for CE proposals).[20] For each Option B–E, the Board may select one or more sub-options, as applicable. If a sub-option is not selected under an option, the Status Quo (Board discretion) remains in place on that issue.

To inform consideration of these options, Table 6 outlines the CE programs implemented for Addendum VI.[21]

Table 6. CE programs implemented for Addendum VI

State	Recreational Fisheries	Commercial Fisheries
MA	N/A	Changed size limit (35" minimum) with equivalent quota change
NY	Hudson River: Alternative size limit (18" to 28") to achieve 18% removals reduction in combination with standard Ocean slot	Changed size limit (26" to 38") with equivalent quota reduction
NJ	Alternative size limit (28 to < 38") to achieve 25% removals reduction	Decreased commercial quota reduction (to 0%) with surplus recreational fishery reduction and transferred commercial quota to recreational bonus program fishery (24 to < 28", 1 fish/day)
PA	DE River and Estuary downstream Calhoun St Bridge: Alternative size and bag limit on limited seasonal basis (2 fish/day at 21 to <24" during 4.1–5.31) to achieve 18% removals reduction	N/A
DE	DE River/Bay/tributaries: Alternative slot on limited seasonal basis (20" to <25" during 7.1–8.31) to achieve 20.4% removals reduction in combination with standard Ocean slot	Decreased commercial quota reduction (to -1.8%) with surplus recreational fishery reduction

[20] It is difficult to evaluate the effectiveness of CE programs and their equivalency to the FMP standard after program implementation due to the challenge of separating the performance of management measures and outside variables (like angler behavior and availability of fish). Because of this, options for CE accountability were not developed.

[21] The conflict between allowing flexibility through CE and achieving regulatory consistency among states was most recently realized with the implementation of Addendum VI to Amendment 6. For the recreational fishery, the Addendum implemented measures to reduce recreational removals by 18% coastwide. However, at the state level, some states were predicted to reduce removals by more than 18% (and some by less), but CE proposals only had to achieve an 18% reduction regardless. Also, a majority of states pursued CE and submitted a large number of options for TC review, which raised questions for additional guidelines regarding the development of CE proposals.

Table 6 (continued). CE programs implemented for Addendum VI

MD	Chesapeake Bay: Alternative Summer/Fall for-hire bag limit with restrictions (2 fish, only 1 >28", no captain retention) through increased minimum size (19"), April and two-week Wave 4 targeting closures, and shorter spring trophy season (May 1–15) to achieve 20.6% removals reduction; Ocean: FMP standard slot	Decreased Ocean and Chesapeake Bay commercial quota reduction (to -1.8%) with surplus Chesapeake Bay recreational fishery reduction
PRFC	Alternative Summer/Fall minimum size and bag limit (20" min, 2 fish/day) with a no targeting closure (7.7–8.20) and shorter spring trophy season (May 1–15) to achieve a 20.5% removals reduction	Decreased Chesapeake Bay commercial quota (to -1.8%) with surplus recreational fishery reduction
VA	Chesapeake Bay: Alternative slot limits during 5.16–6.15 (20" to 28") and 10.4–12.31 (20" to 36") and no spring trophy season to achieve a 23.4% removals reduction (reduction was the result of lowering prior bag limit from 2 to 1-fish per angler); Ocean: Alternative slot limit (28" to 36")	Decreased Ocean commercial quota (to -7.7%) and Chesapeake Bay commercial quota (to -9.8%) with surplus recreational fishery reduction

Option B. Restrict the Use of Conservation Equivalency Based on Stock Status
The following options would establish default restrictions on the use of CE for certain fisheries depending on striped bass stock status, as determined by the results of the most recent benchmark stock assessment or assessment update reviewed by the Board. When the stock conditions are met, CE programs would not be approved. Currently existing CE programs would remain in place until Board action is taken on new FMP standards relevant to the specific fishery.

Sub-option B1. Restrictions: CE programs would not be approved when *[sub-options B1-a and B1-b are mutually exclusive; sub-option B1-c may be selected alone or in addition to sub-option B1-a or B1-b]:*

Sub-option B1-a: the stock is at or below the biomass threshold (i.e., overfished). CE programs would not be considered until a subsequent stock assessment indicates stock biomass is above the threshold level.

Sub-option B1-b: the stock is below the biomass target. CE programs would not be considered until a subsequent stock assessment indicates the stock biomass is at or above the target level.

Sub-option B1-c: fishing mortality is at or above the fishing mortality threshold (i.e., overfishing is occurring). CE programs would not be considered until a subsequent stock assessment indicates fishing mortality is below the threshold level.

The stock status restriction(s) selected in Option B1 would apply (at a minimum) to the non-quota managed recreational fisheries in the Ocean region and Chesapeake Bay region, with the exception of the Hudson River, Delaware River, and Delaware Bay recreational fisheries. Most of the concerns surrounding CE, as identified during scoping on the Draft Amendment 7 Public Information Document, pertain to non-quota managed fisheries due to use of uncertain data, modeling assumptions, and challenges measuring the effectiveness of the program post-implementation. Quota-managed fisheries (including commercial fisheries as well as recreational "bonus program" fisheries that operate on a fixed harvest limit with transferred commercial quota[22]) remain accountable to a CE-adjusted quota using census level harvest data. However, non-quota managed fisheries have a CE-adjusted removals target that may be exceeded as subsequently determined by survey-based catch estimates. Commercial state-by-state quota management is also characterized by a wide range of fishery measures (with regards to trip limits, seasons, and gear types) among the states regardless of CE programs being in place, which may have contributed to the minimal concern directed at commercial fishery CE programs.[23] Additionally, the public's concerns were seldom focused on long-standing management program equivalencies for the recreational fisheries in the Hudson River, Delaware River, and Delaware Bay that (due to the size availability of fish in these areas) allow harvest of smaller fish than would otherwise be permitted under the ocean region's measures, hence their exemption here. However, the Board may choose to add to the default list of affected fisheries through Option B2.

Sub-option B2. Applicability: The stock status restrictions selected in Option B1 would apply to the following additional fisheries *[one or more sub-options may be selected]*:

> **Sub-option B2-a**: the Hudson River, Delaware River, and Delaware Bay recreational fisheries
>
> **Sub-option B2-b**: quota-managed recreational fisheries (e.g., "bonus programs")
>
> **Sub-option B2-c**: commercial fisheries (all of which are quota managed)

[22] Currently, only New Jersey operates such a recreational bonus program using commercial quota. Connecticut formerly operated a bonus program but suspended it indefinitely in 2020. Such programs are classified herein as commercial CE programs due to commercial quota basis.

[23] States which have different commercial size limits than the FMP standard (i.e., different from the size limits implemented in 2017) through CE at the time this Amendment was developed include Massachusetts and New York.

Option C. Precision Standards for MRIP Estimates Used in Conservation Equivalency Proposals
The following options would establish default precision standards for MRIP catch and effort estimates used in CE proposals. The options are based on the percent standard error (PSE, a measure of precision) associated with MRIP estimates. NMFS warns that "[MRIP] Estimates should be viewed with increasing caution as PSEs increase beyond 30. Large PSEs—those above 50—indicate high variability around the estimate and therefore low precision."[24] In addition, NMFS is implementing new Recreational Fishing Survey and Data Standards under which estimates will not be published if the PSE is greater than 50 and estimates with a PSE of 30 or greater will be presented with a warning that they "are not considered sufficiently reliable for most purposes, and should be treated with caution".[25]

CE proposals would not be able to use MRIP estimates associated with a PSE exceeding *[only one sub-option may be selected]*:

Sub-option C1: 50

Sub-option C2: 40

Sub-option C3: 30

All MRIP datasets used in CE proposals would be subject to this precision standard. For example, if a CE proposal uses wave- and/or mode-specific data, the PSEs associated with those specific data cannot exceed the selected precision standard.

Should states find themselves unable to propose certain CE programs because of the MRIP precision standard, they are encouraged to increase MRIP Access Point Angler Intercept Survey (APAIS) sampling to improve the PSE associated with their state's MRIP estimates. Increased APAIS sampling is recommended for all states, as resources allow, regardless of CE programming.

Option D. Conservation Equivalency Uncertainty Buffer for Non-Quota Managed Fisheries
The following options would establish a default uncertainty buffer for CE proposals for non-quota managed fisheries. An uncertainty buffer is intended to increase the alternative measures' probability of success in achieving equivalency with the FMP standard (i.e., not exceeding a harvest or removals target). CE programs for quota-managed fisheries have reactive accountability measures of in-season quota monitoring and closures when the quota is reached, and paying back quota overages in the subsequent year. The uncertainty buffer would provide a proactive accountability measure for non-quota managed fisheries operating under CE programs that are not subject to such reactive accountability measures.

[24] See: www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries
[25] See: www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-survey-and-data-standards

Proposed CE programs for non-quota managed fisheries would be required to include an uncertainty buffer of *[only one sub-option may be selected]*:

Sub-option D1: 10%

Sub-option D2: 25%

Sub-option D3: 50%

When CE is pursued to implement new FMP requirements, the uncertainty buffer applies to the percent reduction required or liberalization allowed for the non-quota managed fishery (after any potential transfer of reduction/liberalization between fisheries). For example, if a 20% reduction is required with a 10% uncertainty buffer, CE proposals would need to demonstrate a 22% reduction. Similarly, if a 20% liberalization is allowed with a 10% uncertainty buffer, proposed CE proposals may demonstrate up to an 18% liberalization. The uncertainty buffer still applies when CE is requested separate from an implementation plan (e.g., a CE proposal submitted after a required 20% reduction was implemented would need to demonstrate a 2% reduction rather than no change).

The Board may need to further determine how the buffer is applied for some future management actions, particularly when CE proposals may include measures for both quota-managed and non-quota managed fisheries (e.g., if a reduction can be split between sectors). The Board may request guidance from the TC and/or PRT.

Option E. Definition of Equivalency for CE Proposals with Non-Quota Managed Fisheries
The following options would establish a default definition of what "equivalency" means for CE proposals associated with the implementation of coastwide actions (in non-quota managed fisheries). In other words, the percent reduction or liberalization that must be met in a CE proposal when the FMP standard is projected to have different effects at the coastwide and state-specific levels. The intent is to add transparency and consistency to the use of CE across management actions. Refer to Table 7 for an example of how these options would apply.

Proposed CE programs would be required to demonstrate equivalency to *[only one sub-option may be selected]:*

Sub-Option E1: the percent reduction/liberalization projected for the FMP standard at the coastwide level. (This represents the requirements for CE under Addendum VI to Amendment 6.)

Sub-option E2: the percent reduction/liberalization projected for the FMP standard at the state-specific level.

Table 7. *This table provides a hypothetical example to explain the difference between sub-option E1 and E2. Suppose an FMP standard is adopted that is projected to achieve a 20% change in fishery removals when applied coastwide. However, at the state level, the FMP standard is projected to achieve a 25% change in State A and a 10% change in State B. The sub-options vary in the amount of change that State A and State B would need to demonstrate when pursuing alternative measures to the FMP standard through CE.*

Notably, sub-option E1 may undermine an overall targeted reduction (due to State A's CE) or lead to exceeding an overall targeted liberalization (due to State B's CE). Sub-option E1 may make it impossible for State B to apply for CE under a reduction scenario (no way to meet the higher coastwide reduction amount). Sub-option E2 holds State A's CE to a greater reduction than the coastwide standard, but would allow a greater liberalization than the coastwide standard as well. Sub-option E1 represents the requirements for CE under Addendum VI to Amendment 6.

	State Change to be Demonstrated in a CE Proposal under Each Sub-option	
FMP Standard achieves a 20% change when applied coastwide	Sub-option E1: Use coastwide change	Sub-option E2: Use state-specific change
State A (25% state change under FMP standard)	20%	25%
State B (10% state change under FMP Standard)	20%	10%

4.6.3 *De Minimis* Fishery Guidelines

The ASMFC Interstate Fisheries Management Program Charter (ISFMP Charter) defines *de minimis* as "a situation in which, under the existing condition of the stock and scope of the fishery, the conservation and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coastwide conservation program required by a Fishery Management Plan or amendment," (ASMFC 2016).

4.6.3.1 Qualifications for De Minimis

States may apply for *de minimis* status if, for the last two years, their combined average commercial and recreational landings (by weight) constitute less than one percent (1%) of the coastwide commercial and recreational landings for the same two-year period. When petitioning for *de minimis* status, the state should also propose the type of exemption associated with *de minimis* status. In addition to determining if the state meets the criteria for *de minimis* status, the Board will evaluate the proposed exemption to be certain it does not compromise the goals and objectives of Amendment 7. The States may petition the Atlantic Striped Bass Management Board at any time for *de minimis* status, if their fishery falls below the threshold level. Once *de minimis* status is granted, designated states must submit annual reports to the Management Board justifying the continuance of *de minimis* status. States must include *de minimis* requests as part of their annual compliance reports.

4.6.3.2 Procedure to Apply for De Minimis Status

States must specifically request *de minimis* status each year. Requests for *de minimis* status will be reviewed by the PRT as part of the annual FMP review process (*Section 5.3: Compliance Reports*). Requests for *de minimis* must be submitted to the ASMFC Atlantic Striped Bass FMP Coordinator as a part of the state's yearly compliance report. The request must contain the following information: all available commercial landings data for the current and 2 previous full years of data, commercial and recreational regulations for the current year, and the proposed management measures the state plans to implement for the year *de minimis* status is requested. The FMP Coordinator will then forward the information to the PRT.

In determining whether or not a state meets the *de minimis* criteria, the PRT will consider the information provided with the request, the most recent available coastwide landings data, any information provided by the TC and SAS, and any additional information deemed necessary by the PRT. The PRT will make a recommendation to the Board to either accept or deny the *de minimis* request. The Board will then review the PRT recommendation and either grant or deny the *de minimis* classification.

The Board must make a specific motion to grant a state *de minimis* status, including the measures the state would be excused from implementing. The state should request which measures they would like to be excused from as part of the *de minimis* request.

If landings in a *de minimis* state exceed the *de minimis* threshold, the state will lose its *de minimis* classification, will be ineligible for *de minimis* in the following year, and will be required to implement all provisions of the FMP. If the Board denies a state's *de minimis* request, the state will be required to implement all the provisions of the FMP. When a state rescinds or loses its *de minimis* status, the Board will set a compliance date by which the state must implement the required regulations.

If the coastwide fishery is closed for any reason through Emergency Procedures (*Section 4.7*), *de minimis* states must close their fisheries as well.

Any additional components of the FMP, which the Board determines necessary for a *de minimis* state to implement, can be defined at the time *de minimis* status is granted.

4.7 ADAPTIVE MANAGEMENT

The Board may vary the requirements specified in this Amendment as a part of adaptive management in order to conserve the Atlantic striped bass resource. The elements that can be modified by adaptive management are listed in *Section 4.7.2*. The process under which adaptive management can occur is provided below.

4.7.1 General Procedures

The PRT will monitor the status of the fishery and the resource and report on that status to the Board annually or when directed to do so by the Board. The PRT will consult with TC, the SAS, and the AP in making such review and report.

The Board will review the report of the PRT, and may consult further with the TC, SAS, or AP. The Board may, based on the PRT report or on its own discretion, direct the PDT to prepare an addendum to make any changes it deems necessary. The addendum shall contain a schedule for the states to implement the new provisions.

The PDT will prepare a draft addendum as directed by the Board, and shall distribute it to all states for review and comment. A public hearing will be held in any state that requests one. The PDT will also request comment from federal agencies and the public at large. After a 30-day review period, staff, in consultation with the PDT, will summarize the comments received and prepare a final version of the addendum for the Board.

The Board shall review the final version of the addendum prepared by the PDT, and shall also consider the public comments received and the recommendations of the TC, LEC, and AP. The Board shall then decide whether to adopt, or revise and then adopt, the addendum.

Upon adoption of an addendum by the Board, states shall prepare plans to carry out the addendum, and submit them to the Board for approval according to the schedule contained in the addendum.

4.7.2 Measures Subject to Change

The following measures are subject to change under adaptive management upon approval by the Board:

(1) Goal
(2) Objectives
(3) Management areas and unit
(4) Reference points, including:
    (a) overfishing and overfished definition
    (b) region-specific reference points
(5) Rebuilding targets and schedules
(6) Management triggers and planning horizon
(7) Recreational Fishery Management Measures
(8) Commercial Fishery Management Measures, including:
    (a) commercial quota allocation
(9) Management Program Equivalency
(10) Recommendations to the Secretaries for complementary actions in federal jurisdictions
(11) Any other management measures currently included in Amendment 7

4.8 EMERGENCY PROCEDURES

Emergency procedures may be used by the Board to require any emergency action that is not covered by, is an exception to, or a change to any provision in Amendment 7. Procedures for implementation are addressed in the ASMFC Interstate Fisheries Management Program Charter, Section Six (c)(10) (ASMFC 2016).

4.9 MANAGEMENT INSTITUTIONS

The management institutions for Atlantic striped bass shall be subject to the provisions of the ISFMP Charter (ASMFC 2016). The following is not intended to replace any or all of the provisions of the ISFMP Charter. All committee roles and responsibilities are included in detail in the ISFMP Charter and are only summarized here.

4.9.1 Atlantic States Marine Fisheries Commission and ISFMP Policy Board

The ASMFC (Commission) and the ISFMP Policy Board are generally responsible for the oversight and management of the Commission's fisheries management activities. The Commission must approve all fishery management plans and amendments, including Amendment 7. The ISFMP Policy Board reviews any non-compliance recommendations of the various Boards and, if it concurs, forwards them to the Commission for action.

4.9.2 Atlantic Striped Bass Management Board

The Board was established under the provisions of the Commission's ISFMP Charter (Section Four; ASMFC 2016) and is generally responsible for carrying out all activities under this Amendment.

The Board establishes and oversees the activities of the PDT, PRT, TC, SAS, Tagging Subcommittee, and the AP. In addition, the Board makes changes to the management program under adaptive management, reviews state programs implementing the amendment, and approves alternative state programs through conservation equivalency. The Board reviews the status of state compliance with the management program annually, and if it determines that a state is out of compliance, reports that determination to the ISFMP Policy Board under the terms of the ISFMP Charter.

4.9.3. Atlantic Striped Bass Plan Development Team

The Plan Development Team (PDT) is composed of personnel from state and federal agencies who have scientific knowledge of Atlantic striped bass and management abilities. The PDT is responsible for preparing and developing management documents, including addenda and amendments, using the best scientific information available and the most current stock assessment information. The ASMFC FMP Coordinator chairs the PDT. The PDT will either disband or assume inactive status upon completion of Amendment 7.

4.9.4 Atlantic Striped Bass Plan Review Team

The Plan Review Team (PRT) is composed of personnel from state and federal agencies who have scientific and management ability and knowledge of Atlantic striped bass. The PRT is responsible for providing annual advice concerning the implementation, review, monitoring, and enforcement of Amendment 7 once it has been adopted by the Commission. After final action on Amendment 7, the Board may elect to retain members of the PDT as members of the PRT, or appoint new members.

4.9.5 Atlantic Striped Bass Technical Committee

The Atlantic Striped Bass Technical Committee (TC) consists of representatives from state or federal agencies, Regional Fishery Management Councils, the Commission, a university, or other specialized personnel with scientific and technical expertise, and knowledge of the Atlantic striped bass fishery. The Board appoints the members of the TC and may authorize additional seats as it sees fit. The role of the TC is to assess the species' population, provide scientific advice concerning the implications of proposed or potential management alternatives, and respond to other scientific questions from the Board, PDT, or PRT. The SAS reports to the TC.

4.9.6 Atlantic Striped Bass Stock Assessment Subcommittee

The Atlantic Striped Bass Stock Assessment Subcommittee (SAS) is appointed and approved by the Board, with consultation from the Atlantic Striped Bass TC, and consists of scientists with expertise in the assessment of the Atlantic striped bass population. Its role is to assess the Atlantic striped bass population and provide scientific advice concerning the implications of proposed or potential management alternatives, and to respond to other scientific questions from the Board, TC, PDT or PRT. The SAS reports to the TC.

4.9.7 Atlantic Striped Bass Tagging Subcommittee

The Tagging Subcommittee will consist of those scientists with the expertise in analysis of tag and recapture data for striped Bass. Its role is to assess the available data for inclusion in the assessment of the striped bass populations, which will be provided to the Stock Assessment Subcommittee for inclusion in the annual status of the stock report. The Tagging Subcommittee is also responsible for responding to Management Board questions using the available tagging data, when possible. The Tagging Subcommittee will report to the TC.

4.9.8 Atlantic Striped Bass Advisory Panel

The Atlantic Striped Bass Advisory Panel (AP) is established according to the Commission's Advisory Committee Charter. Members of the AP are citizens who represent a cross-section of commercial and recreational fishing interests and others who are concerned about Atlantic

striped bass conservation and management. The AP provides the Board with advice directly concerning the Commission's Atlantic striped bass management program.

4.9.9 Federal Agencies

4.9.9.1 Management in the Exclusive Economic Zone

Management of Atlantic striped bass in the EEZ is within the jurisdiction of the three Regional Fishery Management Councils under the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.). In the absence of a Council Fishery Management Plan, management is the responsibility of the National Marine Fisheries Service as mandated by the Atlantic Coastal Fishery Cooperative Management Act.

4.9.9.2 Consultation with Fishery Management Councils

At the time of adoption of Amendment 7, none of the Regional Fishery Management Councils had implemented a management plan for Atlantic striped bass, nor had they indicated an intent to develop a plan.

4.10 RECOMMENDATION TO THE SECRETARY OF COMMERCE FOR COMPLEMENTARY MEASURES IN FEDERAL WATERS

The Board will discuss this during final approval of the Draft Amendment.

4.11 COOPERATION WITH OTHER MANAGEMENT INSTITUTIONS

The Board will cooperate, when necessary, with other management institutions during the implementation of this amendment, including NMFS and the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils.

5.0 COMPLIANCE

The full implementation of the provisions included in this amendment is necessary for the management program to be equitable, efficient, and effective. States are expected to implement these measures faithfully under state laws. ASMFC will continually monitor the effectiveness of state implementation and determine whether states are in compliance with the provisions of this fishery management plan.

The Board sets forth specific elements that the Commission will consider in determining state compliance with this fishery management plan, and the procedures that will govern the evaluation of compliance. Additional details of the procedures are found in the ASMFC Interstate Fishery Management Program Charter (ASMFC 2016).

5.1 MANDATORY COMPLIANCE ELEMENTS FOR STATES

A state will be determined to be out of compliance with the provision of this fishery management plan according to the terms of Section Seven of the ISFMP Charter if:

- Its regulatory and management programs to implement Amendment 7 , or any addendum prepared under adaptive management (*Section 4.7*), have not been approved by the Board; or
- It fails to meet any schedule required by *Section 5.2* or within any addendum prepared under adaptive management (*Section 4.7*); or
- It has failed to implement a change to its program when determined necessary by the Board; or
- It makes a change to its regulations required under *Section 4* or any addendum prepared under adaptive management (*Section 4.7*), without prior approval of the Board.

5.1.1 Regulatory Requirements

To be considered in compliance with this fishery management plan, all state programs must include a regime of restrictions on Atlantic striped bass fisheries consistent with the requirements of *Section 3.1: Commercial Catch and Landings Programs; Section 3.4: Biological Data Collection Programs; Section 4.2 Recreational Fishery Management Measures;* and *Section 4.3: Commercial Fishery Management Measures*. A state may propose an alternative management program under *Section 4.6: Alternative State Management Regimes*, which, if approved by the Board, may be implemented as an alternative regulatory requirement for compliance.

States may begin to implement Amendment 7 after final approval by the Commission. Each state must submit its required Atlantic striped bass regulatory program to the Commission through ASMFC staff for approval by the Board. During the period between submission and Board approval of the state's program, a state may not adopt a less protective management program than contained in this Amendment or contained in current state law or regulation. The following lists the specific compliance criteria that a state/jurisdiction must implement in order to be in compliance with Amendment 7:

- Recreational fishery management measures as specified in *Section 4.2*
- Commercial fishery management measures as specified in *Section 4.3*
- Monitoring requirements as specified in *Section 3.0*, including the Commercial Tagging Program (*Section 3.1.1*), Fishery-Dependent Data Collection (*Section 3.4.1*), and Fishery-Independent Data Collection (*Section 3.4.2*)
- All state programs must include law enforcement capabilities adequate for successful implementation of the compliance measures contained in this Amendment.
- There are no mandatory research requirements at this time; however, research requirements may be added in the future under Adaptive Management, *Section 4.7*.

- There are no mandatory habitat requirements in Amendment 7. See *Section 4.4* for habitat recommendations.

For monitoring programs, states must submit proposals for all intended changes to required monitoring programs, which may affect the quality of the data or the ability of the program to fulfill the needs of the fishery management plan. State proposals for making changes to required monitoring programs will be submitted to the Technical Committee. Proposals must be on a calendar year basis. The Technical Committee will make recommendations to the Management Board concerning whether the proposals are consistent with Amendment 7.

In the event that a state realizes it will not be able to fulfill its fishery independent monitoring requirements, it should immediately notify the Commission in writing. The Commission will work with the state to develop a plan to secure funding or plan an alternative program to satisfy the needs outlined in Amendment 7. If the plan is not implemented 90 days after it has been adopted, the state will be found out of compliance with Amendment 7.

5.2 COMPLIANCE SCHEDULE

States must implement this Amendment according to the following schedule:

Month Day, 202X: Submission of state programs to implement Amendment 7 for approval by the Board. Programs must be implemented upon approval by the Board.

Month Day, 202X: States with approved management programs must implement Amendment 7. States may begin implementing management programs prior to this deadline if approved by the Board.

5.3 COMPLIANCE REPORTS

Each state must submit to the Commission an annual report concerning its Atlantic striped bass fisheries and management program for the previous year, no later than June 15th. A standard compliance report format has been prepared and adopted by the ISFMP Policy Board. States should follow this format in completing the annual compliance report.

The report shall cover:

- The previous calendar year's fishery and management program including mandatory reporting programs (including frequency of reporting and data elements collected), fishery dependent data collection, fishery independent data collection, regulations in effect, harvest and catch information, and *de minimis* requests.
- The planned management program for the current calendar year summarizing regulations that will be in effect and monitoring programs that will be performed, highlighting any changes from the previous year.

5.3.1 Commercial Tagging Program Reports

States and jurisdictions with a commercial striped bass fishery must annually report any changes to the tag program such as tag type, which includes color, text (with the exception of year), and style; the biological metric used; or any other requirements as specified under Section 3.1.1 no later than 60 days prior to the start of the first fishing season in that state or jurisdiction. This information will be compiled and distributed to law enforcement officials to aid in commercial tag enforcement in the striped bass fishery.

5.4 PROCEDURES FOR DETERMINING COMPLIANCE

Detailed procedures regarding compliance determinations are contained in the ISFMP Charter, Section Seven (ASMFC 2016). In brief, all states are responsible for the full and effective implementation and enforcement of fishery management plans in areas subject to their jurisdiction. Written compliance reports as specified in the Amendment must be submitted annually by each state with a declared interest. Compliance with Amendment 7 will be reviewed at least annually; however, the Board, ISFMP Policy Board, or the Commission may request the PRT to conduct a review of state's implementation and compliance with Amendment 7 at any time.

The Board will review the written findings of the PRT within 60 days of receipt of a State's compliance report. Should the Board recommend to the Policy Board that a state be determined out of compliance, a rationale for the recommended noncompliance finding will be addressed in a report. The report will include the required measures of Amendment 7 that the state has not implemented or enforced, a statement of how failure to implement or enforce required measures jeopardizes Atlantic striped bass conservation, and the actions a state must take in order to comply with Amendment 7 requirements.

The ISFMP Policy Board will review any recommendation of noncompliance from the Board within 30 days. If it concurs with the recommendation, it shall recommend to the Commission that a state be found out of compliance.

The Commission shall consider any noncompliance recommendation from the ISFMP Policy Board within 30 days. Any state that is the subject of a recommendation for a noncompliance finding is given an opportunity to present written and/or oral testimony concerning whether it should be found out of compliance. If the Commission agrees with the recommendation of the ISFMP Policy Board, it may determine that a state is not in compliance with Amendment 7, and specify the actions the state must take to come into compliance.

Any state that has been determined to be out of compliance may request that the Commission rescind its noncompliance findings, provided the state has revised its Atlantic striped bass conservation measures.

5.5. ANALYSIS OF THE ENFORCEABILITY OF PROPOSED MEASURES

All state programs must include law enforcement capabilities adequate for successfully implementing that state's Atlantic striped bass regulations. The LEC will monitor the adequacy of a state's enforcement activity.

5.6 RECOMMENDED (NON-MANDATORY) MANAGEMENT MEASURES

The following management measures are recommended for states to fully or partially implement. These measures are not part of the compliance criteria for Amendment 7. Through the Draft Amendment 7 development process, the PDT identified additional potential recommendations for the Board's consideration:

- States are encouraged to increase APAIS sampling above the MRIP baseline to provide more extensive coverage of their state recreational fisheries;
- States should consider complimentary/uniform regulations in shared water bodies if pursuing CE.

5.6.1 Spawning Area Closures

Consideration should be given to the prohibition of fishing on the spawning grounds during the spawning season. In addition to the mandatory spawning closures [if selected in *Section 4.2.2;* delete if not-selected], states are encouraged to maintain existing spawning closures and evaluate the need for additional spawning closures.

5.6.2 Survey of Inland Recreational Fishermen

The states/jurisdictions are encouraged to conduct a survey of inland fishermen to evaluate the landings, catch rate, discards, participation, and number of trips.

5.6.3. Angler Education and Outreach

NOTE: If the option to require outreach is selected in Section 4.2.2 (Option D1), this would be incorporated into that section.

Through the ASMFC, if possible, states are recommended to develop and implement an angler education program. The main tool of the education program will be a website accessible from each state fisheries agency website. When funding is available, states should develop posters and/or brochures for posting and distributing at boat launches, shore-based fishing areas, and for placement on charter and rental boats. State agencies should also coordinate outreach to anglers through influential fishing organizations.

In order to promote the use of circle hooks, states are encouraged to develop public education and outreach campaigns on the benefits of circle hooks when fishing with bait. Angler education on the benefits of using circle hooks and on the effective safe handling of fish caught and released remains a critical component to improve post release survival.

6.0 RESEARCH NEEDS

The following list of research needs have been identified in order to enhance the state of knowledge of the Atlantic striped bass resource. Research recommendations are broken down into several categories: data collection, assessment methodology, life history, habitat, and socioeconomic. Some research needs are further categorized into high and moderate priority levels.

6.1 STOCK ASSESSMENT, DATA COLLECTION, AND LIFE HISTORY RESEARCH NEEDS

The following categorized and prioritized research recommendations were developed by the 2018 Benchmark Stock Assessment Subcommittee and the 66th SARC (NEFSC 2019).

6.1.1 Fishery-Dependent Data

High

- Continue collection of paired scale and otolith samples, particularly from larger striped bass, to facilitate development of otolith-based age-length keys and scale-otolith conversion matrices.
- Develop studies to provide information on gear specific (including recreational fishery) discard morality rates and to determine the magnitude of bycatch mortality.
- Conduct study to directly estimate commercial discards in the Chesapeake Bay.
- Collect sex ratio information on the catch and improve methods for determining population sex ratio for use in estimates of female SSB and biological reference points.

Moderate

- Improve estimates of striped bass harvest removals in coastal areas during wave 1 and in inland waters of all jurisdictions year round.

6.1.2 Fishery-Independent Data

High

- Develop an index of relative abundance from the Hudson River Spawning Stock Biomass survey to better characterize the Delaware Bay/Hudson River stock.
- Improve the design of existing spawning stock surveys for Chesapeake Bay and Delaware Bay.

Moderate

- Develop a refined and cost-efficient, fisheries-independent coastal population index for striped bass stocks.
- Collect sex ratio information from fishery-independent sources to better characterize the population sex ratio.

6.1.3 Stock Assessment Modeling/Quantitative

High

- Develop better estimates of tag reporting rates; for example, through a coastwide tagging study.
- Investigate changes in tag quality and potential impacts on reporting rate.
- Explore methods for combining tag results from programs releasing fish from different areas on different dates.
- Develop field or modeling studies to aid in estimation of natural mortality and other factors affecting the tag return rate.
- Compare M and F estimates from acoustic tagging programs to conventional tagging programs.

Moderate

- Examine methods to estimate temporal variation in natural mortality.

Low

- Evaluate truncated matrices to reduce bias in years with no tag returns and covariate based tagging models to account for potential differences from size or sex or other covariates.

6.1.4 Life History and Biology

High

- Continue in-depth analysis of migrations, stock compositions, sex ratio, etc. using mark-recapture data.
- Continue evaluation of striped bass dietary needs and relation to health condition.
- Continue analysis to determine linkages between the Mycobacteriosis outbreak in Chesapeake Bay and sex ratio of Chesapeake spawning stock, Chesapeake juvenile production, and recruitment success into coastal fisheries.

Moderate

- Examine causes of different tag based survival estimates among programs estimating similar segments of the population.
- Continue to conduct research to determine limiting factors affecting recruitment and possible density implications.
- Conduct study to calculate the emigration rates from producer areas now that population levels are high and conduct multi-year study to determine inter-annual variation in emigration rates.

6.2 HABITAT RESEARCH NEEDS

- See *Section 4.4* for habitat conservation and restoration recommendations, which include reviewing striped bass habitat use and data (e.g., water quality criteria) to inform habitat conservation and restoration.

6.3 SOCIO-ECONOMIC RESEARCH NEEDS

- Conduct research on a coastwide scale to analyze striped bass anglers' preferences and behavior in response to regulatory changes and changes in fishery conditions (e.g., changes in fish availability). This research could inform an economic sub-model component of a bioeconomic model for striped bass (see *Section 1.5.2*).
    - The economic sub-model would use anglers' preferences for different trip attributes to calculate anglers' demand for recreational trips under alternative policy scenarios. In modern applications, this is often achieved by parameterizing recreational demand using survey data from choice experiments in which anglers make trip decisions based on expectations about catch, harvest, and regulatory releases or discards. Choice experiment surveys and revealed preference studies could be used to estimate the effects of changes in regulations in the absence of market data and behavioral observations.
- When the above research is available, work with stock assessment scientists to develop a bioeconomic model for striped bass, which would combine an economic sub-model and biological sub-model to assess feedbacks and long-run impacts of management decisions on anglers and the striped bass resource (see *Section 1.5.*2).
- Conduct research on angler preferences and behavior regarding targeting of substitute species (e.g., which species are targeted with striped bass and what species would anglers target if they were unable to keep striped bass) and how that behavior is influenced by regulations and how preferences differ across regions. This would inform understanding and predictions of changes in effort in response to future regulations and changes in fish availability (e.g., due to climate change).
- Improve understanding of non-consumptive value by region, including value of the catch and release fishery.

7.0 PROTECTED SPECIES

In the fall of 1995, Commission member states, NMFS, and USFWS began discussing ways to improve implementation of the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA) in state waters. Historically, these policies had been only minimally implemented and enforced in state waters (0-3 miles). In November 1995, the Commission, through its ISFMP Policy Board, approved an amendment to its ISFMP Charter (Section Six (b)(2)) requiring protected species/fishery interactions to be discussed in the Commission's fisheries management planning process. As a result, the Commission's fishery management plans describe impacts of state fisheries on MMPA protected and ESA-listed (endangered or threatened) species, collectively termed "protected species". The following section outlines: (1) the federal legislation which guides protection of marine mammals and sea turtles, (2) the protected species with potential fishery interactions; (3) the specific types of fishery interaction; (4) information about the affected protected species; and (5) potential impacts to Atlantic coast state and interstate fisheries.

7.1 MARINE MAMMAL PROTECTION ACT REQUIREMENTS

Since its passage in 1972, and subsequent Amendment in 1994, one of the underlying goals of the MMPA has been to reduce the incidental serious injury and mortality of marine mammals in the course of commercial fishing operations to insignificant levels approaching a zero mortality and zero serious injury rate. Pursuant to the MMPA, NMFS publishes a List of Fisheries (LOF) annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injuries and/or mortalities of marine mammals in each fishery (i.e., Category I=frequent; Category II=occasional; Category III=remote likelihood or no known interactions). The Act also requires NMFS to develop and implement a take reduction plan to assist in the recovery of, or prevent the depletion of, each strategic stock that interacts with a Category I or II fishery. A strategic stock is defined as a stock: (1) for which the level of direct human-caused mortality exceeds the potential biological removal (PBR)[26] level; (2) which is declining and is likely to be listed under the Endangered Species Act (ESA) in the foreseeable future; or (3) which is listed as a threatened or endangered species under the ESA or as a depleted species under the MMPA.

Under 1994 mandates, the MMPA also requires fishermen in Category I and II fisheries to register under the Marine Mammal Authorization Program (MMAP). The purpose of this is to provide an exception for commercial fishermen from the general taking prohibitions of the MMPA. All fishermen, regardless of the category of fishery in which they participate, must report all incidental injuries and mortalities to a marine mammal caused by commercial fishing operations within 48 hours.

Section 101(a)(5)(E) of the MMPA allows for authorization of the incidental take of ESA-listed marine mammals in the course of commercial fishing operations if it is determined that: (1) incidental mortality and serious injury will have a negligible impact on the affected species or stock; (2) a recovery plan has been developed or is being developed for such species or stock under the ESA; and (3) where required under MMPA Section 118, a monitoring program has been established, vessels engaged in such fisheries are registered, and a take reduction plan has been developed or is being developed for such species or stock. MMPA Section 101(a)(5)(E) permits are not required for Category III fisheries, but any serious injury or mortality of a marine mammal must be reported.

7.2 ENDANGERED SPECIES ACT REQUIREMENTS

The taking of endangered or threatened species including sea turtles, marine mammals, and fish, is prohibited and considered unlawful under Section 9(a)(1) of the ESA. In addition, NMFS or the USFWS may determine Section 4(d) protective regulations to be necessary and advisable

[26] PBR is the number of human-caused deaths per year each stock can withstand and still reach an optimum population level. This is calculated by multiplying the minimum population estimate by the stock's net productivity rate and a recovery factor ranging from 0.1 for endangered species to 1.0 for healthy stocks.

to provide for the conservation of threatened species. There are several mechanisms established in the ESA which allow for exceptions to the prohibited take of protected species listed under the ESA. Section 10(a)(1)(A) of the ESA authorizes NMFS to allow the taking of listed species through the issuance of research permits, which allow ESA species to be taken for scientific purposes or to enhance the propagation and survival of the species. Section 10(a)(1)(B) authorizes NMFS to permit, under prescribed terms and conditions, any taking otherwise prohibited by Section 9(a)(1)(B) of the ESA if the taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity. In recent years, some Atlantic state fisheries have obtained section 10(a)(1)(B) permits for state fisheries.

Section 7(a)(2) requires federal agencies to consult with NMFS to ensure that any action that is authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat of such species. If, following completion of the consultation, an action is found to jeopardize the continued existence of any listed species or cause adverse modification to critical habitat of such species, reasonable and prudent alternatives need to be identified so that jeopardy or adverse modification to the species does not occur. Section (7)(o) provides the actual exemption from the take prohibitions established in Section 9(a)(1), which includes Incidental Take Statements that are provided at the end of consultation via the ESA Section 7 Biological Opinions.

7.3 PROTECTED SPECIES WITH POTENTIAL FISHERY INTERACTIONS

Commercial striped bass fisheries operate in the state waters (0-3 miles) of Massachusetts, Rhode Island, New York, Delaware, Maryland, the Potomac River Fisheries Commission, Maryland, Virginia, and North Carolina.[27] The Chesapeake Bay typically accounts for roughly 60 percent of striped bass commercial landings by weight each year. The primary gear types for the striped bass commercial fishery are gill nets (roughly 50 percent of commercial landings by weight each year), hook and line (typically 20-30 percent of commercial landings by weight each year), and pound nets/other fixed gears (typically 10-20 percent of commercial landings by weight each year). Haul seines and trawls are also used in the commercial fishery to a lesser extent (combined less than 5 percent of commercial landings by weight each year). The recreational sector operates in state waters across the entire management unit (0-3 miles from Maine through North Carolina) and uses hook and line almost exclusively.

A number of protected species occur within the striped bass management unit for Atlantic striped bass. Ten are classified as endangered or threatened under the ESA; the remainder are protected under provisions of the MMPA. The species found in coastal Northwest Atlantic waters are listed below.

[27] North Carolina has reported zero offshore commercial harvest since 2013.

Endangered

North Atlantic Right whale	(*Eubalaena glacialis*)
Fin whale	(*Balaenoptera physalus*)
Leatherback sea turtle	(*Dermochelys coriacea*)
Kemp's Ridley sea turtle	(*Lepidochelys kempii*)
Shortnose sturgeon	(*Acipenser brevirostrum*)
Atlantic sturgeon (New York Bight, Chesapeake Bay, Carolina, and South Atlantic Distinct Population Segments (DPS))	(*Acipenser oxyrinchus oxyrinchus*)

Threatened

Loggerhead sea turtle (NW Atlantic Ocean DPS)	*(Caretta caretta)*
Green sea turtle (North Atlantic DPS)	*(Chelonia mydas)*
Giant Manta Ray	*(Manta birostris)*
Atlantic Sturgeon (Gulf of Maine DPS)	*(Acipenser oxyrinchus oxyrinchus)*

MMPA

Includes all marine mammals above in addition to:

Minke whale	*(Balaenoptera acutorostrata)*
Humpback whale	*(Megaptera novaeangliae)*
Bottlenose dolphin[28]	*(Tursiops truncatus)*
Atlantic-white sided dolphin	*(Lagenorhynchus acutus)*
Short Beaked Common dolphin	*(Delphinus delphis)*
Harbor seal	*(Phoca vitulina)*
Gray seal	*(Halichoerus grypus)*
Harp seal	(*Phoca groenlandica*)
Harbor porpoise	(*Phocoena phocoena*)

In the Northwest Atlantic waters, protected species utilize marine habitats for feeding, reproduction, nursery areas, and migratory corridors. Some species occupy the area year round while others use the region only seasonally or move intermittently nearshore, inshore, and offshore. Interactions may occur whenever fishing gear and protected species overlap spatially and temporally.

As the primary concern for both MMPA protected and ESA listed species is the potential for the fishery to interact (e.g., bycatch, entanglement) with these species it is necessary to consider species occurrence in the affected environment of the fishery and how the fishery will overlap in time and space with this occurrence; and observed records of protected species interaction with particular fishing gear types, to understand the potential risk of an interaction.

[28] The following bottlenose dolphin stocks occur within the striped bass management unit: Western North Atlantic Northern Migratory Coastal; Western North Atlantic Southern Migratory Coastal; Northern North Carolina Estuarine System; Southern North Carolina Estuarine System.

7.3.1 Marine Mammals

Large whales, small cetaceans (e.g., bottlenose dolphins), and pinniped (e.g., harbor seals) species co-occur with the Atlantic striped bass fishery.

Large whales

Large whales, including Humpback, North Atlantic right, fin, and minke whales, occur in the Northwest Atlantic. Generally speaking, large whales follow an annual pattern of migration between low latitude (south of 35°N) wintering/calving grounds and high latitude spring/summer/fall foraging grounds (primarily north of 41°N). This is a simplification of whale movements, particularly as it relates to winter movements. It is unknown if all individuals of a population migrate to low latitudes in the winter, although increasing evidence suggests that for some species, some portion of the population remains in higher latitudes throughout the winter (Clapham et al. 1993; Davis et at. 2017; Davis et al. 2020; Hayes et al. 2020; Swingle et al. 1993; Vu et al. 2012). For additional information on the biology, status, and range wide distribution of humpback, North Atlantic right, fin, sei, and minke whales, refer to the marine mammal SARs provided at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region.

Small Cetaceans and Pinnipeds

Small cetaceans can be found throughout the year in the Northwest Atlantic Ocean (Maine to Florida), including in harbors, bays, gulfs, and estuaries; however, within this range, there are seasonal shifts in species distribution and abundance. Pinnipeds are primarily found throughout the year or seasonally from New Jersey to Maine; however, increasing evidence indicates that some species (e.g., harbor seals) may be extending their range seasonally into waters as far south as Cape Hatteras, North Carolina (35°N).

For additional information on the biology and range wide distribution of each species of small cetacean and pinniped, as well as information on other marine mammals that occur on the Atlantic coast, refer to the marine mammal SARs provided at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

7.3.1.1 Gear Interactions with Marine Mammals

Marine mammal interactions have been documented in the primary fisheries that target striped bass, including the pound net and gillnet fisheries as well as trawl, haul seine, and hook and line. The following sections are not a comprehensive review of all fishing gear types known to interact with a given species and the bycatch reports included below do not represent a complete list. It should be noted that without an observer program for many of these fisheries, actual numbers of interactions associated with the striped bass fishery are difficult to obtain.

Gillnets

The mid-Atlantic gillnet fishery is listed as a Category I fishery in the 2021 LOF (86 FR 3028, January 14, 2021). The fishery was originally listed as a Category II fishery but in 2003, it was elevated to a Category I fishery after stranding and observer data documented the incidental mortality and serious injury of bottlenose dolphins (68 FR 41725, July 15, 2003). Other species with documented interactions include the common dolphin, harbor seal, gray seal, and hooded seal; however, since gillnet fisheries target many species, not all incidents may have occurred while harvesting striped bass. Between 1995 and 2018, observer coverage has ranged from 1% to 9%.
The Chesapeake Bay inshore gillnet and the North Carolina inshore gillnet are all listed as Category II fisheries in the 2021 LOF (86 FR 3028, January 14, 2021). The primary species reported interacting with these gears is the bottlenose dolphin. Both the Chesapeake Bay inshore gillnet and the North Carolina inshore gillnet fisheries were elevated from a Category III fishery to a Category II fishery in the 2006 and 2001 LOFs, respectively (66 FR 42780, August 15, 2001; 71 FR 48802, August 22, 2006).

The Delaware River inshore gillnet, the Long Island Sound inshore gillnet, and the Rhode Island/Southern Massachusetts/New York Bight inshore gillnet fisheries are listed as Category III fisheries in the 2021 LOF (86 FR 3028, January 14, 2021). There have been no documented interactions with marine mammals in the past five years of data.

Hook and Line
Large whales have been documented entangled with hook and line gear or monofilament line (Greater Atlantic Region Marine Animal Incident Database, unpublished data; Marine Mammal SARs: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region). In the most recent (2008-2017) mortality and serious injury determinations for baleen whales, the majority of cases identified with confirmed hook and line or monofilament entanglement did not result in the serious injury or mortality to the whale (84.8 % observed/reported whales had a serious injury value of 0; 15.2 % had a serious injury value of 0.75; none of the cases resulted in mortality; Cole and Henry 2013; Henry et al. 2017; Henry et al. 2020). In fact, 75.8 % of the whales observed or reported with a hook/line or monofilament entanglement were resighted gear free and healthy; confirmation of the health of the other remaining whales remain unknown as no resightings had been made over the timeframe of the assessment (Cole and Henry 2013; Henry et al. 2017; Henry et al. 2020). Based on this information, while large whale interactions with hook and line gear are possible, there is a low probability that an interaction will result in serious injury or mortality to any large whale species. Therefore, relative to other gear types, such as fixed gear, hook and line gear represents a low source serious injury or mortality to any large whale (Henry et al. 2020).

Based on the most recent 10 years of data provided in the marine mammal SARs (i.e., 2008-2017) for small cetaceans and pinnipeds that occur within the striped bass management unit, only bottlenose dolphin stocks have been identified (primarily through stranding records/data) as entangled in hook and line gear (https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region). In some cases, these entanglements have resulted in the serious injury or mortality to the animal. Specifically,

reviewing stranding data provided in marine mammal SARs from 2008-2017, estimated mean annual mortality for each bottlenose stock due to interactions with hook and line gear was approximately one animal (Palmer 2017; https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region). Based on this, although interactions with hook and line gear are possible, relative to other gear types, such as trawl gear, hook and line gear represents a low source serious injury or mortality to any bottlenose dolphin stock. For other species of small cetaceans or pinnipeds, hook and line gear is not expected to be a source of serious injury or mortality.

Pound Nets

The Virginia pound net fishery is listed as a Category II fishery in the 2021 LOF due to documented interactions with bottlenose dolphins (86 FR 3028, January 14, 2021). During 2014–2018, there were no documented mortalities or serious injuries to bottlenose dolphins involving pound net gear in Virginia. There is no formal observer coverage for the Virginia pound net fishery but there has been sporadic monitoring by the Northeast Fishery Observer Program. All other Atlantic coast pound net fisheries are listed as a Category III fishery.

NOAA Fisheries issued a final rule in 2015 amending the Bottlenose Dolphin Take Reduction Plan and its implementing regulations under the Marine Mammal Protection Act (MMPA) requiring gear restrictions for VA pound nets in estuarine and coastal state waters of Virginia to reduce bycatch (80 FR 6925, February 9, 2015). NOAA Fisheries also amended regulations and definitions for Virginia pound nets under the Endangered Species Act (ESA) for sea turtle conservation to be consistent with this final rule. More information on this rule is available here: https://www.fisheries.noaa.gov/action/amendment-virginia-pound-net-regulations.

Fyke Net and Floating Fish Traps

The Rhode Island Floating fish trap and the Northeast/Mid-Atlantic fyke net fisheries are listed as a Category III fishery in the 2021 LOF (86 FR 3028, January 14, 2021). There are no documented interactions between marine mammals in the Northeast/Mid-Atlantic fyke net fishery nor the floating fish trap fishery.

Bottom Trawls

The Mid-Atlantic bottom trawl fishery is listed as a Category II fishery in the 2021 LOF (86 FR 3028, January 14, 2021). In 2005, Mid-Atlantic bottom trawl fishery was elevated to Category II based on mortality and injury of common dolphins and pilot whales (later removed from the list of species killed or injured by this fishery). This fishery continues to be listed as a Category II fishery due to interactions with bottlenose dolphins, common dolphins, and gray seals. Interactions with other species include the harbor seal, Risso's dolphin, and white-sided dolphin.[29]

[29] For additional information on small cetacean and pinniped interactions, see: Chavez-Rosales et al. 2017; Hatch and Orphanides 2014, 2015, 2016, 2019; Josephson et al. 2017; Josephson et al. 2019; Lyssikatos 2015; Lyssikatos

With the exception of minke whales, there have been no observed interactions with large whales and bottom trawl gear.[30] In 2008, several minke whales were observed dead in bottom trawl gear attributed to the northeast bottom trawl fishery; estimated annual mortality attributed to this fishery in 2008 was 7.8 minke whales (Waring et al. 2015). Since 2008, serious injury and mortality records for minke whales in U.S. waters have shown zero interactions with bottom trawl (northeast or Mid-Atlantic) gear.[31] Based on this information, large whale interactions with bottom trawl gear are expected to be rare to nonexistent.

Haul/Beach Seine

The Mid-Atlantic haul/beach seine fishery is listed as a Category II fishery in the 2021 LOF due to interactions with coastal bottlenose dolphin (86 FR 3028, January 14, 2021). NMFS has recorded one observed take of a bottlenose dolphin in this fishery in 1998 (Waring and Quintal 2000). During 2014–2018, one serious injury of a common bottlenose dolphin occurred associated with the mid-Atlantic haul/beach seine fishery. During 2014, a common bottlenose dolphin was found within a haul seine net in Virginia and released alive seriously injured (Maze-Foley and Garrison 2020). Harbor porpoise was removed from the list of species killed or injured in the Mid-Atlantic haul/beach seine fishery due to no other interactions between 1999 and 2003. The fishery was observed from 1998-2001 but there has been limited observer coverage since 2001.

7.3.2 Sea Turtles

All sea turtles that occur in U.S. waters are listed as either endangered or threatened under the ESA. Four sea turtle species likely to overlap with the striped bass fishery are loggerhead (*Caretta caretta*), Kemp's Ridley (*Lepidochelys kempi*), green (*Chelonia mydas*), and leatherback (*Dermochelys coriacea*) sea turtles.

The Atlantic seaboard provides important developmental habitat for post-pelagic juveniles, as well as foraging and nesting habitat for adult sea turtles. The distribution and abundance of sea

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et al. 2020; Orphanides 2020; Read *et al*. 2006; Waring et al. 2015b; Marine Mammal SARS: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region; MMPA LOF at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries.

[30] Refer to Greater Atlantic Region Marine Animal Incident Database (unpublished data); Marine Mammal SARs: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region; NEFSC observer/sea sampling database, unpublished data ; MMPA LOF: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries; NMFS NEFSC reference documents (marine mammal serious injury and mortality reports): https://apps-nefsc.fisheries.noaa.gov/rcb/publications/center-reference-documents.html

[31] Refer to: Greater Atlantic Region Marine Animal Incident Database (unpublished data); Waring et al. 2016; Hayes et al. 2017; Hayes et al. 2018; Hayes et al. 2019; Hayes et al. 2020; Cole and Henry 2013; and, Henry et al. 2014, 2015, 2016, 2017, 2019, 2020; MMPA LOF: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries.

turtles along the Atlantic coast is related to geographic location and seasonal variations in water temperatures. In U.S. Northwest Atlantic waters, hard-shelled turtles commonly occur throughout the continental shelf from Florida to Cape Cod, MA, although their presence varies with the seasons due to changes in water temperature. As coastal water temperatures warm in the spring, loggerheads begin to migrate to inshore waters of the southeast United States and also move up the Atlantic Coast (Braun-McNeill & Epperly 2004; Epperly et al. 1995a,b,c; Griffin et al. 2013; Morreale & Standora 2005), occurring in Virginia foraging areas as early as late April and on the most northern foraging grounds in the GOM in June (Shoop & Kenney 1992). The trend is reversed in the fall as water temperatures cool. The large majority leave the Gulf of Maine by September, but some remain in Mid-Atlantic and Northeast areas until late fall (i.e., November). By December, sea turtles have migrated south to waters offshore of North Carolina, particularly south of Cape Hatteras, and further south, although it should be noted that hard-shelled sea turtles can occur year-round in waters off Cape Hatteras and south (Epperly et al. 1995b; Griffin et al. 2013; Hawkes et al. 2011; Shoop & Kenney 1992).

Juvenile Kemp's ridleys sea turtles use northeastern and mid-Atlantic waters of the U.S. Atlantic coastline as primary developmental habitat, with shallow coastal embayments serving as important foraging grounds during the summer months. Juvenile ridleys migrate south as water temperatures cool, and are predominantly found in shallow coastal embayments along the Gulf Coast during the fall and winter months. Kemp's ridleys can be found from New England to Florida, and are the second most abundant sea turtle in Virginia and Maryland waters (Keinath et al. 1987; Musick and Limpus, 1997). In the Chesapeake Bay, ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation (Lutcavage and Musick, 1985; Bellmund et al., 1987; Keinath et al,. 1987; Musick and Limpus, 1997). These turtles primarily feed on crabs, but also consume mollusks, shrimp, and fish (Bjorndal, 1997).

The leatherback is the largest living turtle and its range is farther than any other sea turtle species (NMFS, 2013). Leatherback turtles are often found in association with jellyfish, with the species primarily feeding on Cnidarians (*medusae, siphonophores*) and tunicates (*salps, pyrosomas*). While these turtles are predominantly found in the open ocean, they do occur in coastal water bodies such as Cape Cod Bay and Narragansett Bay, particularly the fall. The most significant nesting in the U.S. occurs in southeast Florida (NMFS, 2013). Leatherbacks are known to use coastal waters of the U.S. continental shelf and to have a greater tolerance for colder water than hard-shelled sea turtles (James *et al.* 2005; Eckert *et al.* 2006; Murphy *et al.* 2006; NMFS and USFWS 2013b; Dodge *et al.* 2014). Leatherback sea turtles engage in routine migrations between northern temperate and tropical waters; they are found in more northern waters (i.e., Gulf of Maine) later in the year (i.e., similar time frame as hard-shelled sea turtles), with most leaving the Northwest Atlantic shelves by mid-November (NMFS and USFWS 1992; James *et al.* 2005; James *et al*. 2006; Dodge *et al.* 2014).

More information about sea turtles can be found here: https://www.fisheries.noaa.gov/sea-turtles.

7.3.2.1 Potential Impacts of Striped Bass Fishery on Sea Turtles

The following sections are not a comprehensive review of all fishing gear types known to interact with a given species and the bycatch reports included below do not represent a complete list.

Gillnet

An observer program for protected species has not been established for the striped bass fishery. However, under the ESA Annual Determination to Implement Sea Turtle Observer Requirement (80 FR 14319, April 18, 2015), one fishery that targets striped bass is included, the Chesapeake Bay Inshore Gillnet Fishery.

Hook and Line

Interactions between ESA listed species of sea turtles and hook and line gear have been documented, particularly in nearshore waters of the Mid-Atlantic (e.g., Greater Atlantic Region Sea Turtle and Disentanglement Network, unpublished data; NMFS Sea Turtle Stranding and Salvage Network, unpublished data; Palmer 2017). Interactions with hook and line gear have resulted in sea turtle injury and mortality and therefore, poses an interaction risk to these species. However, the extent to which these interactions are impacting sea turtle populations is still under investigation, and therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of sea turtle populations.

Pound Nets

Populations of loggerhead, Kemp's ridley, and leatherback sea turtles are at risk in areas where pound net fishing is abundant, such as the Chesapeake Bay and surrounding waters. NOAA Fisheries issued a final rule in 2015 amending the Bottlenose Dolphin Take Reduction Plan and its implementing regulations under the MMPA requiring gear restrictions for VA pound nets in estuarine and coastal state waters of Virginia to reduce bycatch (80 FR 6925, February 9, 2015). NOAA Fisheries also amended regulations and definitions for Virginia pound nets under the ESA for sea turtle conservation to be consistent with this final rule. Pound net regulations were enacted to protect both sea turtles and bottlenose dolphins. More information on this rule is available here: https://www.fisheries.noaa.gov/action/amendment-virginia-pound-net-regulations.

Bottom Trawl

Bottom trawl gear poses an injury and mortality risk to sea turtles (Sasso and Epperly 2006; NMFS Observer Program, unpublished data). Since 1989, the date of our earliest observer records for federally managed fisheries, sea turtle interactions with trawl gear have been observed in the Gulf of Maine, Georges Bank, and/or the Mid-Atlantic; however, most of the observed interactions have been observed south of the Gulf of Maine (Murray 2008; Murray 2015b; Murray 2020; NMFS Observer Program, unpublished data; Warden 2011 a, b). Murray (2020) provided information on sea turtle interaction rates from 2014-2018 and estimated 571 loggerhead, 46 Kemp's ridley, 20 leatherback, and 16 green sea turtle interactions were estimated to have occurred in bottom trawl gear in the Mid-Atlantic region over the five-year period. On Georges Bank, 12 loggerheads, and 6 leatherback interactions. An estimated 272

loggerhead, 23 Kemp's ridley, 13 leatherback, and 8 green sea turtle interactions resulted in mortality over this period (Murray 2020).

7.3.3 Atlantic Sturgeon

Since 1998, there has been a moratorium on the harvest of Atlantic Sturgeon in both state and federal waters; however, the population has continued to decline and, in 2012, Atlantic sturgeon became listed under the ESA. The listing identifies five distinct population segments (DPS), which include the Gulf of Maine, the New York Bight, the Chesapeake Bay, Carolina, and the South Atlantic (77 FR 5914 and 77 FR 5880, February 6, 2012). All DPSs are listed as endangered except for the Gulf of Maine population, which is listed as threatened. Primary threats to the species include historic overfishing, the bycatch of sturgeon in other fisheries, habitat destruction from dredging, dams, and development, and vessel strikes (77 FR 5914; 77 FR 5880). In April 2017, NOAA Fisheries published a final rule (82 FR 39160) to designate Atlantic sturgeon critical habitat (i.e., specific areas that are considered essential to the conservation of the species) in each of the DPSs.

The marine range of U.S. Atlantic sturgeon extends from Labrador, Canada, to Cape Canaveral, Florida. Based on fishery-independent and dependent data, as well as data collected from tracking and tagging studies, in the marine environment, Atlantic sturgeon appear to primarily occur inshore of the 50 meter depth contour (Stein et al. 2004 a,b; Erickson et al. 2011; Dunton et al. 2010); however, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Timoshkin 1968; Collins and Smith 1997; Stein et al. 2004a,b; Dunton et al. 2010; Erickson et al. 2011). Data from fishery-independent surveys and tagging and tracking studies also indicate that Atlantic sturgeon may undertake seasonal movements along the coast (Dunton et al. 2010; Erickson et al. 2011; Wipplehauser 2012); however, there is no evidence to date that all Atlantic sturgeon make these seasonal movements and therefore, may be present throughout the marine environment throughout the year.

For additional information on the biology, status, and range wide distribution of each distinct population segment (DPS) of Atlantic sturgeon please refer to 77 FR 5880 and 77 FR 5914, as well as the Atlantic Sturgeon Status Review Team's (ASSRT) 2007 status review of Atlantic sturgeon (ASSRT 2007) and the Atlantic States Marine Fisheries Commission 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report (ASMFC 2017).

7.3.3.1 Potential Impacts of Striped Bass Fishery on Atlantic Sturgeon

The following sections are not a comprehensive review of all fishing gear types known to interact with a given species and the bycatch reports included below do not represent a complete list.

<u>Bottom Trawl and Gillnet</u>

Since 1989, Atlantic sturgeon interactions (i.e., bycatch) with sink gillnet and bottom trawl gear have frequently been observed in the Greater Atlantic Region, with most sturgeon observed

captured falling within the 100 to 200cm total length range; however, both larger and small individuals have been observed (ASMFC 2007; ASMFC 2017; Miller and Shepard 2011; NEFSC observer/sea sampling database, unpublished data; Stein et al. 2004). For sink gillnets, higher levels of Atlantic sturgeon bycatch have been associated with depths of less than 40 meters, mesh sizes of greater than 10 inches, and the months of April and May (ASMFC 2007). Hager et al. (2021) found that subadult Atlantic sturgeon are particularly susceptible to interactions with striped bass sink gillnet gear in the James River, VA.

For otter trawl fisheries, the highest incidence of Atlantic sturgeon bycatch have been associated with depths less than 30 meters (ASMFC 2007). More recently, over all gears and observer programs that have encountered Atlantic sturgeon, the distribution of haul depths on observed hauls that caught Atlantic sturgeon was significantly different from those that did not encounter Atlantic surgeon, with Atlantic sturgeon encountered primarily at depths less than 20 meters (ASMFC 2017).

The ASMFC (2017) Atlantic sturgeon benchmark stock assessment represents the most accurate predictor of annual Atlantic sturgeon interactions in fishing gear (e.g., otter trawl, gillnet). The stock assessment analyzes fishery observer and VTR data to estimate Atlantic sturgeon interactions in fishing gear in the Mid-Atlantic and New England regions from 2000-2015, the timeframe which included the most recent, complete data at the time of the report. The total bycatch of Atlantic sturgeon from bottom otter trawls ranged between 624-1,518 fish over the 2000-2015 time series, while the total bycatch of Atlantic sturgeon from gillnets ranged from 253-2,715 fish. Focusing on the most recent five-year period of data provided in the stock assessment report[32], the estimated average annual bycatch during 2011-2015 of Atlantic sturgeon in bottom otter trawl gear is 777.4 individuals and in gillnet gear is 627.6 individuals.

Hook and Line

Interactions between ESA-listed species of Atlantic sturgeon and hook and line gear have been documented, particularly in nearshore waters (ASMFC 2017). Interactions with hook and line gear have resulted in Atlantic sturgeon injury and mortality and therefore, poses an interaction risk to these species. However, the extent to which these interactions are impacting Atlantic sturgeon DPSs is still under investigation and therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of Atlantic sturgeon DPSs (NMFS 2011b; ASMFC 2017).

7.3.4 Shortnose Sturgeon

Shortnose sturgeon occur in estuaries large coastal rivers on the Atlantic coast from Canada to Florida, including the Chesapeake Bay and its tributaries. Shortnose sturgeon spend most of

[32] The period of 2011-2015 was chosen as it is the period within the stock assessment that most accurately resembles the current trawl fisheries in the region.

their life in their natal river system and estuaries and tend to spend little time in ocean waters (NMFS 1998). Adults generally migrate upriver in spring to spawn and move back downstream after spawning to higher salinity habitats for foraging (SSSRT 2010). Shortnose sturgeon have been listed as endangered under the ESA since 1967 and the 1998 recovery plan identified 19 DPSs across 25 river systems.

7.3.4.1 Potential Impacts of Striped Bass Fisheries on Shortnose Sturgeon

Bycatch of shortnose sturgeon in fisheries targeting other species has been documented throughout its range (SSSRT 2010). Bycatch of shortnose sturgeon primarily occurs in gillnet fisheries, but has also occurred in other gear types including pound nets, fyke nets, and hook and lines. Adult shortnose sturgeon are thought to be especially vulnerable to fishing gears targeting anadromous species (such as shad, striped bass, alewives and herring) during times of extensive migration, particularly their spawning migration (SSSRT 2010; Litwiler 2001).

7.3.5 Giant Manta Ray

While there is considerable uncertainty regarding the species' current abundance throughout its range, the best available information indicates that the species has experienced population declines of potentially significant magnitude within areas of the Indo-Pacific and eastern Pacific portions of its range (Miller and Klimovich 2017). While it's assume that declining populations within the Indo-Pacific and eastern Pacific will likely translate to overall declines in the species throughout its entire range, there is very little information on the abundance, and thus, population trends in the Atlantic portion of its range (Miller and Klimovich 2017).

Based on the giant manta ray's distribution, the species may occur in coastal, nearshore, and pelagic waters off the U.S. east coast (Miller and Klimovich 2017). Along the U.S. East Coast, giant manta rays are usually found in water temperatures between 19 and 22 degrees Celsius (Miller and Klimovich 2017) and have been observed as far north as New Jersey. Given that the species is rarely identified in the fisheries data in the Atlantic, it may be assumed that populations within the Atlantic are small and sparsely distributed (Miller and Klimovich 2017).

7.3.5.1 Potential Impacts of Striped Bass Fishery on Giant Manta Rays

The following sections are not a comprehensive review of all fishing gear types known to interact with a given species and the bycatch reports included below do not represent a complete list.

<u>Bottom Trawl and Gillnet Gear</u>

Giant manta rays are potentially susceptible to capture by gillnet and bottom trawl gear based on records of their capture in fisheries using this gear types (NEFSC observer/sea sampling database, unpublished data). Review of the most recent 10 years of NEFOP data showed that between 2010-2019, two (unidentified) Giant Manta Rays were observed in bottom trawl gear and two were observed in gillnet gear (NMFS NEFSC observer/sea sampling database, unpublished data). Additionally, all of the giant manta ray interactions in gillnet or trawl gear recorded in the NEFOP database (13 between 2001 and 2019) indicate the animals were

encountered alive and released alive. However, details about specific conditions such as injuries, damage, time out of water, how the animal was moved or released, or behavior on release is not always recorded. While there is currently no information on post-release survival, NMFS Southeast Gillnet Observer Program observed a range of 0 to 16 giant manta rays captured per year between 1998 and 2015 and estimated that approximately 89% survived the interaction and release (see NMFS reports available at: http://www.sefsc.noaa.gov/labs/panama/ob/gillnet.htm).

Hook and Line

The most recent 10 years of data on observed or documented interactions between giant manta rays and fishing gear, there have been no observed/documented interactions between giant manta rays and hook and line gear (NEFSC observer/sea sampling database, unpublished data). Based on this information, hook and line gear is not expected to pose an interaction risk to giant manta rays and therefore, is not expected to be source of injury or mortality to this species

7.3.6 Seabirds

Like marine mammals, seabirds are vulnerable to entanglement in commercial fishing gear. Under the Migratory Bird Treaty Act, it is unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory birds except as permitted by regulation (16 U.S.C. 703). Given that an interaction has not been quantified in the Atlantic striped bass fishery, impacts to seabirds are not considered to be significant. Endangered and threatened bird species, such as the piping plover, are unlikely to be impacted by the gear types employed in the striped bass fishery. Other human activities such as coastal development, habitat degradation and destruction, and the presence of organochlorine contaminants are considered to be the major threats to some seabird populations.

7.4 POTENTIAL IMPACTS TO ATLANTIC COASTAL STATE AND INTERSTATE FISHERIES

There are several take reduction teams, whose management actions have potential impacts to coastal striped bass fisheries.

The Mid-Atlantic coastal gillnet fishery is one of two fisheries regulated by the Harbor Porpoise Take Reduction Plan (50 CFR 229.33 and 229.34). Amongst other measures, the plan uses time area closures in combination with pingers in Northeast waters, and time area closures along with gear modifications for both small and large mesh gillnets in mid-Atlantic waters. Although the plan predominately impacts the dogfish and monkfish fisheries due to higher porpoise bycatch rates, other gillnet fisheries are also affected.

The Atlantic Large Whale Take Reduction Plan (50 CFR 229.32) (ALWTRP) addresses the incidental bycatch of large baleen whales, primarily the North Atlantic right whale and the humpback whale, in several fisheries including Mid-Atlantic coastal gillnet fishery. Amongst other measures, the plan closes right whale critical habitat areas to specific types of fishing gear

during specific seasons, and modifies fishing gear and practices. The Atlantic Large Whale Take Reduction Team continues to identify ways to reduce possible interactions between large whales and commercial gear. In 2014 and 2015, the ALWTRP was modified to reduce the number of vertical lines associated with trap/pot fisheries and required expanded gear markings for gillnets and traps in Jeffrey's Ledge and Jordan Basin (79 FR 35686, June 27, 2014; 80 FR 30367, May 28, 2015).

The Bottlenose Dolphin Take Reduction Team first convened in 2001 to discuss incidental catch of coastal bottlenose dolphins in Category I and II fisheries. In 2006, a Bottlenose Dolphin Take Reduction Plan was established, which created gear regulations for the mid-Atlantic coastal gillnet fishery, the Virginia pound net fishery, the mid-Atlantic beach seine fishery, and the North Carolina inshore gillnet fishery, among others. Specifically, the plan established mesh sizes for the gill net fisheries and prohibited night fishing for some regions and gear types (71 FR 24776, April 26, 2006).

Based on a consensus recommendation from the Bottlenose Dolphin Take Reduction Team, NOAA Fisheries issued a final rule in 2015 amending the Bottlenose Dolphin Take Reduction Plan and its implementing regulations under the Marine Mammal Protection Act (MMPA) to require the year-round use of modified pound net leaders for offshore Virginia pound nets in specified waters of the lower mainstem Chesapeake Bay and coastal state waters (80 FR 6925, February 9, 2015). The rule also finalized Virginia pound net-related definitions, gear prohibitions, and non-regulatory measures. NOAA Fisheries also amended regulations and definitions for Virginia pound nets under the Endangered Species Act (ESA) for sea turtle conservation to be consistent with this final rule. Pound net regulations were enacted to protect both sea turtles and bottlenose dolphins. More information on this rule is available here: https://www.fisheries.noaa.gov/action/amendment-virginia-pound-net-regulations.

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9.0 TABLES

Note: Tables 1-7 are in-text.

Table 8. Base quota, 2020 quota, and 2020 harvest by state in pounds. Source: 2021 state compliance reports. 2020 quota was based on Addendum VI and approved conservation equivalency programs.

State	Base Quota	2020 Quota^	2020 Harvest
Ocean			
Maine*	154	154	-
New Hampshire*	3,537	3,537	-
Massachusetts	713,247	735,240	386,924
Rhode Island	148,889	148,889	115,891
Connecticut*	14,607	14,607	-
New York	652,552	640,718	473,461
New Jersey**	197,877	215,912	-
Delaware	118,970	142,474	137,986
Maryland	74,396	89,094	83,594
Virginia	113,685	125,034	77,239
North Carolina	295,495	295,495	0
Ocean Total	**2,333,409**	**2,411,154**	**1,275,095**
Chesapeake Bay			
Maryland	**2,588,603**	1,442,120	1,273,757
Virginia		983,393	611,745
PRFC		572,861	400,319
Bay Total		**2,998,374**	**2,285,821**

* Commercial harvest/sale prohibited, with no re-allocation of quota.
** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.
^ 2020 quota changed through conservation equivalency by either changing size limit with equivalent 18% quota reduction (MA, NY), or by taking a greater than 18% reduction in recreational removals to offset a less than 18% commercial quota reduction (NJ, DE, MD, PRFC, VA).
Note: Maryland's Chesapeake Bay quota for 2020 was adjusted to account for the overage in 2019.

Table 9. Summary of Atlantic striped bass commercial regulations in 2020. Source: 2021 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
ME	Commercial fishing prohibited		
NH	Commercial fishing prohibited		
MA	≥35" minimum size; no gaffing undersized fish. 15 fish/day with commercial boat permit; 2 fish/day with rod and reel permit.	735,240 lbs. Hook & Line only.	6.24 until quota reached, Mondays and Wednesdays only. (In-season adjustment added Tuesdays effective Sept 1.) July 3rd, July 4th and Labor Day closed. Cape Cod Canal closed to commercial striped bass fishing.
RI	Floating fish trap: 26" minimum size unlimited possession limit until 70% of quota reached, then 500 lbs. per licensee per day	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	4.1 – 12.31
	General category (mostly rod & reel): 34" min. 5 fish/vessel/day limit.		5.20-6.30, 7.1-12.31, or until quota reached. Closed Fridays, Saturdays, and Sundays during both seasons.
CT	Commercial fishing prohibited; bonus program in CT suspended indefinitely in 2020.		
NY	26"-38" size; (Hudson River closed to commercial harvest)	640,718 lbs. Pound Nets, Gill Nets (6-8"stretched mesh), Hook & Line.	6.1 – 12.15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: 1 fish at 24" to <28" slot size	215,912 lbs.	5.15 – 12.31 (permit required)
PA	Commercial fishing prohibited		

(Table 9 continued – Summary of commercial regulations in 2020).

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
DE	Gill Net: 20" min in DE Bay/River during spring season. 28" in all other waters/seasons.	Gillnet: 135,350 lbs. No fixed nets in DE River.	Gillnet: 2.15-5.31 (2.15-3.30 for Nanticoke River) & 11.15-12.31; drift nets only 2.15-28 & 5.1-31; no trip limit.
	Hook and Line: 28" min	Hook and line: 7,124 lbs.	Hook and Line: 4.1–12.31, 200 lbs./day trip limit
MD	Chesapeake Bay and Rivers: 18–36" Common pool trip limits: Hook and Line - 250 lbs./license/week Gill Net - 300 lbs./license/week	1,445,394 lbs. (part of Bay-wide quota) – Initial quota 1,442,120 lbs. – Adjusted quota due to 2019 overage	Bay Pound Net: 6.1-12.31 Bay Haul Seine: 6.1-12.31 Bay Hook & Line: 6.4-12.31 Bay Drift Gill Net: 1.1-2.28, 12.1-12.31
	Ocean: 24" minimum	Ocean: 89,094 lbs.	1.1-5.31, 10.1-12.31
PRFC	18" min all year; 36" max 2.15–3.25	572,861 lbs. (part of Bay-wide quota)	Hook & Line: 1.1-3.25, 6.1-12.31 Pound Net & Other: 2.15-3.25, 6.1-12.15 Gill Net: 1.1-3.25, 11.9-12.31 Misc. Gear: 2.15-3.25, 6.1-12.15
VA	Bay and Rivers: 18" min; 28" max size limit 3.15–6.15	983,393 lbs. (part of Bay-wide quota)	1.16-12.31
	Ocean: 28" min	125,034 lbs.	
NC	Ocean: 28" min	295,495 lbs. (split between gear types).	Seine fishery was not opened Gill net fishery was not opened Trawl fishery was not opened

Table 10. Summary of Atlantic striped bass recreational regulations in 2020. Source: 2021 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL).

STATE	SIZE LIMITS (TL)/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
ME	28” to <35"	1 fish/day	Hook & line only; circle hooks only when using live bait	All year, except spawning areas are closed 12.1-4.30 and C&R only 5.1-6.30
NH	28” to <35"	1 fish/day	Gaffing and culling prohibited; Use of corrodible non-offset circle hooks required if angling with bait	All year
MA	28” to <35"	1 fish/day	Hook & line only; no high-grading; gaffs and other injurious removal devices prohibited. Private angler circle hook requirement when fishing with natural bait (exception for artificial lures).	All year
RI	28” to <35"	1 fish/day	The use of circle hooks is required by any vessel or person while fishing recreationally with bait for striped bass	All year
CT	28” to <35"	1 fish/day	Inline circle hooks only when using whole, cut or live natural bait (Dec 1st, 2020). Spearing and gaffing prohibited	All year
NY	Ocean and DE River: Slot Size: 28 -35	1 fish/day	Angling only. Spearing permitted in ocean waters. C&R only during closed season.	Ocean: 4.15-12.15 Delaware River: All year
	HR: Slot Size: 18 -28	1 fish/day	Angling only.	Hudson River: 4.1-11.30
NJ	1 fish at 28” to < 38” (effective 4/1/2020)	1 fish/day	Non-offset circle hooks must be used when using bait with a #2 sized hook or larger in Delaware River & tributaries from 4.1-5.31.	Closed 1.1 – last day of Feb in all waters except in the Atlantic Ocean, and closed 4.1-5.31 in the lower DE River and tributaries
PA	Upstream from Calhoun St Bridge: 1 fish at 28” to <35"			
	Downstream from Calhoun St Bridge: 1 fish at 28” to <35”, and 2 fish at 21-24” slot size limit from 4.1 – 5.31			

(Table 10 continued – Summary of recreational regulations in 2020).

STATE	SIZE LIMITS/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
DE	28” to <35"	1 fish/day	Hook & line, spear (for divers) only. Circle hooks required in spawning season.	All year. C&R only 4.1-5.31 in spawning grounds. 20”-25”slot from 7.1-8.31 in DE River, Bay & tributaries
MD	Ocean: 28” to <35"	1 fish/day		All year
	Chesapeake Bay and tribs^+	C&R only	no eels; no stinger hooks; barbless hooks when trolling; circle or J-hooks when using live bait; max 6 lines when trolling	1.1-2.28, 3.1-3.31, 12.11-12.31
	Chesapeake Bay: 35" min	1 fish/day	Geographic restrictions apply+.	5.1-5.15
	Chesapeake Bay: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28"		Geographic restrictions apply+; circle hooks if chumming or live-lining; no treble hooks when bait fishing.	5.16-5.31
	Chesapeake Bay and tribs: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28"		All Bay and tribs open; circle hooks if chumming or live-lining; no treble hooks when bait fishing.	6.1-8.15 (no targeting 8.16-8/31)*, 9.1-12.10
PRFC	Spring Trophy: 1 fish/day, 35” minimum size		No more than two hooks or sets of hooks for each rod or line; no live eel; no high-grading	5.1-5.15
	Summer and Fall: 2 fish/day, 20” min		No more than two hooks or sets of hooks for each rod or line.	5.16-7.6 and 8.21-12.31; closed 7.7-8.20 (No Direct Targeting)

^ Susquehanna Flats: C&R only Jan 1 – March 31 (no treble hooks when bait fishing); 1 fish at 19”-26” slot May 16 – May 31.
+ Maryland maps available here: https://dnr.maryland.gov/fisheries/pages/sb_2020_regs.aspx
*Open season in 2021 for Maryland Chesapeake Bay and tributaries changed to 6.1-7.15 (no targeting 7.16-7.31), 8.1-12.10.

(Table 10 continued – Summary of recreational regulations in 2020).

STATE	SIZE LIMITS/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
DC	18” minimum size	1 fish/day	Hook and line only	5.16-12.31
VA	Ocean: 28”-36” slot limit	1 fish/day	Hook & line, rod & reel, hand line only. No gaffing. Circle hooks required if/when fishing with live bait (as of July 2020).	1.1-3.31, 5.16-12.31
	Ocean Spring Trophy: NO SPRING TROPHY SEASON			
	Chesapeake Bay Spring Trophy: NO SPRING TROPHY SEASON			
	Bay Spring: 20”-28” slot limit	1 fish/day	Hook & line, rod & reel, hand line only. No gaffing. Circle hooks required if/when fishing with live bait (as of July 2020).	5.16-6.15
	Bay Fall: 20 - 36” slot limit	1 fish/day	Hook & line, rod & reel, hand line only. No gaffing. Circle hooks required if/when fishing with live bait (as of July 2020).	10.4-12.31
NC	28” to <35"	1 fish/day	No gaffing allowed. Circle hooks required when fishing with natural bait.	All year

Table 11. Total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1990-2020. Note: Harvest is from state compliance reports/MRIP (July 8, 2021), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina.

Year	Commercial		Recreational		Total Removals
	Harvest	Discards*	Harvest	Release Mortality	
1990	93,888	47,859	578,897	442,811	1,163,455
1991	158,491	92,480	798,260	715,478	1,764,709
1992	256,476	193,281	869,779	937,611	2,257,147
1993	314,526	115,859	789,037	812,404	2,031,826
1994	325,401	166,105	1,055,523	1,360,872	2,907,900
1995	537,412	188,507	2,287,578	2,010,689	5,024,186
1996	854,102	257,749	2,487,422	2,600,526	6,199,800
1997	1,076,591	325,998	2,774,981	2,969,781	7,147,351
1998	1,215,219	347,343	2,915,390	3,259,133	7,737,085
1999	1,223,572	337,036	3,123,496	3,140,905	7,825,008
2000	1,216,812	209,329	3,802,477	3,044,203	8,272,820
2001	931,412	182,606	4,052,474	2,449,599	7,616,091
2002	928,085	199,770	4,005,084	2,792,200	7,925,139
2003	854,326	131,319	4,781,402	2,848,445	8,615,492
2004	879,768	157,724	4,553,027	3,665,234	9,255,753
2005	970,403	146,126	4,480,802	3,441,928	9,039,259
2006	1,047,648	158,808	4,883,961	4,812,332	10,902,750
2007	1,015,114	160,728	3,944,679	2,944,253	8,064,774
2008	1,027,837	106,791	4,381,186	2,391,200	7,907,013
2009	1,049,838	130,200	4,700,222	1,942,061	7,822,321
2010	1,031,430	134,817	5,388,440	1,760,759	8,315,446
2011	944,777	85,503	5,006,358	1,482,029	7,518,667
2012	870,684	198,911	4,046,299	1,847,880	6,963,774
2013	784,379	114,009	5,157,760	2,393,425	8,449,573
2014	750,263	111,753	4,033,746	2,172,342	7,068,103
2015	621,952	84,463	3,085,725	2,307,133	6,099,273
2016	609,028	88,171	3,500,434	2,981,430	7,179,063
2017	592,670	98,343	2,937,911	3,421,110	7,050,035
2018	621,123	100,646	2,244,765	2,826,667	5,793,201
2019	653,807	84,013	2,150,936	2,589,045	5,477,801
2020	577,363	65,319	1,709,973	2,760,231	5,112,886

* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

Table 12. Proportion of total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1990-2020. Note: Harvest is from state compliance reports/MRIP (July 8, 2021), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina.

Year	Commercial		Recreational	
	Harvest	Discards*	Harvest	Release Mortality
1990	8%	4%	50%	38%
1991	9%	5%	45%	41%
1992	11%	9%	39%	42%
1993	15%	6%	39%	40%
1994	11%	6%	36%	47%
1995	11%	4%	46%	40%
1996	14%	4%	40%	42%
1997	15%	5%	39%	42%
1998	16%	4%	38%	42%
1999	16%	4%	40%	40%
2000	15%	3%	46%	37%
2001	12%	2%	53%	32%
2002	12%	3%	51%	35%
2003	10%	2%	55%	33%
2004	10%	2%	49%	40%
2005	11%	2%	50%	38%
2006	10%	1%	45%	44%
2007	13%	2%	49%	37%
2008	13%	1%	55%	30%
2009	13%	2%	60%	25%
2010	12%	2%	65%	21%
2011	13%	1%	67%	20%
2012	13%	3%	58%	27%
2013	9%	1%	61%	28%
2014	11%	2%	57%	31%
2015	10%	1%	51%	38%
2016	8%	1%	49%	42%
2017	8%	1%	42%	49%
2018	11%	2%	39%	49%
2019	12%	2%	39%	47%
2020	11%	1%	33%	54%

* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added. Note: Percent may not sum to 100 due to rounding.

Table 13. Total harvest of Atlantic striped bass by sector, 1990-2020. Note: Harvest is from state compliance reports/MRIP (Query July 8, 2021). Estimates exclude inshore harvest from North Carolina.

Year	Numbers of Fish			Pounds		
	Commercial	Recreational	Total	Commercial	Recreational	Total
1990	93,888	578,897	672,785	715,902	8,207,515	8,923,417
1991	158,491	798,260	956,751	966,096	10,640,601	11,606,697
1992	256,476	869,779	1,126,255	1,508,064	11,921,967	13,430,031
1993	314,526	789,037	1,103,563	1,800,176	10,163,767	11,963,943
1994	325,401	1,055,523	1,380,924	1,877,197	14,737,911	16,615,108
1995	537,412	2,287,578	2,824,990	3,775,586	27,072,321	30,847,907
1996	854,102	2,487,422	3,341,524	4,822,874	28,625,685	33,448,559
1997	1,076,591	2,774,981	3,851,572	6,078,566	30,616,093	36,694,659
1998	1,215,219	2,915,390	4,130,609	6,552,111	29,603,199	36,155,310
1999	1,223,572	3,123,496	4,347,068	6,474,290	33,564,988	40,039,278
2000	1,216,812	3,802,477	5,019,289	6,719,521	34,050,817	40,770,338
2001	931,412	4,052,474	4,983,886	6,266,769	39,263,154	45,529,923
2002	928,085	4,005,084	4,933,169	6,138,180	41,840,025	47,978,205
2003	854,326	4,781,402	5,635,728	6,750,491	54,091,836	60,842,327
2004	879,768	4,553,027	5,432,795	7,317,897	53,031,074	60,348,971
2005	970,403	4,480,802	5,451,205	7,121,492	57,421,174	64,542,666
2006	1,047,648	4,883,961	5,931,609	6,568,970	50,674,431	57,243,401
2007	1,015,114	3,944,679	4,959,793	7,047,179	42,823,614	49,870,793
2008	1,027,837	4,381,186	5,409,023	7,190,701	56,665,318	63,856,019
2009	1,049,838	4,700,222	5,750,060	7,217,380	54,411,389	61,628,769
2010	1,031,430	5,388,440	6,419,870	6,996,713	61,431,360	68,428,073
2011	944,777	5,006,358	5,951,135	6,789,792	59,592,092	66,381,884
2012	870,684	4,046,299	4,916,983	6,516,761	53,256,619	59,773,380
2013	784,379	5,157,760	5,942,139	5,819,678	65,057,289	70,876,967
2014	750,263	4,033,746	4,784,009	5,937,949	47,948,610	53,886,559
2015	621,952	3,085,725	3,707,677	4,829,997	39,898,799	44,728,796
2016	609,028	3,500,434	4,109,462	4,848,772	43,671,532	48,520,304
2017	592,670	2,937,911	3,530,581	4,816,395	37,952,581	42,768,976
2018	621,123	2,244,765	2,865,888	4,741,342	23,069,028	27,810,370
2019	653,807	2,150,936	2,804,743	4,284,831	23,556,287	27,841,118
2020	577,363	1,709,973	2,287,336	3,560,917	14,858,984	18,419,901

Table 14. Commercial harvest by region in pounds (x1000), 1995-2020. Source: state compliance reports. ^Estimates exclude inshore harvest.

Year	Ocean								Chesapeake Bay				Grand Total
	MA	RI	NY	DE	MD	VA	NC^	Total	MD	PRFC	VA	Total	
1995	751.5	113.5	500.8	38.5	79.3	46.2	344.6	1,874.3	1,185.0	198.5	517.8	1,901.3	3,775.6
1996	695.9	122.6	504.4	120.5	75.7	165.9	58.2	1,743.2	1,487.7	346.8	1,245.2	3,079.7	4,822.9
1997	784.9	96.5	460.8	166.0	94.0	179.1	463.1	2,244.4	2,119.2	731.9	983.0	3,834.2	6,078.6
1998	810.1	94.7	485.9	163.7	84.6	375.0	273.0	2,287.0	2,426.7	726.2	1,112.2	4,265.1	6,552.1
1999	766.2	119.7	491.8	176.3	62.6	614.8	391.5	2,622.9	2,274.8	653.3	923.4	3,851.4	6,474.3
2000	796.2	111.8	542.7	145.1	149.7	932.7	162.4	2,840.5	2,261.8	666.0	951.2	3,879.0	6,719.5
2001	815.4	129.7	633.1	198.6	113.9	782.4	381.1	3,054.1	1,660.9	658.7	893.1	3,212.6	6,266.8
2002	924.9	129.2	518.6	146.2	93.2	710.2	441.0	2,963.2	1,759.4	521.0	894.4	3,174.9	6,138.2
2003	1,055.5	190.2	753.3	191.2	103.9	166.4	201.2	2,661.7	1,721.8	676.6	1,690.4	4,088.7	6,750.5
2004	1,214.2	215.1	741.7	176.5	134.2	161.3	605.4	3,248.3	1,790.3	772.3	1,507.0	4,069.6	7,317.9
2005	1,102.2	215.6	689.8	174.0	46.9	185.2	604.5	3,018.2	2,008.7	533.6	1,561.0	4,103.3	7,121.5
2006	1,322.3	5.1	688.4	184.2	91.1	195.0	74.2	2,560.2	2,116.3	673.5	1,219.0	4,008.7	6,569.0
2007	1,039.3	240.6	731.5	188.7	96.3	162.3	379.5	2,838.1	2,240.6	599.3	1,369.2	4,209.1	7,047.2
2008	1,160.3	245.9	653.1	188.7	118.0	163.1	288.4	2,817.6	2,208.0	613.8	1,551.3	4,373.1	7,190.7
2009	1,134.3	234.8	789.9	192.3	127.3	140.4	190.0	2,809.0	2,267.3	727.8	1,413.3	4,408.4	7,217.4
2010	1,224.5	248.9	786.8	185.4	44.8	127.8	276.4	2,894.7	2,105.8	683.2	1,313.0	4,102.0	6,996.7
2011	1,163.9	228.2	855.3	188.6	21.4	158.8	246.4	2,862.5	1,955.1	694.2	1,278.1	3,927.3	6,789.8
2012	1,218.5	239.9	683.8	194.3	77.6	170.8	7.3	2,592.0	1,851.4	733.7	1,339.6	3,924.7	6,516.8
2013	1,004.5	231.3	823.8	191.4	93.5	182.4	0.0	2,526.9	1,662.2	623.8	1,006.8	3,292.8	5,819.7
2014	1,138.5	216.9	531.5	167.9	120.9	183.7	0.0	2,359.4	1,805.7	603.4	1,169.4	3,578.5	5,937.9
2015	866.0	188.3	516.3	144.1	34.6	138.1	0.0	1,887.5	1,436.9	538.0	967.6	2,942.5	4,830.0
2016	938.7	174.7	575.0	136.5	19.7	139.2	0.0	1,983.9	1,425.5	537.1	902.3	2,864.9	4,848.8
2017	823.4	175.3	701.2	141.8	80.5	133.9	0.0	2,056.1	1,439.8	492.7	827.8	2,760.3	4,816.4
2018	753.7	176.6	617.2	155.0	79.8	134.2	0.0	1,916.6	1,424.3	449.4	951.0	2,824.7	4,741.3
2019	584.7	144.2	358.9	132.6	82.8	138.0	0.0	1,441.2	1,475.2	417.3	951.1	2,843.6	4,284.8
2020	386.9	115.9	473.5	138.0	83.6	77.2	0.0	1,275.1	1,273.8	400.3	611.7	2,285.8	3,560.9

Table 15. Commercial harvest and discards by region in numbers of fish (x1000), 1995-2020. Source: harvest is from state compliance reports, discards is from ASMFC. ^Estimates exclude inshore harvest.

Year	Ocean								Chesapeake Bay				Discards*			Grand Total Removals
	MA	RI	NY	DE	MD	VA	NC^	Total	MD	PRFC	VA	Total	Ocean	Bay	Total	
1995	39.9	19.7	43.7	5.6	4.0	9.9	23.4	146.1	267.0	29.3	95.0	391.3	141.7	46.8	188.5	725.9
1996	37.3	18.6	40.5	20.7	9.0	14.1	3.3	143.5	486.2	46.2	178.2	710.6	168.8	89.0	257.7	1,111.9
1997	44.0	7.1	37.6	33.2	8.4	17.3	25.8	173.4	620.3	87.8	195.2	903.2	249.7	76.3	326.0	1,402.6
1998	44.3	8.8	45.1	31.4	10.3	41.1	14.2	195.2	729.6	93.3	197.1	1,020.1	313.9	33.5	347.3	1,562.6
1999	40.9	11.6	49.9	34.8	10.2	48.7	21.1	217.2	776.0	90.6	139.8	1,006.3	305.2	31.9	337.0	1,560.6
2000	42.1	9.4	54.9	25.2	13.3	54.5	6.5	205.8	787.6	91.5	132.0	1,011.0	176.9	32.5	209.3	1,426.1
2001	45.8	10.9	58.3	34.4	11.1	42.3	25.0	227.7	538.8	87.8	77.1	703.7	140.5	42.2	182.6	1,114.0
2002	49.8	11.7	47.1	30.4	10.2	38.8	23.2	211.3	571.7	80.3	64.7	716.8	151.2	48.6	199.8	1,127.9
2003	56.4	15.5	68.4	31.5	11.6	10.5	5.8	199.6	427.9	83.1	143.7	654.7	98.8	32.5	131.3	985.6
2004	63.6	16.0	70.4	28.4	14.1	10.4	31.0	233.9	447.0	92.6	106.3	645.9	111.4	46.3	157.7	1,037.5
2005	60.5	14.9	70.6	26.3	6.1	11.3	27.3	217.1	563.9	80.6	108.9	753.3	87.2	58.9	146.1	1,116.5
2006	70.5	15.4	73.6	30.2	10.9	11.5	2.7	214.9	645.1	92.3	95.4	832.7	99.0	59.8	158.8	1,206.5
2007	54.2	13.9	78.5	31.1	11.6	10.6	16.8	216.7	587.6	86.5	124.3	798.4	94.3	66.4	160.7	1,175.8
2008	61.1	16.6	73.3	31.9	14.0	10.8	13.4	221.0	580.7	82.0	144.1	806.8	63.6	43.1	106.8	1,134.6
2009	59.4	16.8	82.6	21.6	12.5	8.9	9.0	210.9	605.6	89.6	143.8	839.0	60.5	69.7	130.2	1,180.0
2010	60.4	15.7	82.4	19.8	5.4	9.4	13.7	206.7	579.2	90.6	154.9	824.7	40.4	94.5	134.8	1,166.2
2011	58.7	14.3	87.4	20.5	2.1	12.2	10.9	206.0	488.9	96.1	153.7	738.7	35.0	50.5	85.5	1,030.3
2012	61.5	15.0	67.1	15.7	6.9	10.8	0.3	177.3	465.6	90.7	137.0	693.4	25.5	173.4	198.9	1,069.6
2013	58.6	13.8	76.2	17.7	7.6	10.0	0.0	183.8	391.5	78.0	131.0	600.5	36.5	77.5	114.0	898.4
2014	58.0	10.5	52.9	14.9	8.5	10.0	0.0	154.8	362.2	81.5	151.8	595.5	46.3	65.5	111.8	862.0
2015	42.3	11.3	45.6	11.0	2.6	7.7	0.0	120.4	298.3	71.0	132.2	501.5	33.8	50.7	84.5	706.4
2016	48.0	11.7	51.0	8.8	1.2	7.6	0.0	128.3	284.9	73.7	122.2	480.8	41.3	46.8	88.2	697.2
2017	41.2	10.1	61.6	9.5	3.5	7.6	0.0	133.5	263.6	67.5	128.0	459.2	78.1	20.2	98.3	691.0
2018	37.8	10.1	52.2	11.4	3.5	6.9	0.0	121.9	286.4	64.4	148.4	499.3	61.4	39.3	100.6	721.8
2019	29.6	7.3	29.6	8.2	3.3	6.9	0.0	84.9	356.7	62.6	149.6	568.9	19.4	64.6	84.0	737.8
2020	19.6	5.0	44.1	8.4	3.4	4.4	0.0	84.9	299.9	66.6	125.9	391.3	18.6	46.7	65.3	642.7

* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

Table 16. Total recreational catch, releases, and release mortality in numbers of fish by region (x1000), 1995-2020. Source: MRIP (Query July 8, 2021). Estimates exclude inshore harvest from North Carolina.

Year	Harvest (A+B1)			Releases (B2)			Total Catch (A+B1+B2)			Release Mortality (9% of B2)		
	Ocean	Bay	Total	Ocean	Bay	Total	Ocean	Bay	Total	Ocean	Bay	Total
1995	1,260	1,028	2,288	16,587	5,754	22,341	17,847	6,782	24,629	1,493	518	2,011
1996	1,362	1,125	2,487	22,384	6,511	28,895	23,746	7,636	31,382	2,015	586	2,601
1997	1,514	1,261	2,775	22,819	10,178	32,998	24,333	11,439	35,773	2,054	916	2,970
1998	1,647	1,268	2,915	29,294	6,918	36,213	30,941	8,187	39,128	2,637	623	3,259
1999	1,758	1,366	3,123	26,139	8,760	34,899	27,897	10,125	38,022	2,353	788	3,141
2000	2,198	1,604	3,802	25,090	8,734	33,824	27,289	10,338	37,627	2,258	786	3,044
2001	2,758	1,294	4,052	21,073	6,145	27,218	23,831	7,440	31,270	1,897	553	2,450
2002	2,756	1,249	4,005	23,653	7,371	31,024	26,409	8,620	35,030	2,129	663	2,792
2003	3,124	1,658	4,781	20,678	10,971	31,649	23,802	12,628	36,431	1,861	987	2,848
2004	3,078	1,475	4,553	27,868	12,857	40,725	30,946	14,332	45,278	2,508	1,157	3,665
2005	3,182	1,299	4,481	28,663	9,580	38,244	31,845	10,879	42,724	2,580	862	3,442
2006	2,789	2,095	4,884	41,239	12,232	53,470	44,028	14,327	58,354	3,711	1,101	4,812
2007	2,327	1,618	3,945	25,135	7,579	32,714	27,462	9,196	36,659	2,262	682	2,944
2008	3,025	1,356	4,381	21,878	4,691	26,569	24,904	6,046	30,950	1,969	422	2,391
2009	2,898	1,803	4,700	16,740	4,838	21,578	19,638	6,641	26,279	1,507	435	1,942
2010	3,906	1,483	5,388	13,606	5,957	19,564	17,512	7,440	24,952	1,225	536	1,761
2011	3,617	1,389	5,006	12,644	3,823	16,467	16,261	5,212	21,473	1,138	344	1,482
2012	3,071	975	4,046	11,242	9,290	20,532	14,314	10,265	24,578	1,012	836	1,848
2013	3,723	1,435	5,158	19,463	7,131	26,594	23,186	8,565	31,751	1,752	642	2,393
2014	2,276	1,758	4,034	15,107	9,031	24,137	17,382	10,789	28,171	1,360	813	2,172
2015	1,770	1,316	3,086	15,419	10,216	25,635	17,189	11,532	28,721	1,388	919	2,307
2016	1,817	1,683	3,500	17,794	15,333	33,127	19,611	17,016	36,627	1,601	1,380	2,981
2017	1,738	1,200	2,938	28,963	9,050	38,012	30,701	10,249	40,950	2,607	814	3,421
2018	1,195	1,050	2,245	22,739	8,669	31,407	23,933	9,719	33,652	2,046	780	2,827
2019	1,342	809	2,151	21,131	7,636	28,767	22,473	8,445	30,918	1,902	687	2,589
2020	923	787	1,710	22,710	7,959	30,669	23,633	8,746	32,379	2,044	716	2,760

Table 17. Recreational harvest by region in pounds (x1000), 1995-2020. Source: MRIP (Query July 8, 2021). ^Estimates exclude inshore harvest.

Year	Ocean												Chesapeake Bay			Grand Total
	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC^	Total	MD	VA	Total	
1995	83	127	2,739	1,049	1,331	5,594	8,587	301	0.0	141	232	20,184	3,115	3,773	6,889	27,072
1996	95	183	2,983	1,626	1,405	10,739	3,959	795	0.0	812	392	22,990	2,789	2,847	5,636	28,626
1997	223	538	5,133	1,997	2,263	8,543	2,179	374	0.0	1,096	865	23,211	3,203	4,203	7,405	30,616
1998	305	262	7,359	1,544	1,807	4,889	4,182	645	579	545	636	22,754	3,023	3,826	6,849	29,603
1999	196	181	4,995	1,904	1,327	7,414	9,473	312	3.8	110	339	26,256	2,323	4,986	7,309	33,565
2000	347	109	4,863	2,008	890	7,053	9,768	925	0.0	416	277	26,656	3,503	3,892	7,395	34,051
2001	446	334	7,188	2,044	1,101	5,058	12,314	695	314	382	1,082	30,959	2,928	5,376	8,304	39,263
2002	775	322	10,261	2,708	1,251	5,975	9,621	589	0.0	1,135	998	33,634	2,643	5,563	8,206	41,840
2003	458	466	10,252	4,052	2,666	10,788	12,066	763	14	392	966	42,882	5,246	5,964	11,210	54,092
2004	554	268	9,329	2,460	2,229	6,437	13,303	870	57	1,067	6,656	43,230	4,860	4,941	9,801	53,031
2005	546	384	7,541	3,155	3,133	11,637	14,289	680	7.7	487	3,947	45,808	7,753	3,860	11,614	57,421
2006	610	244	6,787	1,569	2,854	9,845	12,716	586	2.8	921	2,975	39,109	6,494	5,071	11,565	50,674
2007	422	93	7,010	2,077	2,786	10,081	8,390	207	0.0	516	1,965	33,547	5,249	4,027	9,277	42,824
2008	607	182	8,424	970	2,273	18,000	12,407	847	0.0	1,690	750	46,150	5,639	4,877	10,515	56,665
2009	781	222	9,410	2,185	1,458	7,991	17,040	940	138	48	187	40,399	8,672	5,340	14,012	54,411
2010	218	238	9,959	2,102	2,323	18,190	17,454	895	107	206	1,198	52,891	6,482	2,059	8,541	61,431
2011	245	659	11,953	3,066	981	13,151	15,715	605	8.6	308	4,467	51,157	6,220	2,214	8,435	59,592
2012	152	432	14,941	2,096	1,835	13,096	11,551	644	21	1.7	0.0	44,768	3,819	4,670	8,488	53,257
2013	331	831	9,025	4,428	4,236	16,819	19,451	1,073	1,051	67	0.0	57,313	5,137	2,607	7,744	65,057
2014	423	203	7,965	3,402	2,665	13,998	8,886	381	159	0.0	0.0	38,083	8,877	989	9,866	47,949
2015	132	202	7,799	1,394	2,585	8,695	9,982	340	28	0.0	0.0	31,156	7,786	957	8,743	39,899
2016	189	191	3,731	1,776	912	12,053	12,790	86	7.2	0.0	0.0	31,735	10,912	1,024	11,936	43,672
2017	318	394	5,664	1,655	1,560	8,885	10,886	666	0.0	1.8	0.0	30,030	7,309	613	7,922	37,953
2018	142	130	4,925	1,121	1,165	3,453	7,012	33	0.0	0.0	0.0	17,982	4,683	404	5,087	23,069
2019	415	291	2,698	2,300	685	7,072	6,674	44	7.3	0.0	0.0	20,187	3,145	224	3,370	23,556
2020	180	29	776	483	830	2,202	6,584	16	0.0	0.0	0.0	11,100	3,480	280	3,759	14,859

Table 18. Recreational harvest by region in numbers of fish (x1000), 1995-2020. Source: MRIP (Query July 8, 2021). ^Estimates exclude inshore harvest.

Year	Ocean												Chesapeake Bay			Grand Total
	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC^	Total	MD	VA	Total	
1995	4.0	7.4	124.3	70.9	75.8	250.3	671.4	25.8	0.1	13.4	16.5	1,259.8	491.1	536.7	1,027.7	2,287.6
1996	4.1	11.0	156.6	100.6	95.9	511.6	301.2	59.7	0.0	89.6	31.7	1,362.0	564.2	561.3	1,125.5	2,487.4
1997	43.0	29.9	365.6	124.7	149.0	450.5	171.2	29.1	0.0	91.1	60.1	1,514.1	552.4	708.4	1,260.8	2,775.0
1998	65.3	14.8	500.9	91.1	114.1	383.8	289.2	51.0	24.3	71.3	41.2	1,647.0	596.2	672.2	1,268.4	2,915.4
1999	37.5	9.9	327.1	116.6	88.2	450.9	657.1	28.3	1.6	14.1	26.4	1,757.8	530.9	834.8	1,365.7	3,123.5
2000	77.3	6.0	306.2	156.8	84.0	494.6	939.8	88.3	0.0	27.2	18.1	2,198.3	810.9	793.3	1,604.2	3,802.5
2001	91.9	23.5	551.0	149.8	78.2	364.2	1,267.5	70.6	64.1	36.7	60.7	2,758.1	513.3	781.1	1,294.4	4,052.5
2002	135.2	28.1	723.5	181.5	92.5	439.3	957.6	65.7	0.0	76.4	56.3	2,756.1	464.4	784.6	1,249.0	4,005.1
2003	99.7	41.3	797.2	226.4	181.7	678.4	942.8	75.7	0.9	29.3	50.4	3,123.8	816.0	841.6	1,657.6	4,781.4
2004	118.3	22.1	666.7	159.6	134.5	458.1	1,042.1	66.6	11.0	75.9	323.2	3,078.1	657.5	817.4	1,474.9	4,553.0
2005	118.3	35.5	536.1	195.6	202.6	854.6	958.1	48.8	3.6	34.2	194.9	3,182.2	815.5	483.1	1,298.6	4,480.8
2006	140.9	20.9	483.2	129.3	168.3	614.8	972.2	44.5	0.4	80.6	134.2	2,789.0	1,342.0	753.0	2,094.9	4,884.0
2007	95.5	8.1	471.9	135.8	163.9	602.8	722.2	17.2	0.0	28.0	81.8	2,327.1	1,127.3	490.3	1,617.6	3,944.7
2008	133.4	11.9	514.1	73.4	132.8	1,169.9	791.0	67.7	0.0	94.4	36.9	3,025.4	779.7	576.1	1,355.8	4,381.2
2009	146.5	17.3	695.0	138.4	100.3	574.2	1,141.5	64.8	10.2	3.0	6.5	2,897.7	1,094.4	708.1	1,802.5	4,700.2
2010	37.3	21.4	808.2	162.0	170.2	1,449.0	1,091.4	61.4	12.5	25.3	67.1	3,905.9	1,139.3	343.2	1,482.6	5,388.4
2011	48.5	54.2	873.5	202.2	91.1	1,005.3	1,038.9	43.7	0.8	51.2	207.6	3,617.1	1,112.1	277.2	1,389.3	5,006.4
2012	31.4	37.3	1,010.6	130.7	137.1	927.5	742.4	51.3	2.9	0.3	0.0	3,071.5	716.7	258.1	974.8	4,046.3
2013	73.3	63.2	658.7	308.3	269.6	902.5	1,324.2	70.6	48.4	4.4	0.0	3,723.2	1,136.7	297.9	1,434.5	5,157.8
2014	86.4	16.5	523.5	172.0	131.8	804.5	501.9	26.2	12.6	0.0	0.0	2,275.5	1,627.0	131.2	1,758.2	4,033.7
2015	14.4	10.0	485.3	67.0	140.8	406.8	600.3	41.9	3.5	0.0	0.0	1,770.1	1,108.0	207.7	1,315.7	3,085.7
2016	14.2	17.6	230.1	128.4	63.3	697.7	659.6	5.9	0.5	0.0	0.0	1,817.2	1,545.1	138.1	1,683.2	3,500.4
2017	22.0	37.7	392.3	59.8	94.9	477.3	626.4	27.8	0.0	0.1	0.0	1,738.3	1,091.6	108.0	1,199.6	2,937.9
2018	16.0	13.4	389.5	39.2	85.5	181.7	465.3	4.2	0.0	0.0	0.0	1,194.6	993.3	56.8	1,050.1	2,244.8
2019	38.0	14.7	195.6	104.1	67.1	498.0	412.9	10.9	1.0	0.0	0.0	1,342.2	764.1	44.6	808.7	2,150.9
2020	19.0	3.2	67.2	36.9	71.2	203.7	520.1	1.6	0.0	0.0	0.0	922.9	734.8	52.2	787.0	1,710.0

10.0 FIGURES

Note: Figures 1-5 are in-text.

Figure 6. Atlantic striped bass female spawning stock biomass and recruitment, 1982-2017. Source: 2018 Benchmark Stock Assessment.

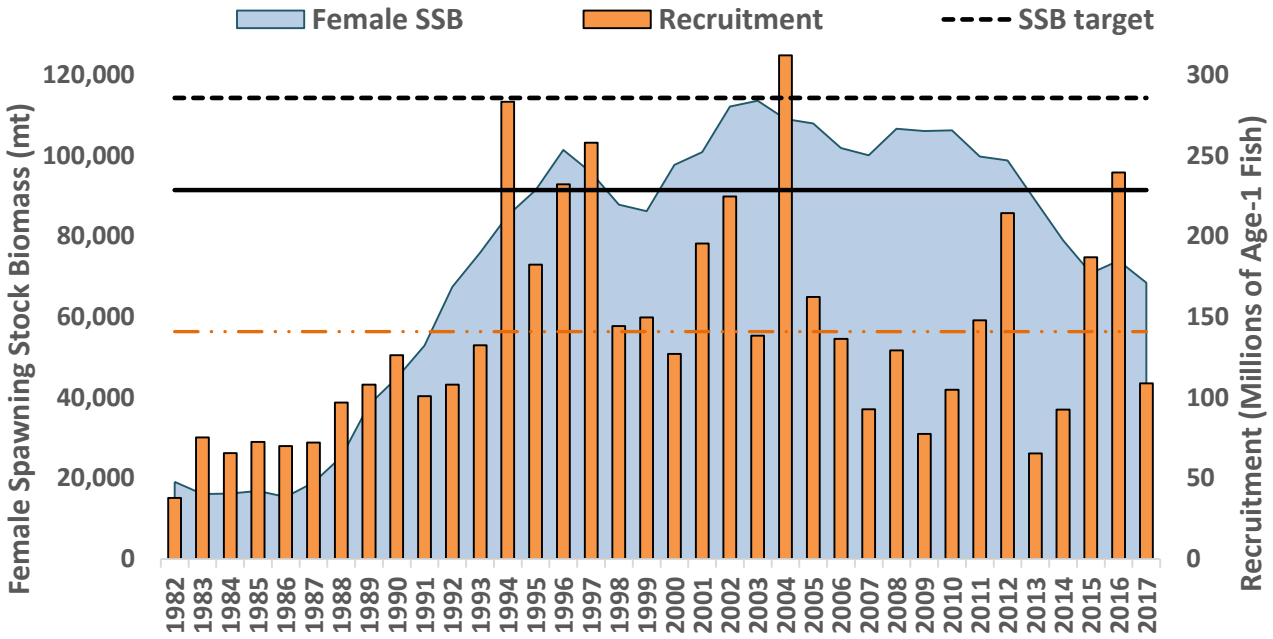


Figure 7. Atlantic striped bass fishing mortality, 1982-2017. Source: 2018 Benchmark Stock Assessment.

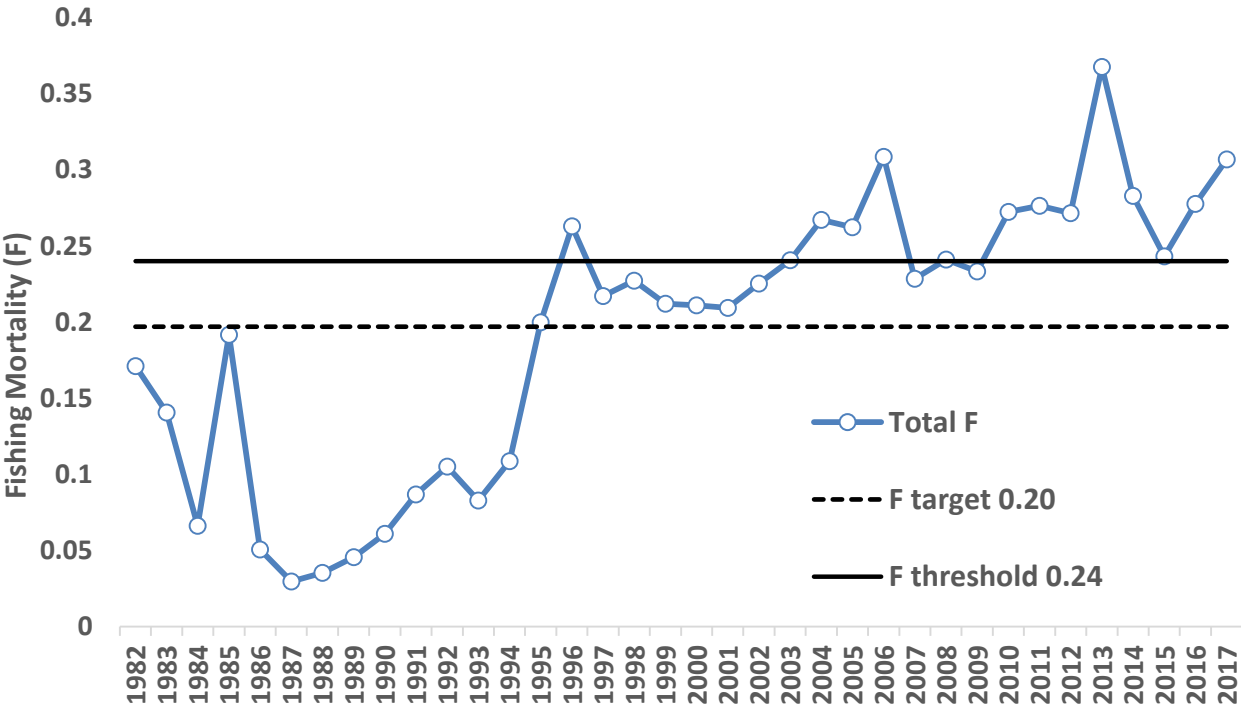


Figure 8. Albemarle Sound-Roanoke River striped bass female spawning stock biomass and recruitment (abundance of age-1), and biological reference points, 1991-2017. Source: 2020 Albemarle Sound-Roanoke River Stock Assessment (Lee et al. 2020).

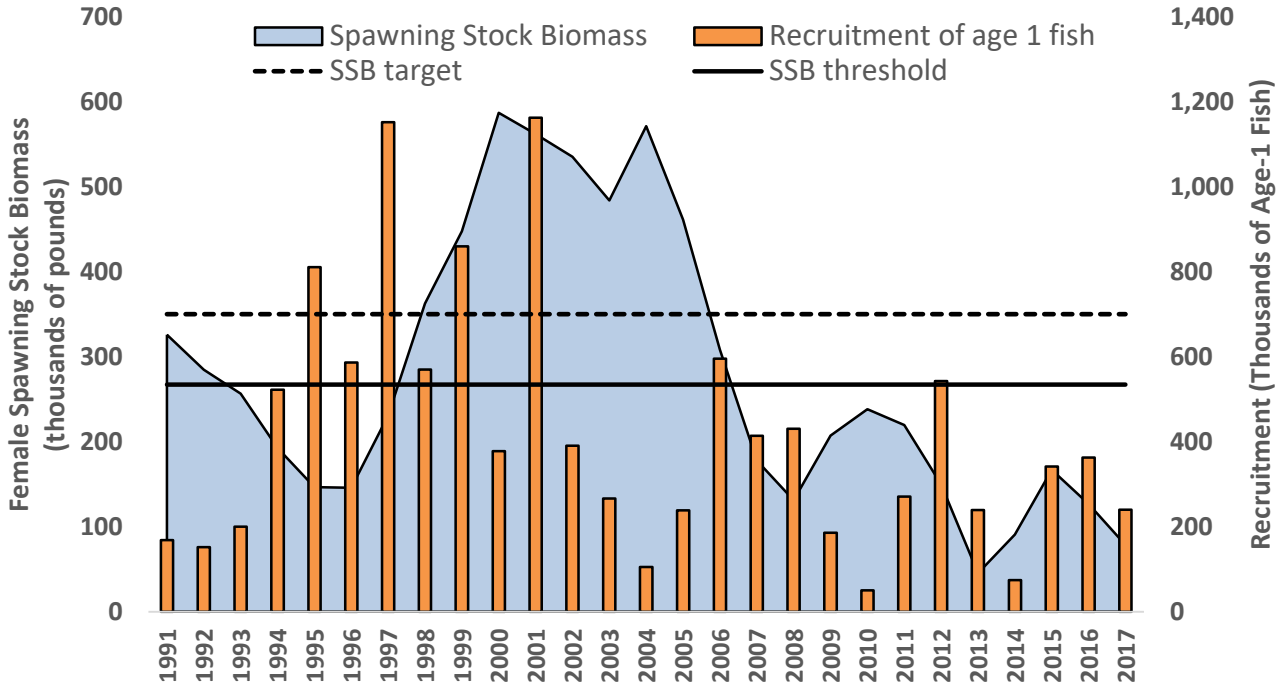


Figure 9. Albemarle Sounds-Roanoke River striped bass fishing mortality (F) estimates, and biological reference points, 1991-2017. Source: 2020 Albemarle Sound-Roanoke River Stock Assessment (Lee et al. 2020).

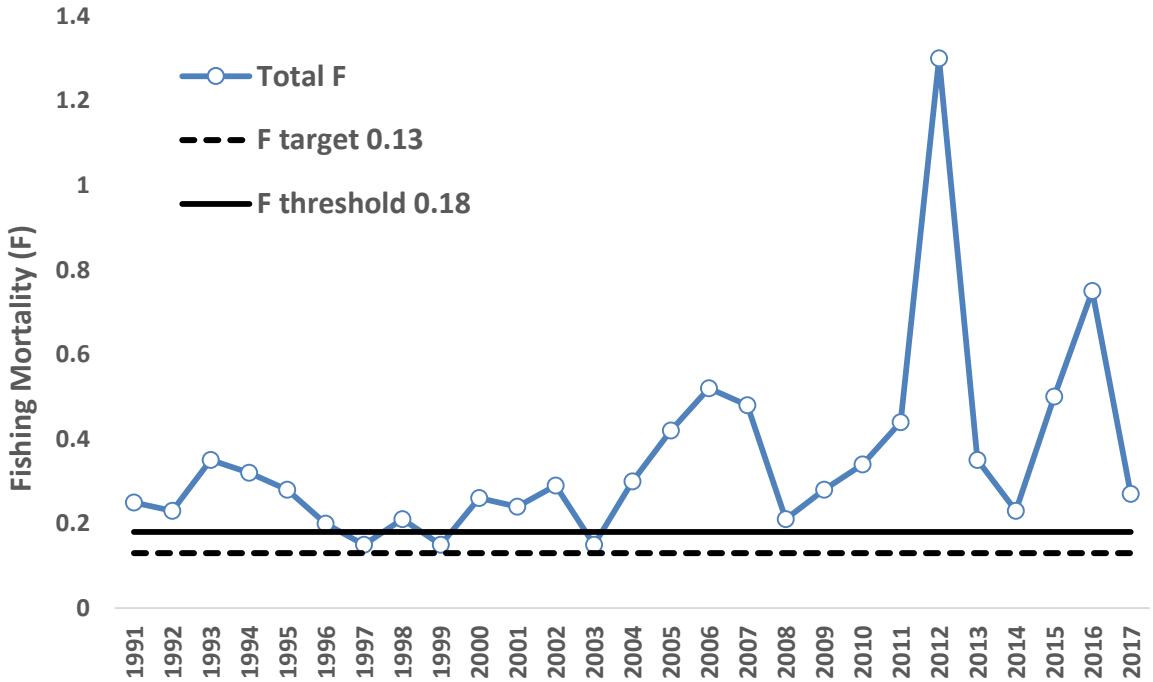


Figure 10. Total Atlantic striped bass removals by sector in numbers of fish, 1982-2020. Note: Harvest is from state compliance reports/MRIP, discards/release mortality is from ASMFC. Estimates exclude inshore harvest from Albemarle Sound-Roanoke River.

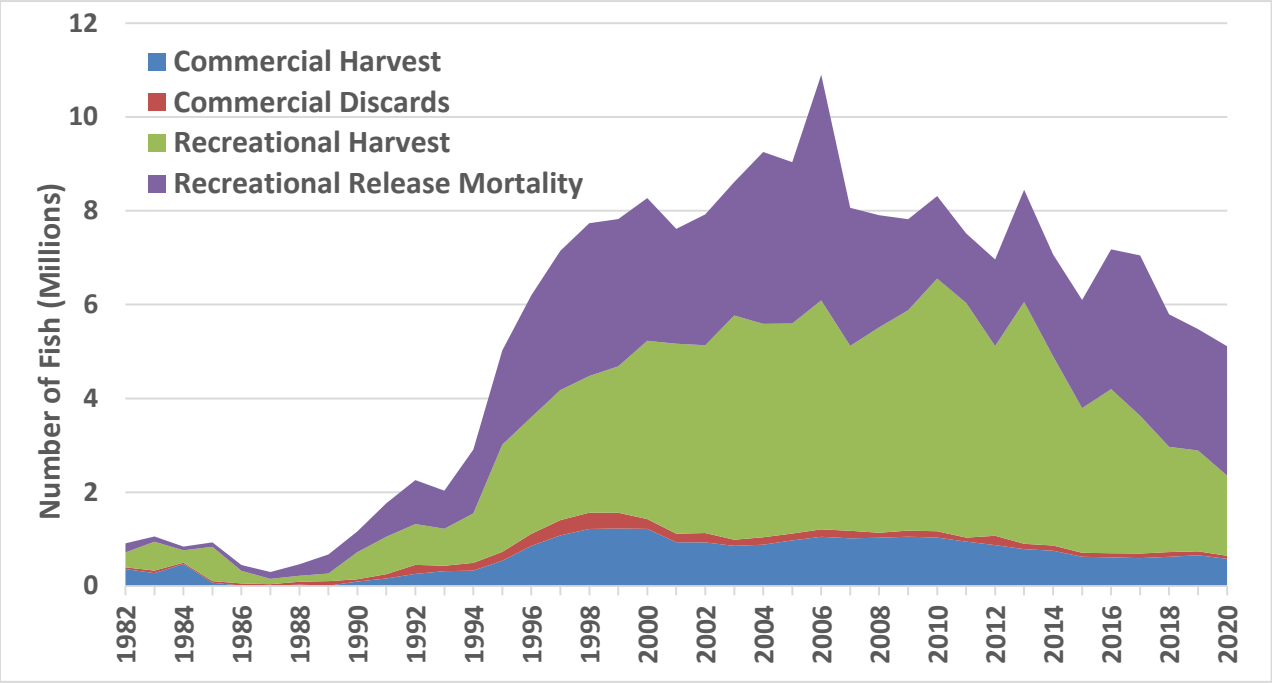


Figure 11. Commercial Atlantic striped bass landings by state in pounds, 1990-2020. Source: State compliance reports. Commercial harvest and sale prohibited in ME, NH, CT, and NJ. NC is ocean only.

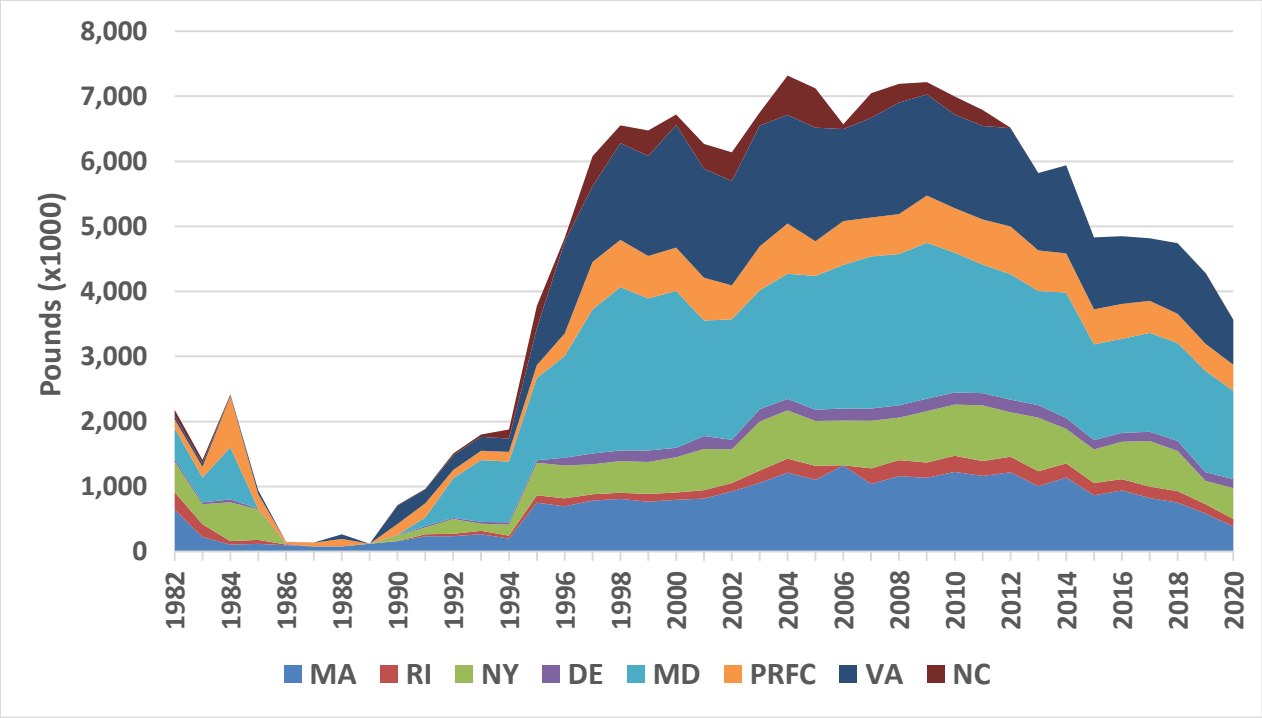
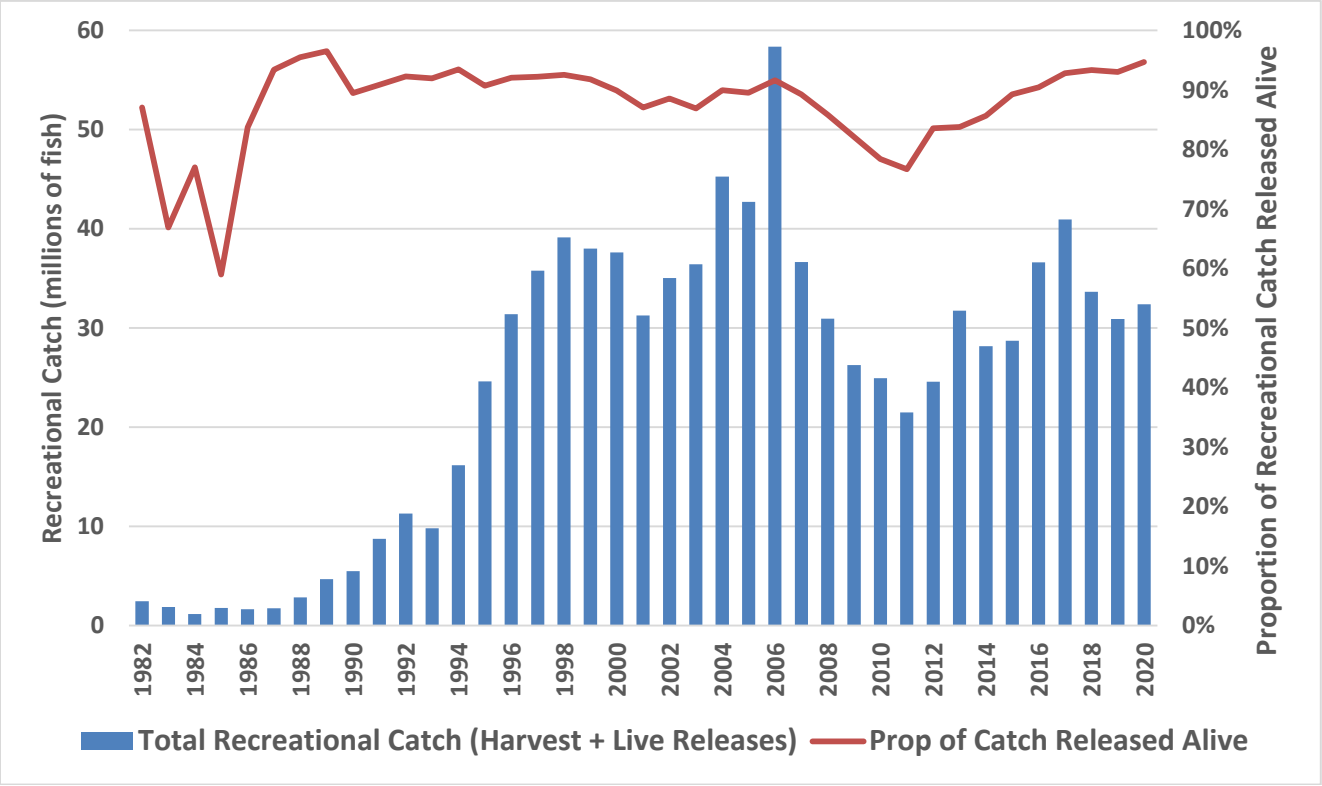


Figure 12. Total recreational catch and the proportion of fish released alive, 1982-2020. Source: MRIP/ASMFC. Estimates exclude inshore harvest from Albemarle Sound-Roanoke River.



APPENDIX 1: SUMMARY OF FISHERY DEPENDENT AND INDEPENDENT MONITORING PROGRAMS

Table A-1. Summary of juvenile abundance index surveys including the state/agency responsible for conducting each survey.

RESPONSIBLE STATE AND AGENCY	SAMPLING AREAS
Maine: *Department of Natural Resources*	Kennebec River
New York: *Department of Environmental Conservation*	Hudson River
New Jersey: *Department of Environmental Protection*	Delaware River
Maryland: *Department of Natural Resources*	Chesapeake Bay Tributaries
Virginia: *Marine Resources Commission*	Chesapeake Bay Tributaries
North Carolina: *Division of Marine Fisheries*	Albemarle Sound

Table A-2. Summary of spawning stock biomass surveys including the state/agency responsible for conducting each survey.

RESPONSIBLE STATE AND AGENCY	SAMPLING AREAS
New York: *Department of Environmental Conservation*	Hudson River[1]
Pennsylvania: *Fish and Boat Commission*	Delaware River[2]
Delaware: *Division of Fish and Wildlife*	Delaware River[3]
Maryland: *Department of Natural Resources*	Upper Chesapeake Bay[4] Potomac River[5]
Virginia: *Marine Resources Commission*	Rappahannock River[6] James River[7]
North Carolina: *Division of Marine Fisheries*	Roanoke River[8] Albemarle Sound[9]

[1] Hudson River, West Point to Catskill
[2] Delaware River, State line to the Tacony-Palmyra Bridge
[3] Delaware River, Delaware Memorial Bridge to state line
[4] Upper Chesapeake Bay, Worton Point to Elkton
[5] Potomac River, Maryland Point to White Stone Point
[6] Rappahanock River, Tappahannock to Federicksburg
[7] James River, Dancing Point to Tax Point
[8] Roanoke River, upriver to spawning grounds
[9] Albemarle Sound, Western sound approaches to river

Table A-3. Required Fishery-Dependent Monitoring Programs under Amendment 7

STUDY CATEGORY	NEEDS & GENERAL GUIDELINES	RESPONSIBLE STATE/ AGENCIES
Commercial catch composition	**NEED:** Define structure of exploitation, calculation of mortality rates **GUIDELINES:** Samples should be representative of location and seasonal distribution of catch, and should include size and sex composition. Collection of scales is conditional; if scale:age relationships from previous years are validated, indirect methods may be used.	MA, RI, NY, DE, MD, VA, PRFC, NC
Commercial catch and effort	**NEED:** Track mortality in a general way **GUIDELINES:** Surveys should produce reliable measures of catch (numbers and weight) and effort in gear days fished.	MA, NY, DE, MD, VA, PRFC
Recreational catch composition	**NEED:** Define structure of exploitation, calculation of mortality rates **GUIDELINES:** Samples should be representative of location, seasonal distribution, and age and size frequency (including sublegals).	MA, RI, CT, NY, NJ, MD, VA, PRFC
Recreational catch and effort	**NEED:** Track mortality in a general way **GUIDELINES:** States should report data from the Marine Recreational Information Program (MRIP) (refer to Section 3.4). States may supplement MRIP with specialized striped bass surveys to better assess harvest.	NMFS, MA, RI, CT, NY, NJ, MD, VA, PRFC

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **Atlantic Striped Bass Management Board**

FROM: **Emilie Franke, FMP Coordinator**

DATE: **April 18, 2022**

SUBJECT: **Draft Amendment 7 Public Hearing Summaries**

Twelve public hearings were held for eleven jurisdictions from March 8 through March 29, 2022 for Striped Bass Draft Amendment 7. Eight hearings were conducted via webinar only: Maine, Massachusetts, Rhode Island, Connecticut, New Jersey-Pennsylvania, Delaware, Maryland, Virginia. Three public hearings were conducted in-person: New York (Kings Park), New York (New Paltz), Potomac River Fisheries Commission-District of Columbia. One hearing was conducted in a hybrid format with attendees participating via webinar and in-person: New Hampshire.

493 individuals (not including state staff, ASMFC staff, or Commissioners/Proxies) attended the hearings, and some of these individuals attended and provided comments at multiple hearings. Each public hearing is summarized in the following pages and the summaries are ordered from north to south. Live polls or a show-of-hands vote were used at most hearings for some of the proposed options; the summaries indicate when a poll or vote was used. Each hearing summary lists the number of public participants who attended the hearing (not including state staff, ASMFC staff, or Commissioners/Proxies) as well as the number of people who provided comments and/or participated in polls during the hearing. Full attendance lists for each hearing are provided following the hearing summaries.

Note: A summary of all public comment (written and hearing comments) received by ASMFC on Striped Bass Draft Amendment 7 will be available no later than supplemental materials for the 2022 Spring Meeting.

Maine Public Hearing
Striped Bass Draft Amendment 7
March 23, 2022 – Webinar

Public Attendees: 68
Hearing Officers: Megan Ware (ME DMR)
ASMFC Staff: Emilie Franke, Toni Kerns, Maya Drzewicki

ME Management Board/Proxies in attendance:
Megan Ware, Pat Keliher

Polls/Commenters:	
ME	44
NH	3
NY	6
DE	1

54 attendees provided comments/participated in virtual polls, including comments on behalf of the New England Chapter of Backcountry Hunters and Anglers (NEBHA)

Management Triggers

- General comments on the need for conservative, aggressive triggers that require action immediately, proactively with no delay

Tier 1: F Triggers

- 38 people (poll) support reducing F to the target within 1 year (A1), including NEBHA, with comments supporting responsive management triggers instead of extended deadlines for stability
- 5 (poll) supports reducing F to the target within 2 years (A2)
- 26 people support status quo F triggers (B1 and C1), including NEBHA

Tier 2: SSB Triggers

- 24 people support a 2-year deadline to implement a rebuilding plan (A2), including NEBHA, with comments supporting matching the rebuilding timeline required for federally managed species
- 26 people support status quo SSB threshold trigger (B1), including NEBHA
- 22 people supports status quo SSB target trigger (C1)
- 4 people support decoupling SSB from F for the SSB target trigger (C2), including NEBHA

Tier 3: Recruitment Trigger

- 7 people support moderate sensitivity trigger (A2), including NEBHA, with comments on the importance of protecting remaining young fish and not missing opportunities to protect year classes like the 2015s and 2017s
- 7 people support the most conservative recruitment trigger response (B2), including NEBHA, with comments on not having a margin for error considering climate change and spawning success

Tier 4: Deferred Management Action

- 32 people (poll) support status quo no deferred management action (A), including NEBHA, with comments on taking action as quickly as possible
- 4 people (poll) support deferring if it's been less than three years since the last action;
- 4 person supports deferring if SSB meets criteria (C,D,E);
- 5 person (poll) supports deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

Seasonal Closures

- 6 people (poll) support statewide no-targeting closures for 2 weeks (B1) with comments noting support if closures occur during warmest weeks
- 31 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 21 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b)
- 16 people, including NEBHA, noted opposition to no-targeting closure options, particularly B1, due to lack of data to quantify the benefit of closures, enforcement concerns, and that Maine has favorable water conditions for survival (does not have the same warm water concerns as other states)
- 1 person noted concern that these closures do not apply to commercial fishing

Gear Restrictions

- 45 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1), including NEBHA
- 37 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2), including NEBHA
- 1 person supports limiting to just single hooks

Outreach/Education

- 4 people noted support for required outreach (D1) with comments noting the disconnect between the public's understanding and what is happening on the water
- 5 people, including NEBHA, noted support for recommended outreach (D2) with comments of not wanting to interfere with agency resources by implementing required outreach

Rebuilding Plan

- 9 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 30 people (poll) support the low recruitment assumption (B) for the 2022 assessment, including NEBHA, with comments supporting a conservative approach
- 6 people (poll) support the status quo addendum process (A)
- 31 people (poll) support the faster Board action process (B), including NEBHA, with comments that public comment should still be part of and considered in this faster process

Conservation Equivalency

- General comments that CE has been misused as a loophole to harvest more fish and there should be restrictions on the use of CE, as well as penalties to remain accountable
- 2 people (poll) supports status quo Board discretion on CE (A)
- 25 people (poll) support stock status CE restrictions (B)
    - 18 people noted support for B1-a: no CE if the stock is overfished, including NEBHA, with comments on rebuilding being prioritized over regional needs and CE being abused in the past
    - 5 noted support for B1-c: no CE if overfishing is occurring
- 14 people (poll) support MRIP PSE standards (C) for CE proposals
    - 8 people noted support for C3: 30 PSE limit, including NEBHA, with comments this is the accepted standard
- 18 people (poll) support CE uncertainty buffers (D)
    - 8 people noted support for D2: 25% buffer, including NEBHA
- 16 people (poll) support defining equivalency (E) for CE proposals
    - 8 people noted support for E2: equivalency to state-specific projection, including NEBHA

General Comments:

- Maine is at the top of the US range and so sees declines more dramatically than other states
- Desire to rebuild as quickly as possible and maintain abundance Public is frustrated at the slow speed of Commission process
- 1 person noted support for catch and release only until the stock rebounds
- Concern regarding climate change and habitat degradation

Attendance

- *Attendee list attached separately*
- *Additional ME state staff: Victoria Batter, Jeff Nichols*

New Hampshire Public Hearing
Striped Bass Draft Amendment 7
March 29, 2022 – Hybrid (Portsmouth, NH and Webinar)

Public Attendees: 29
Hearing Officers: Cheri Patterson (NHFG)
ASMFC Staff: Emilie Franke, Savannah Lewis

NH Management Board/Proxies in attendance:
Cheri Patterson, Ritchie White, Renee Zobel

23 attendees provided comments/participated in virtual polls, including comments on behalf of the New England Chapter of Backcountry Hunters and Anglers (NEBHA)

Polls/Commenters:	
NH	15
ME	2
MA	2
NY	2
NJ	1
MD	1

Management Triggers

- General comments on the need for the most aggressive, conservative triggers to rebuild the stock and limiting flexibility

Tier 1: F Triggers

- 17 people (poll) support reducing F to the target within 1 year (A1), including NEBHA
- 2 (poll) supports reducing F to the target within 2 years (A2)
- 8 people support status quo F threshold trigger (B1) and 6 people support the status quo F target trigger (C1), including NEBHA

Tier 2: SSB Triggers

- 8 people support a 2-year deadline to implement a rebuilding plan (A2), including NEBHA
- 8 people support status quo SSB threshold trigger (B1), including NEBHA
- 6 people support decoupling SSB from F for the SSB target trigger (C2), including NEBHA

Tier 3: Recruitment Trigger

- 6 people support moderate sensitivity trigger (A2), including NEBHA, with comments on the importance of improving this trigger
- 8 people support the most conservative recruitment trigger response (B2), including NEBHA

Tier 4: Deferred Management Action

- 12 people (poll) support status quo no deferred management action (A), including NEBHA
- 1 people (poll) support deferring if it's been less than three years since the last action;
- 4 people (poll) support deferring if SSB meets criteria (C,D,E);
- 2 person (poll) support deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

Seasonal Closures

- 4 people (poll) support statewide no-targeting closures for 2 weeks (B1)
- 5 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 5 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b)
- 4 people, including NEBHA, noted concerns about no-targeting closure options, particularly B1, due to lack of data to quantify the benefit of closures, enforcement concerns, and that New Hampshire and Maine have favorable water conditions for survival (does not have the same warm water concerns as other states)

Gear Restrictions

- 17 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1), including NEBHA
- 13 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2), including NEBHA

Outreach/Education

- 2 people, including NEBHA, noted support for recommended outreach (D2) with comments of not wanting to interfere with agency resources by implementing required outreach

Rebuilding Plan

- 1 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 17 people (poll) support the low recruitment assumption (B) for the 2022 assessment, including NEBHA
- 3 people (poll) support the status quo addendum process (A)
- 13 people (poll) support the faster Board action process (B), including NEBHA, with comments that the addendum process is too slow and the Board should take action to get things done quickly

Conservation Equivalency

- 1 (poll) supports status quo Board discretion on CE (A)
- 10 people (poll) support stock status CE restrictions (B)
    - 2 people noted support for B1-a: no CE if the stock is overfished, including NEBHA, with comments on rebuilding should take priority over flexibility
- 7 people (poll) support MRIP PSE standards (C) for CE proposals
    - 2 people noted support for C3: 30 PSE limit, including NEBHA
- 7 people (poll) support CE uncertainty buffers (D)
    - 2 people noted support for D2: 25% buffer, including NEBHA
- 7 people (poll) support defining equivalency (E) for CE proposals
    - 2 people noted support for E2: equivalency to state-specific projection, including NEBHA

General Comments:

- Support for acting urgently to improve the stock and maintain abundance in the future after years of past mismanagement, and managing for the best interest of the species
- Concern the Board is not looking at the impact of the commercial sector, including concern about commercial nets
- 2 people noted support for making striped bass a gamefish
- 1 person noted the recruitment metric used for striped bass is not an accurate method
- 1 person noted concern about lack of monitoring for standard unit per effort for the Maryland trophy fishery (and not accounting for the trophy fishery catching pre-spawn females with eggs) and concern about striped bass mortality in pound nets
- 1 person noted the need to focus on bait fish

Attendance

- *Attendee list (webinar) and sign-in sheet (in-person) attached separately*
- *Additional ME state staff: Kevin Sullivan, Rebecca Heuss*

Massachusetts Public Hearing
Striped Bass Draft Amendment 7
March 21, 2022 – Webinar

Public Attendees: 91
Hearing Officers: Mike Armstrong (MA DMF)
ASMFC Staff: Emilie Franke, Toni Kerns

MA Management Board/Proxies in attendance:
Mike Armstrong, Ray Kane, Dan McKiernan

Polls/Commenters:	
MA	48
ME	2
NH	4
RI	1
CT	2
NY	1
MD	3
DC	1

62 attendees provided comments/participated in virtual polls, including comments on behalf of the Cape Cod Charter Boat Association (CCCBA), New England Chapter of Backcountry Hunters and Anglers (NEBHA)

Management Triggers

- General comment to maintain status quo triggers and to not put management before the science; management should react to the science

Tier 1: F Triggers

- 34 people (poll) support reducing F to the target within 1 year (A1)
- 10 (poll) supports reducing F to the target within 2 years (A2)
- 5 people support status quo F triggers (B1 and C1)

Tier 2: SSB Triggers

- 1 people support a 2-year deadline to implement a rebuilding plan (A2)
- 5 people support status quo SSB triggers (B1 and C1)

Tier 3: Recruitment Trigger

- 4 people support moderate sensitivity trigger (A2), including NEBHA, with a comment noting the importance of protecting year classes like the 2015s and 2017s before it's too late
- 4 people support the most conservative recruitment trigger response (B2), including NEBHA

Tier 4: Deferred Management Action

- 29 people (poll) support status quo no deferred management action (A)
- 6 people (poll) support deferring if it's been less than three years since the last action;
- 5 people supports deferring if SSB meets criteria (C,D,E);
- 5 people (poll) support deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

- Several people noted concern that these measures are not being considered for the commercial sector, and these types of restrictions should be implemented across all sectors support the stock

Seasonal Closures

- 8 people (poll) support statewide no-targeting closures for 2 weeks (B1)
- 29 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 26 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b)
- Several people, including CCCBA and NEBHA, noted opposition to B1 statewide no-targeting closure options due to lack of data to quantify the benefit of closures, enforcement concerns, and negative economic impacts to businesses
- CCCBA noted spawning closures are more palatable because it's only in particular areas and there is a specific reason to communicate to customers about the closures

Gear Restrictions

- 42 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1)
- 35 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2)

Outreach/Education

- 4 people noted support for required outreach (D1) and the importance of outreach and education efforts
- 4 people, including NEBHA, noted support for recommended outreach (D2) with comments of not wanting to interfere with agency resources by implementing required outreach

Rebuilding Plan

- 8 people support the low recruitment assumption (B) for the 2022 assessment, including NEBHA
- 3 people support the status quo addendum process (A) with comments that the public comment process should not be eliminated and a new process should not be created before we know the assessment results
- 6 people support the faster Board action process (B), including NEBHA, with comments that the Board should act quickly if there is a need to respond

Conservation Equivalency

- General comments that CE has been misused to game the system and has been a loophole for special interest groups, and so the use of CE should be restricted
- 4 people support status quo Board discretion on CE (A) with comments that states should not be too restricted and the status quo approval process by the Board is sufficient

- 7 people support stock status CE restrictions (B)
    - 4 people, including NEBHA, noted support for B1-a: no CE if the stock is overfished
- 4 people support MRIP PSE standards (C) for CE proposals
    - 1 person noted support for C3: 30 PSE limit
- 4 people support CE uncertainty buffers (D)
    - 1 person noted support for D2: 25% buffer
- 7 people support defining equivalency (E) for CE proposals
    - 4 people, including NEBHA, noted support for E2: equivalency to state-specific projection

General Comments:

- Concern about the accuracy of MRIP data and if the data are flawed, how can one sector be targeted for restrictions
- Questions and concerns about the 9% recreational release mortality estimate being used in the stock assessment
- The complexity of the draft amendment makes providing public comment difficult and has dissuaded public engagement; the Board has no consensus on how they want management to look
- Management cannot come before the data; we don't know the assessment results yet and the impact of the 18% reduction
- Enforcement is difficult with so many people in the fishery
- Concern about climate change impact on mortality and environmental conditions contributing to spawning success, including bait availability and pollution (for example, the use of agricultural pesticides in the Chesapeake Bay and impact on striped bass recruitment and egg development
- Manage for abundance
- Need for management and industry workshops to get input from industry and get a better sense of the direction management is going

Attendance

- *Attendee list attached separately*
- *Additional ME state staff: Nichola Meserve, Gary Nelson, Matt Ayer, James Cullen, Bill Hoffman, Kristen Thiebault, Patrick Moran*

Rhode Island Public Hearing
Striped Bass Draft Amendment 7
March 15, 2022 – Webinar

Public Attendees: 31
Hearing Officers: Jason McNamee (RI DEM)
ASMFC Staff: Emilie Franke, Toni Kerns, Maya Drzewicki

RI Management Board/Proxies in attendance:
Jason McNamee

Polls/Commenters:	
RI	11
ME	3
NH	1
MA	4
CT	1
NY	2
NJ	1
MD	1
VA	1

25 attendees provided comments/participated in virtual polls, including comments on behalf of the Rhode Island Party and Charter Boat Association (RIPCBA), Rhode Island Saltwater Anglers Association (RISAA), Connecticut Catch and Release Fly Fishing Facebook Group (CTCR), New England Chapter of Backcountry Hunters and Anglers (NEBHA)

Management Triggers

- General comments on the need for conservative approaches and low-risk approaches

Tier 1: F Triggers

- 14 people (poll) support reducing F to the target within 1 year (A1), including RISAA and NEBHA, with a comment supporting responsive management triggers instead of extended deadlines for stability
- 1 RIPCBA (poll) supports reducing F to the target within 2 years (A2)
- 4 people support status quo F triggers (B1 and C1), including RISAA and NEBHA
- 1 RIPCBA supports a 2-year average for the F threshold trigger (B2) and no trigger for F target (C3)

Tier 2: SSB Triggers

- 5 people support a 2-year deadline to implement a rebuilding plan (A2), including RIPCBA, RISAA and NEBHA
- 5 people support status quo SSB threshold trigger (B1), including RIPCBA and RISAA
- 3 people supports status quo SSB target trigger (C1), including RISAA and NEBHA
- 1 RIPCBA supports no trigger for SSB target (C3)

Tier 3: Recruitment Trigger

- 4 people support moderate sensitivity trigger (A2), including RISAA and NEBHA, with comments on the importance of protecting remaining young fish and not missing opportunities to protect year classes like the 2015s and 2017s
- 1 RIPCBA supports the status quo flexible recruitment trigger response (B1)

- 4 people support the most conservative recruitment trigger response (B2), including NEBHA and RISAA

Tier 4: Deferred Management Action

- 13 people (poll) support status quo no deferred management action (A), including RISAA NEBHA, with comment that deferred management action is a hallmark of ineffective management
- 2 people (poll), including RIPCBA, support deferring if it's been less than three years since the last action (B);
- 1 person supports deferring if SSB meets criteria (C,D,E);
- 1 person (poll) supports deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

Seasonal Closures

- 2 people (poll) support statewide no-targeting closures for 2 weeks (B1) with comments noting how much recreational release mortality contributes to overall mortality and the need to do the fair share to recover the stock
- 5 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 4 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b) with comments that fish should be allowed to spawn successfully in order to rebuild
- 5 people, including NEBHA, noted opposition to closure options, particularly B1, due to lack of data to quantify the benefit of closures, uncertainty of when closures would take place in different states, and the negative impacts to tourism and visitors traveling to RI for fishing

Gear Restrictions

- 17 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1), including RISAA and NEBHA
- 1 RIPCBA opposes C1 due to a hope of returning to a different set of size restrictions in the future that would allow larger fish to be harvested
- 12 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2), including RISAA and NEBHA

Outreach/Education

- 4 people noted support for required outreach (D1), including RIPCBA and CTCR, with comments noting the general public does not know how to properly handle striped bass
- 3 people, including NEBHA, noted support for recommended outreach (D2) due to not wanting to interfere with agency resources by implementing required outreach

Rebuilding Plan

- 3 people (poll) support the standard recruitment method (A) for the 2022 assessment

- 16 people (poll) support the low recruitment assumption (B) for the 2022 assessment, including RISAA, CTCR, and NEBHA
- 1 RIPCBA (poll) support the status quo addendum process (A)
- 17 people (poll) support the faster Board action process (B), including RISAA, CTCR, and NEBHA, with comments the Board should act as quickly as possible and focus on rebuilding as the priority

Conservation Equivalency

- 1 RIPCBA (poll) supports status quo Board discretion on CE (A) because the Board should have as much flexibility as possible
- 14 people (poll) support stock status CE restrictions (B)
    - 5 people noted support for B1-a: no CE if the stock is overfished, including RISAA, CTCR, and NEBHA, with comments on rebuilding being prioritized over regional needs and CE being abused in the past
    - 2 noted support for B1-c: no CE if overfishing is occurring
    - 1 person noted support for B2-a: stock status restrictions should apply to Hudson River, Delaware Bay/River fisheries
- 6 people (poll) support MRIP PSE standards (C) for CE proposals
    - 5 people noted support for C3: 30 PSE limit, including RISAA, CTCR, and NEBHA, with comments this is the accepted standard
    - RIPCBA is opposed to option C because MRIP already will not be publishing data with PSE above 50
- 8 people (poll) support CE uncertainty buffers (D)
    - 1 RISAA noted support for D1: 10% buffer
    - 4 people noted support for D2: 25% buffer, including CTCR
    - NEBHA noted support for D2 as long as B stock status restrictions are selected; if stock status restrictions are not selected, they would support a larger buffer D3
- 6 people (poll) support defining equivalency (E) for CE proposals
    - 2 people noted support for E2: equivalency to state-specific projection, including NEBHA

General Comments:

- Complexity of the document limits comments from the public and the importance of organizations in submitting comments on behalf of members
- Disturbing trend of managing for abundance and how that does not align with ecosystem management; also notes concern about declining trend of harvested fish and increased release mortality when striped bass is a valuable source of food; disappointed there are no measures considered to protect age-8 and age-9 fish that are spawning

- Desire to see greater spawning stock in the future and stronger triggers so overfishing does not happen again with a recovered stock as soon as possible and abundance for the future
- Support managing for abundance
- Management should consider changing the slot based on various year classes, especially with the 2017 year class entering the slot soon; should not repeat the loss of the 2011 year class due to CE
- What drives the fishery is having more fish in the water for everyone to use (catch, eat, release) and recreational anglers want the opportunity to catch fish
- There are a lot of people targeting striped bass and accountability for recreational fishermen is critical to address these issues
- Concern about accuracy of MRIP data
- Limit the number of fish that can be caught per day
- All user groups should have equal access and decisions should not be rushed that could negatively impact users

Attendance

- *Attendee list attached separately*
- *Additional RI state staff: Nicole Lengyel Costa, Kurt Blanchard, John Lake*

Connecticut Public Hearing
Striped Bass Draft Amendment 7
March 22, 2022 – Webinar

Public Attendees: 39
Hearing Officers: Justin Davis (CTDEEP)
ASMFC Staff: Emilie Franke, Toni Kerns

CT Management Board/Proxies in attendance:
Justin Davis, Bill Hyatt, Sen. Craig Miner

Polls/Commenters:	
CT	22
ME	2
MA	1
NY	3
MD	1

29 attendees provided comments/participated in virtual polls, including comments on behalf of the New England Chapter of Backcountry Hunters and Anglers (NEBHA)

Management Triggers

- General comments on the need for conservative approaches and low-risk approaches

Tier 1: F Triggers

- 16 people (poll) support reducing F to the target within 1 year (A1), including NEBHA, with comments on past Board failure to take reductions in a timely manner and the need for timely action
- 1 person (poll) supports reducing F to the target within 2 years (A2)
- 3 people support status quo F triggers (B1 and C1), including NEBHA

Tier 2: SSB Triggers

- 3 people support a 2-year deadline to implement a rebuilding plan (A2), including NEBHA
- 2 people support status quo SSB threshold trigger (B1)
- 1 person supports status quo SSB target trigger (C1)
- 1 person supports decoupling SSB from F for the SSB target trigger (C2) to address downward trends before overfished status is reached

Tier 3: Recruitment Trigger

- 2 people support moderate sensitivity trigger (A2), including NEBHA, with comments on the importance of protecting remaining young fish and not missing opportunities to protect year classes; missed opportunity to protect the 2015 year class
- 1 person supports high sensitivity trigger (A3)
- 3 people support the most conservative management response (B2), including NEBHA

Tier 4: Deferred Management Action

- 12 people (poll) support status quo no deferred management action (A), including NEBHA, with comment that deferred management action is a hallmark of ineffective management
- 1 person (poll) supports deferring if SSB meets criteria (C,D,E)
- 4 people (poll) support deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

Seasonal Closures

- 3 people (poll) support statewide no-targeting closures for 2 weeks (B1)
- 12 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 14 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b) with comments that fish should be allowed to spawn successfully in order to rebuild
- NEBHA noted opposition to all closure options due to lack of data to quantify the benefit of closures and difficulty to enforce
- 1 person noted concern about release mortality in the winter Housatonic River fishery and would support a closure for that fishery in the winter

Gear Restrictions

- 20 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1), including NEBHA
- 14 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2), including NEBHA

Outreach/Education

- NEBHA noted support for recommended outreach (D2) due to not wanting to interfere with agency resources by implementing required outreach

Rebuilding Plan

- 3 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 18 people (poll) support the low recruitment assumption (B) for the 2022 assessment, including NEBHA, with comments on the low YOY data and the need to be risk-averse
- 3 people (poll) support the status quo addendum process (A)
- 19 people (poll) support the faster Board action process (B), including NEBHA, with comments the Board should act as quickly as possible to avoid worsening the situation and the Board has a past legacy of delaying action

Conservation Equivalency

- 3 people (poll) support status quo Board discretion on CE (A)
- 17 people (poll) support stock status CE restrictions (B)

    - 4 people noted support for B1-a: no CE if the stock is overfished, including NEBHA, with comments on rebuilding being prioritized over flexibility
- 12 people (poll) support MRIP PSE standards (C) for CE proposals
    - 4 people noted support for C3: 30 PSE limit, including NEBHA, with comments this is the accepted standard
- 12 people (poll) support CE uncertainty buffers (D)
    - 3 people noted support for D2: 25% buffer
    - 1 person noted support for D3: 50% buffer
    - NEBHA noted support for D2 as long as B stock status restrictions are selected; if stock status restrictions are not selected, they would support a larger buffer D3
- 12 people (poll) support defining equivalency (E) for CE proposals
    - 4 people noted support for E2: equivalency to state-specific projection, including NEBHA
- General comment on the increased risk, low predictability, and high uncertainty of CE

General Comments:

- Priority should be striped bass abundance recovering as soon as possible to previous abundance levels
- Managing striped bass for abundance benefits all stakeholders over the long term
- For-hire fleet wants to keep the measures at the current slot and keep everything status quo; we already exceeded the expectations of the percent reduction from the Addendum VI slot
- There needs to be an urgency to take action to rebuild as quickly as possible
- Need to address and account for the importance of menhaden in the Chesapeake Bay, especially during the spawning season, and co-manage menhaden and striped bass; concern about Omega Protein menhaden harvest

Attendance

- *Attendee list attached separately*
- *Additional CT state staff: David Molnar, Joshua Tefft, Todd Chemacki, Michael Humphreys*

New York (Kings Park) Public Hearing
Striped Bass Draft Amendment 7
March 16, 2022 – Kings Park, NY

Note: NY DEC livestreamed the public hearing with virtual attendees in listen-only mode.

Public Attendees: 36
Hearing Officers: Jim Gilmore (NYSDEC)
ASMFC Staff: Emilie Franke
NY state staff: John Maniscalco, Stephanie Rekemeyer, Jesse Hornstein, Maureen Davidson

NY Management Board/Proxies in attendance:
Jim Gilmore, John McMurray, Emerson Hasbrouck (virtual), Maureen Davidson

Polls/Commenters:	
NY	36

36 attendees provided comments/participated in show of hands, including comments on behalf of the NY Coalition for Recreational Fishing (NYCRF) and New York Chapter of Backcountry Hunters and Anglers (NYBHA)

Management Triggers

Tier 1: F Triggers

- 31 people (vote) support reducing F to the target within 1 year (A1), including NYCRF and NYBHA, with comments to not delay action
- 5 people (vote) support reducing F to the target within 2 years (A2)
- 6 people support status quo F threshold trigger (B1) and 5 people support the status quo F target trigger (C1)

Tier 2: SSB Triggers

- 4 people support a 2-year deadline to implement a rebuilding plan (A2)
- 6 people support status quo SSB threshold trigger (B1)
- 5 people supports status quo SSB target trigger (C1)

Tier 3: Recruitment Trigger

- 2 people support moderate sensitivity trigger (A2), including NYBHA
- 1 NYCRF supports the high sensitivity trigger (A3), including NYCRF
- 5 people support the most conservative recruitment trigger response (B2), including NYCRF and NYBHA

Tier 4: Deferred Management Action

- 28 people (vote) support status quo no deferred management action (A), including NYCRF and NYBHA, with comments to minimize delay and require prompt action
- 6 people (vote) support deferring if it's been less than three years since the last action;
- 6 people (vote) support deferring if SSB meets criteria (C,D,E);

- 6 people (vote) support deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

- General comments that these proposed measures weaponize release mortality and the source of fishing mortality does not matter; inappropriate to single out catch and release fisheries and reductions should occur across all sectors; the fishery is primarily recreational so some level of release mortality needs to be accepted
- Concern that the benefit of the proposed measures cannot be quantified

Seasonal Closures

- Some comments in opposition to seasonal closures, including NYCRF and NYBHA, due to enforcement concerns and concern about targeting the recreational sector

Gear Restrictions

- 3 people support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1)
- 3 people support requiring the release of incidentally caught striped bass on any unapproved method of take (C2)

Outreach/Education

- 2 people noted support for required outreach (D1)
- 1 person noted support for recommended outreach (D2)

Rebuilding Plan

- 3 people support the low recruitment assumption (B) for the 2022 assessment, including NYCRF and NYBHA
- 5 people support the faster Board action process (B), including NYCRF and NYBHA, with comments noting action to rebuild the stock as quickly as possible

Conservation Equivalency

- 3 people support stock status CE restrictions (B) with comments noting past failure of CE programs in other states
    - 3 people noted support for B1-a: no CE if the stock is overfished
    - 1 noted support for B1-c: no CE if overfishing is occurring
    - 1 person noted support for B2-b: stock status restrictions should apply to recreational bonus programs
- 2 people support MRIP PSE standards (C) for CE proposals
    - 2 people noted support for C3: 30 PSE limit
- 2 people support CE uncertainty buffers (D)
    - 4 people noted support for D2: 25% buffer, including CTCR
- 3 people support defining equivalency (E) for CE proposals
    - 3 people noted support for E2: equivalency to state-specific projection

General Comments:

- Concern about the quality of MRIP data and questions about the accuracy and appropriateness of the 9% recreational release mortality estimate
- Complexity of the document makes it difficult to provide public comment and public trust has been eroding
- Desire for broad age structure and increased abundance of all size classes
- Need more enforcement and budget to support increased enforcement presence
- Support for conservative approach to rebuild the stock as soon as possible with no delays and minimize risk
- Rebuild as soon as possible in less than 10 years so we can experience good fishing sooner
- 1 person noted declines in local waters and smaller fish, while another noted large numbers of striped bass, especially in the summer
- The charter industry has already taken reductions and cannot go any lower than 1 fish bag limit; the charter industry is not discarding and emphasizes the value in keeping the fish
- Environmental impacts, like pollution and sewage, should be accounted for

Attendance

- *Attendee sign-in sheet attached separately*

New York (New Paltz) Public Hearing
Striped Bass Draft Amendment 7
March 23, 2022 – New Paltz, NY

Note: NY DEC livestreamed the public hearing with virtual attendees in listen-only mode.

Public Attendees: 46
Hearing Officers: John Maniscalco (NYSDEC)
NY DEC Staff: Jessica Best, Gregg Kenney, Stephanie Mossey, Stephanie Rekemeyer, Wendy Rosenbach, ElizaBeth Streifeneder

NY Management Board/Proxies in attendance:
Virtual: James Gilmore (NYSDEC), Emerson Hasbrouck, John McMurray, Maureen Davidson (NYSDEC); In-person Jesse Hornstein (NYSDEC)

Polls/Commenters:	
NY	40

40 attendees provided comments/participated show of hands

Management Triggers
Tier 1: F Triggers

- 11 people (vote) support reducing F to the target within 1 year (A1)
- 22 (vote) supports reducing F to the target within 2 years (A2)

Tier 4: Deferred Management Action

- 2 people (vote) support status quo no deferred management action (A)
- 13 people (vote) support deferring if SSB meets criteria (C,D,E);
- 1 person (vote) supports deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality
Seasonal Closures

- No support (vote) for statewide no-targeting closures for 2 weeks (B1)
- 2 people (vote) support spawning area and/or spawning ground closures (B2-a/B2-b)
- General opposition to closures in the Hudson with comments noting the success of the current slot in recovering the stock, and the negative economic impacts of closing the season
- 1 person noted it would be impossible to determine closures based on water temperatures due to temperature variation throughout the day and by location

Gear Restrictions

- 39 people (vote) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1)

- 39 people (vote) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2)
- 1 person supports reducing the allowed rods per person and 1 person noted requiring barbless hooks and limiting the use of treble hooks as alternative approaches to seasonal closures

Outreach/Education

- 4 people noted support for required outreach (D1) with comments noting the importance of this strategy and a suggestion to develop materials like online videos

Rebuilding Plan

- 36 people (vote) support the standard recruitment method (A) for the 2022 assessment
- 3 people (vote) support the low recruitment assumption (B) for the 2022 assessment
- 37 people (vote) support the status quo addendum process (A)
- 3 people (vote) support the faster Board action process (B)

Conservation Equivalency

- 32 (vote) supports status quo Board discretion on CE (A)
- 1 person (vote) supports CE restrictions (B, C, D, E)

General Comments:

- 7 people commented in support of making striped bass a gamefish and eliminating commercial harvest
- Several comments in support of a universal 18-28" slot limit along the coast to protect the large spawning fish, which has been very successful in the Hudson
- Concern and questions about the accuracy of the 9% release mortality estimate, and support for new state-specific mortality studies
- Comments noted the issue with the stock is not in the Hudson, but there are problems in the ocean and in the Chesapeake Bay; fishing in the Hudson has been great and large fish are starting to come back
- There is a need for more enforcement and additional budget for officers
- Seeing positive results from the Hudson River cooperative angler program
- Need flexibility with certain measures given the differences between areas, like considering differences between the Hudson and the Chesapeake

Attendance

- *Attendee sign-in sheet attached separately*

New Jersey-Pennsylvania Public Hearing
Striped Bass Draft Amendment 7
March 14, 2022 – Webinar

Public Attendees: 88
Hearing Officers: Joe Cimino (NJDEP) and Kris Kuhn (PFBC)
ASMFC Staff: Emilie Franke, Toni Kerns, Savannah Lewis

NJ-PA Management Board/Proxies in attendance:
NJ – Joe Cimino, Tome Fote; PA – Kris Kuhn, Loren Lustig, Warren Elliott

78 attendees provided comments/participated in virtual polls, including comments on behalf of the Recreational Fishing Alliance (RFA)

Polls/Commenters:	
NJ	62
PA	7
ME	2
MA	1
NY	2
DE	2
MD	2

Management Triggers

- General comments on the need for conservative approaches and low-risk approaches
- RFA noted the importance of flexibility when responding to management triggers and that we should not be as reactive as some other fisheries

Tier 1: F Triggers

- 25 people (poll) support reducing F to the target within 1 year (A1)
- 18 people (poll) support reducing F to the target within 2 years (A2)

Tier 4: Deferred Management Action

- 31 people (poll) support status quo no deferred management action (A)
- 7 people (poll) support deferring if it's been less than three years since the last action (B);
- 9 people support deferring if SSB meets criteria (C,D,E);
- 8 people (poll) support deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

- Overall concern these types of restrictions are not being considered for the commercial sector

Seasonal Closures

- 6 people (poll) support statewide no-targeting closures for 2 weeks (B1) with comments noting how much recreational release mortality contributes to overall mortality and the need to do the fair share to recover the stock
- 25 people (poll) support no-harvest spawning area closures for January-April (B2-a) with comments noting increasing the value of the catch and release fishery and limiting harvest

- 19 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b) with comments that fish should be allowed to spawn successfully in order to rebuild
- Several people noted opposition to closure options, particularly B1, due to lack of data to quantify the benefit of closures, enforcement concerns, and the negative economic impacts of closing the season
- 1 person noted that a closure in Raritan Bay for two weeks would be beneficial to the stock

Gear Restrictions

- 55 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1)
- 30 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2)
- 1 person noted support for not allowing catch and release due to the high release mortality level; there would be a 1-fish bag limit and would be illegal to release

Outreach/Education

- 3 people noted support for required outreach (D1) with comments noting the importance of this approach, as compared to the other types of options that would impose restrictions, and the potential for a required education class to target striped bass
- 1 person noted support for recommended outreach (D2) due to not wanting to interfere with agency resources by implementing required outreach

Rebuilding Plan

- 26 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 29 people (poll) support the low recruitment assumption (B) for the 2022 assessment
- 20 people (poll) support the status quo addendum process (A)
- 30 people (poll) support the faster Board action process (B) with comments the Board should act as quickly as possible and focus on rebuilding as the priority
- 1 person noted the importance of waiting until we know the results of the 2022 assessment before deciding how to proceed

Conservation Equivalency

- 20 people (poll) supports status quo Board discretion on CE (A) because the Board should have as much flexibility as possible
- 21 people (poll) support stock status CE restrictions (B)
- 9 people (poll) support MRIP PSE standards (C) for CE proposals
- 12 people (poll) support CE uncertainty buffers (D)
- 10 people (poll) support defining equivalency (E) for CE proposals

General Comments:

- Concern about the accuracy of MRIP data; there is a need for better data and additional data (like the NJ tag data) should be considered to supplement MRIP estimates
- Need for more enforcement and concern about poaching
- Questions about the 9% recreational release mortality estimate and whether it is representative
- Concern that restrictions are focused on the recreational sector that has already taken large reductions
- If the stock does do well, there needs to be assurances of a possible liberalization of restrictions in the future
- Spawning stock in the Chesapeake Bay has declined and that should be the focus; stock is also moving north and out into the EEZ
- There is value in the harvest of striped bass as well as the catch and release
- 1 person recommended adding a stocking program to the draft amendment

Attendance

- *Attendee list attached separately*
- *Additional NJ state staff: Linda Barry, Jeff Brust, Brendan Harrison, Mike Celestino, Heather Corbett, Samantha Macquesten*
- *Additional PA state staff: Tyler Grabowski, Mike Porta, David Nihart*

Delaware Public Hearing
Striped Bass Draft Amendment 7
March 10, 2022 – Webinar

Public Attendees: 19
Hearing Officers: John Clark
ASMFC Staff: Emilie Franke, Savannah Lewis, Tracey Bauer

DE Management Board/Proxies in attendance:
John Clark, Roy Miller

14 attendees provided comments/participated in virtual polls, including comments on behalf of the American Saltwater Guides Association (ASGA)

Polls/Commenters:	
DE	6
ME	1
MA	1
CT	1
NJ	2
MD	2
VA	1

Management Triggers

Tier 1: F Triggers

- 7 people (poll) support reducing F to the target within 1 year (A1)
- 5 people (poll) support reducing F to the target within 2 years (A2)

Tier 4: Deferred Management Action

- 8 people (poll) support status quo no deferred management action (A)
- 3 people (poll) support deferring if it's been less than three years since the last action (B);
- 2 people support deferring if SSB meets criteria (C,D,E);
- 2 people (poll) supports deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

- 2 people noted concern that seasonal closures are not being considered for the commercial sector

Seasonal Closures

- 1 person (poll) support statewide no-targeting closures for 2 weeks (B1)
- 9 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 5 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b)

Gear Restrictions

- 9 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1)
- 7 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2)

Rebuilding Plan

- 4 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 5 people (poll) support the low recruitment assumption (B) for the 2022 assessment
- 4 people (poll) support the status quo addendum process (A)
- 5 people (poll) support the faster Board action process (B)

Conservation Equivalency

- 4 people (poll) supports status quo Board discretion on CE (A)
- 8 people (poll) support stock status CE restrictions (B)
    - 2 people, including ASGA, support B2-a: no CE if the stock is overfished with a comment on not making the situation worse with CE when the stock is overfished
- 5 people (poll) support MRIP PSE standards (C) for CE proposals
    - 2 people, including ASGA, support C3: MRIP PSE limit of 30
- 6 people (poll) support CE uncertainty buffers (D)
    - 2 people, including ASGA, support D2: 10% uncertainty buffer
- 6 people (poll) support defining equivalency (E) for CE proposals
    - 2 people, including ASGA, support E2: CE programs equivalent to state-specific projection with a comment on states not taking a high enough reduction in the past

Attendance

- *Attendee list attached separately*
- *Additional DE state staff: Michael Stangl, David Stormer, Jordan Zimmerman*

Maryland Public Hearing
Striped Bass Draft Amendment 7
March 28, 2022 – Webinar

Public Attendees: 72
Hearing Officers: Mike Luisi (MDDNR)
ASMFC Staff: Emilie Franke, Toni Kerns

MD Management Board/Proxies in attendance:
Mike Luisi, David Sikorski

Polls/Commenters:	
MD	42
ME	1
NH	1
CT	1
NY	4
DE	1
VA	4
FL	1

55 attendees provided comments/participated in virtual polls, including comments on behalf of the Maryland Charter Boat Association (MCBA), Kent County fishermen, Annapolis Anglers Club (AAC), and the Chesapeake Bay Foundation (CBF)

Management Triggers

- General support for developing state- and/or sector-specific mortality rates to determine state- or region-specific management

Tier 1: F Triggers

- 29 people (poll) support reducing F to the target within 1 year (A1)
- 10 people (poll) support reducing F to the target within 2 years (A2)

Tier 4: Deferred Management Action

- 20 people (poll) support status quo no deferred management action (A)
- 7 people (poll) support deferring if it's been less than three years since the last action (B)
- 8 people support deferring if SSB meets criteria (C,D,E)
- 8 people (poll) supports deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

- Overall concern these types of restrictions are not being considered for the commercial sector
- Concern that for-hire is in the same category as private recreational anglers; for-hire have a lower mortality rate as professional fishermen

Seasonal Closures

- 18 people (poll) support statewide no-targeting closures for 2 weeks (B1)
    - Some people, including CBF, noted that longer closures should be considered based on water quality and environmental conditions, and the impacts of mid-water heating and loss of habitat should be considered

- 36 people (poll) support no-harvest spawning area closures for January-April (B2-a)
- 15 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b)
- Some people noted opposition to no-targeting closure options due to enforcement concerns

Gear Restrictions

- 39 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1)
- 24 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2)
- 1 person noted support for limiting the number of rods per person, 1 person supports requiring in-water release of fish in the summer, and 2 people support requiring barbless hooks

Outreach/Education

- 5 people noted support for required outreach (D1) with comments noting the importance of educating new anglers with good catch and release methods, and this requirement would ensure states have budgets to conduct the outreach; one suggestion for a requirement on education in order to get your license

Rebuilding Plan

- 19 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 22 people (poll) support the low recruitment assumption (B) for the 2022 assessment
- 21 people (poll) support the status quo addendum process (A) with comments noting maintaining the public comment period as opposed to limiting comment in B
- 21 people (poll) support the faster Board action process (B), including CBF, with comments the Board should act as quickly as possible and focus on rebuilding the stock and act quickly to avoid a moratorium and to avoid delays in action

Conservation Equivalency

- 7 people (poll) supports status quo Board discretion on CE (A), including MCBA, because the Chesapeake Bay is a very different fishery than the coast, and CE allows the Bay to reduce discards by changing the size limit; the charter industry provides in-depth data to support CE and measures are based on the data and what is happening on the water
- 15 people (poll) support stock status CE restrictions (B)
- 13 people (poll) support MRIP PSE standards (C) for CE proposals
- 13 people (poll) support CE uncertainty buffers (D)
- 4 people (poll) support defining equivalency (E) for CE proposals
- 2 people noted concern about the data and assumptions used for CE programs and the need for restrictions on CE, as well as concern about the current Maryland CE program that while it limits effort in the summer, it enables targeting of large spawning fish in the spring

- 1 person noted the need for accountability for CE programs to address concerns

General Comments:

- Concern and questions about the 9% recreational release mortality estimate and concerns that the estimate is very outdated; this does not represent what the industry is seeing on the water and there should be a new study conducted; it is not appropriate to use this study and new studies should be conducted on a smaller geographic scale to have new, better science to inform management
- Need to be conservative while preserving the opportunity to go fishing
- 2 people support limiting harvest of spawning fish by implementing a maximum size limit during the trophy season and/or limit the number of fish per boat
- AAC and CBF noted the need for conservative action to rebuild the stock as quickly as possible
- 2 people noted concern about menhaden harvest in the Bay and the need to consider prohibiting all menhaden harvest
- General support for the use of slot limits
- The Kent County fishermen representative noted questions about the stock assessment numbers based on reporting that striped bass have not declined and 2021 gill nets and pound nets saw record numbers of fish with less effort required to catch the fish; seeing larger and more fish in the Bay and also multiple stocks of fish from along the coast

Attendance

- *Attendee list attached separately*
- *Additional MD state staff: Alexei Sharov, Simon Brown, Lynn Fegley, Paul Genovese, Erik Zlokovitz, Harry Hornick, Beth Versak, Jeff Horne, Marilyn Lash, George O'Donnell, Angel Willey*

Potomac River Fisheries Commission and District of Columbia Public Hearing
Striped Bass Draft Amendment 7
March 8, 2022 – Colonial Beach, VA

Public Attendees: 14
Hearing Officers: Marty Gary (PRFC) and Daniel Ryan (DC)
ASMFC Staff: Emilie Franke

Commenters from:	
MD/VA	14

Management Board/Proxies in attendance:
Marty Gary (PRFC), Daniel Ryan (DC)

14 attendees provided comments/participated in a show of hands, including comments on behalf of the Maryland Waterman's Association (MWA)

Management Triggers

- 1 person indicated support for taking action more gradually (Tier 1 A2) and letting management be in place a longer time before making changes (Tier 4 B); there has been too much action too fast and the Addendum VI reductions have only been in place for 2 years
- 1 person noted concern about setting the reference point goals too high and they cannot be met; the goals need to lowered to a reasonable condition and we are seeing the condition of more fish available (catching more fish with less effort)
- There was a recommendation to separate commercial and recreational mortality rates in future stock assessments

Recreational Release Mortality

Seasonal Closures

- 1 person noted there are alternate species present in the Bay during the summer so it's not a big deal to have a closure since there are other species to target in the Bay
- 1 person noted that if there are closures, all states should have similar closure requirements
- Multiple people noted that the summer closures are effective in the Potomac and there have been fewer observations of floating, dead fish during the closures

Gear Restrictions

- 1 person noted opposition to the incidental catch requirement (C2); you should not have to release an incidentally caught fish, as long as it's in the legal season and size limit, since it has already suffered due to the gear interaction

General Release Mortality

- 3 people noted releases are increased due to higher size limits (20" minimum as compared to 18" minimum); when the size limit is increased, we have to handle more fish to find one within the size limit, so an 18" size limit would be a better option to reduce releases
- There was discussion about PRFC's decision for Addendum VI conservation equivalency to increase to the 20" minimum size and take a summer closure in order to have a 2-fish bag limit

Rebuilding Plan

- 3 people, including MWA, support using Option A. standard recruitment method for the 2022 stock assessment for the following reasons:
    - It only takes one it only takes one good year class to give us plenty of fish and high year classes will carry the stock
    - Successful spawning and recruitment are driven by environmental factors
    - Variation is natural and it's not unusual to have low years and high years for recruitment, and we are seeing a strong stock in the Potomac with the volume of fish steady and increasing
- 1 person supports the status quo addendum process to respond to the 2022 assessment (Option A) because there should be enough time for a thorough analysis of why the stock is low and to take into account an additional year (2022) under the Addendum VI reductions
- 1 person supports the faster Board action process (Option B) to respond to the assessment to allow for an immediate response to a problem

Conservation Equivalency

- 14 people (unanimous show of hands vote) support status quo Board discretion on CE (Option A) for the following reasons:
    - CE is a tool that must remain accessible since it provides the ability to conserve the resource through CE but maintain economic benefit, which is a win-win for the fish and the fishermen
    - CE for the recreational sector is important with support for the summertime closure because it works and allows them to fish at other times of year; benefits the fish by closing during the warm temperatures and benefits the fishermen
    - CE allows the ability to tweak regulations to better protect the fish (like not fishing on spawners); we are here to have a healthy stock of fish and we want to fish as many as we comfortably can and still have fish for the next generation

General Comments:

- 14 people (unanimous show of hands vote) support comments that the PRFC commercial sector is more accountable than other jurisdictions:
    - PRFC has a weekly reporting system, tags to trace fish back to harvester, and check-in stations;
    - Commercial removals are only 10% of total removals and it is unfair to the commercial sector to take an equal reduction if only removing less than 10% of striped bass, although the commercial sector should carry his weight;
    - Imperative to separate commercial and recreational sectors due to the data differences: you can get commercial data any time and there are no uncertainties to how many fish are removed by commercial harvesters; PRFC has been under the commercial quota in every year except one year;
    - Commercial sector is fishing on a smaller fish (5-7 pounds), and this is a win-win because 90% are male so there is no strain on spawning fish;
    - Commercial harvesters we are food producers producing top quality fish and need stay in business and have the data to support that
- Concern about invasive blue catfish predation on striped bass and the effect on the spawning stock in the Chesapeake Bay, which should be taken into account
- Virginia should have the same recreational reporting system as Maryland, which is much more detailed
- Climate change may be impacting where spawning occurs, with more spawning in northern areas that are no longer iced over

Attendance

- *Sign-in sheet attached separately*

Virginia Public Hearing
Striped Bass Draft Amendment 7
March 9, 2022 – Webinar

Public Attendees: 42
Hearing Officers: Pat Geer (VMRC)
ASMFC Staff: Emilie Franke, Maya Drzewicki

VA Management Board/Proxies in attendance: Pat Geer

Polls/Commenters:	
VA	18
ME	2
MA	2
CT	2
NJ	1
MD	2
NC	1

28 attendees provided comments/participated in virtual polls, including comments on behalf of the Virginia Saltwater Sportfishing Association (VSSA), commercial watermen (represented by attorney), Virginia Anglers Club (VAC), and Chesapeake Bay Foundation (CBF)

Management Triggers

- 4 people supported taking immediate action to address the stock
- 2 people, including for commercial watermen, noted the need for flexibility and reasonable time to make decisions

Tier 1: F Triggers

- 4 people support reducing F to the target within 1 year (A1), including VSSA and VAC, with comments in support of taking immediate action
- 2 people support reducing F to the target within 2 years (A2)
- 4 people support status quo F triggers (B1 and C1), including VSSA and VAC

Tier 2: SSB Triggers

- 4 people support a 2-year deadline to implement a rebuilding plan (A2), including VSSA and VAC
- 4 people support status quo SSB triggers (B1 and C1), including VSSA and VAC

Tier 3: Recruitment Trigger

- 4 people support moderate sensitivity trigger (A2), including VSSA and VAC
- 4 people support the most conservative recruitment trigger response (B2), including VSSA and VAC
- 1 person noted concerns about the use of juvenile abundance indices as a proxy for recruitment

Tier 4: Deferred Management Action

- 13 people (poll) support status quo no deferred management action (A), including VSSA, VAC, and CBF, with comments noting past management has acted too slowly and there cannot be deferred action while the stock is rebuilding
- 6 people (poll) support deferring if it's been less than three years since the last action (B);
- 4 people (poll) support deferring if SSB meets criteria (C,D,E);
- 3 person (poll) supports deferring if action has already been initiated in response to another trigger (F)

Recreational Release Mortality

- General comments that some states have higher release mortality than others and there is concern about release mortality during the warmer months in the Chesapeake
- Addressing recreational release mortality is a specific problem and restricting the commercial fishery will not help address this issue

Seasonal Closures

- 11 people (poll) support statewide no-targeting closures for 2 weeks (B1)
    - Some comments that a 2-week closure is inadequate and not long enough
- 18 people (poll) support no-harvest spawning area closures for January-April (B2-a), including VSSA and VAC
- 10 people (poll) support no-targeting spawning ground closures for 2 weeks (B2-b), including VSSA and VAC

Gear Restrictions

- 24 people (poll) support prohibiting devices other than non-lethal devices for removing striped bass from the water (C1), including VSSA and VAC
- 16 people (poll) support requiring the release of incidentally caught striped bass on any unapproved method of take (C2), including VSSA and VAC

Outreach/Education

- 5 people, including VSSA, VAC, and CBF, noted support for required outreach (D1)

Rebuilding Plan

- 10 people (poll) support the standard recruitment method (A) for the 2022 assessment
- 14 people (poll) support the low recruitment assumption (B) for the 2022 assessment, including VSSA, CBF, and VAC, with comments supporting a conservative approach to rebuild the fishery for ecological and economic value
- 8 people (poll) support the status quo addendum process (A)
- 13 people (poll) support the faster Board action process (B), including VSSA, CBF, and VAC, with comments that this is one of the most important components of the draft amendment and recovery should not be delayed
- General comments that the Board should keep in mind viability of fishing community when determining the rebuilding plan; there is a need for a healthy, robust fishery

Conservation Equivalency

- 7 (poll) supports status quo Board discretion on CE (A), including for the commercial watermen, with comments to maintain flexibility to address state-specific circumstances
- 15 people (poll) support stock status CE restrictions (B)
    - 11 people (poll) noted support for B1-a: no CE if the stock is overfished, including VSSA, VAC, and CBF
    - 3 people (poll) noted support for B1-b: no CE if SSB is below the target
    - 12 people (poll) noted support for B1-c: no CE if overfishing is occurring, including VSSA, VAC, and CBF, and VAC
    - 5 people (poll) support B2-a: stock status restrictions should also apply to the Hudson River and DE River/Bay recreational fisheries

    - 9 people (poll) support B2-b: stock status restrictions should also apply to recreational bonus programs, including VSSA and VAC,
    - 6 people (poll) support B2-c: stock status restrictions should also apply to commercial fisheries
- 13 people (poll) support MRIP PSE standards (C) for CE proposals
    - 1 person (poll) noted support for C1: 50 PSE limit
    - 12 people (poll) noted support for C3: 30 PSE limit, including VSSA and VAC
- 13 people (poll) support CE uncertainty buffers (D)
    - 2 people (poll) noted support for D1: 10% buffer
    - 7 people (poll) noted support for D2: 25% buffer, including VSSA and VAC
    - 4 people (poll) noted support for D3: 50% buffer
- 4 people (poll) support defining equivalency (E) for CE proposals
    - 4 people (poll) noted support for E2: equivalency to state-specific projection, including VSSA and VAC, including VSSA and VAC
- Some comments, including VSSA and VAC, in support of required payback the following year if CE assumptions are not met
- CBF noted CE has not functioned as intended, and should not be used during rebuilding
- Some comments, including for the commercial watermen, that CE is the only way to recognize differing circumstances in the different regions and different; any CE restrictions should be limited and CE should continue to be available, with particular opposition to B2-c
- 1 person noted the importance of accounting for discard mortality in CE options and how CE programs can lead to a more sustainable fishery by reducing discards

General Comments:

- Environmental factors play a large role in spawning and recruitment success, including pollution, turbidity, snow melt, in-stream flow, and predation (e.g., blue catfish)
- Climate change and the availability of baitfish also impact stock decline
- Recruitment success is variable with a boom-bust pattern, and we can expect fishing to improve over the next few years
- Virginia has already adopted restrictions (like eliminating the spring trophy fishery) and has been fishing under the commercial quota, which is providing additional conservation
- The commercial sector has already given up a lot, and the reason they are not catching their quota is due to regulation, not because the fish weren't there; the commercial fishery has not been responsible for excess mortality
- Regional flexibility is especially important because no one size fits all, including different environmental conditions in different regions
- Don't want stability to overrule what must be done to restore the fishery
- MRIP numbers are not accurate enough and a better data system is needed

Attendance

- *Attendee list attached separately*
- *Additional VA state staff: Shanna Madsen, Jill Ramsey*

Maine Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 23, 2022
Attendee List

Last Name	First Name	State
Alvarez	Jason	New York
Boulette	James	Maine
Barnes	Duncan	Maine
Batsavage	Chris	North Carolina
Batter	Victoria	Maine
Bickford	Matt	Maine
Bloom	Charlotte	Maine
Boghdan	Kalil	Maine
Borgatti	Christopher	Massachusetts
Bryand	Michael	Maine
Calabrese	Marc	Maine
Calagione	Sam	Delaware
Cieri	Matthew	Maine
Cloutier	Germain	Maine
Cooper	John	Maine
Cummings	Derek	New Hampshire
Cummings	Derek	New Hampshire
Deflumeri	Dominic	New York
Dionne	Joshua	Maine
Dooley	Mike	Maine
Fallon	Peter	Maine
Farris	Jay	Maine
Flaherty	Mike	New York
Friedrich	Anthony	Maryland
Gary	Martin	Virginia
Geissler	Scott	Maine
Gerrish	Parker	Maine
Gibson	Barry	Maine

Hackett	Andrew	New Hampshire
Higgins	Nelson	New York
Horner	Ben	New Hampshire
Humphrey	Bob	Maine
Johnson	Tom	Maine
Kaler	Ben	Maine
Karwacky	Kurt	Maine
Keliher	P	Maine
Kleiner	Don	Maine
Lacey	Tobias	Maine
Landry	Aaron	Maine
Larrabee	Jonathan	Maine
Lennon	Thomas	New York
Lorello	Mike	Maine
Mohan	John	Maine
Mohlin	Pete	Maine
Murphy	Tim	Maine
Nichols	Jeffrey	Maine
Park	Peter	New York
Pecci	David	Maine
Piatek	Chris	Maine
Pilatich	Daniel	New York
Pizzella	Anthony	Maine
Pschirrer	Capt. Rich	Maine
Pucci	Dominick	Maine
Roberts	Courtney	Maine
Rosa	Bryan	Maine
Rudman	Patrick	Maine
Sarcona	Tony	Maine
Schaefer	Kyle	Maine
Sevigny	Josh	Maine
Sevigny	Jamie	Maine

Simoneau	John	Maine
Smith	Marc W	Maine
Sullivan	Owen	New York
Tirado	Lou	Maine
Toole	Michael	New Hampshire
Trenz	Bob	New York
Wagner	Owen	Maine
Wallace	Capt. Eric	Maine
Ware	Megan	Maine
Whalley	Ben	Maine
Whitener	Zach	Maine
Willsea	Flynn	Maine
Woods	Barry	Maine
Woods	Michael	Rhode Island
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns, Maya Drzewicki

New Hampshire Striped Bass Draft Amendment 7 Public Hearing
Hybrid (Portsmouth, NH and Webinar)
March 29, 2022
Webinar Attendee List

Last Name	First Name	State
Barnes	Paul	New Hampshire
Bartolo	John	New Hampshire
Borgatti	Christopher	Massachusetts
Brown	Mark	Maryland
Calitri	Robin	New Hampshire
Cloutier	Germain	Maine
Cuprewich	Ryan	New Jersey
Dionne	Joshua	Maine
Ferguson	James	New Hampshire
Fleming	Richard	New Hampshire
Gallahue	Benjamin	New Hampshire
Gary	Martin	Virginia
Henry	Suzan	New York
Heuss	Rebecca	New Hampshire
Horner	Ben	New Hampshire
Hornick	Harry	Maryland
Jenner	Blaise	Maine
Jewkes	James	Massachusetts
Mathison	Jon	New Hampshire
Mobley	Matt	Maryland
Nesius	Ted	Massachusetts
Omalley	Andrew	New Hampshire
Oake-Libow	Eli	New Hampshire
Patterson	Cheri	New Hampshire
Stallkamp	Christian	New Hampshire
Skorupski	Ed	New York
Sullivan	Kevin	New Hampshire
Woods	Michael	Rhode Island

Zlokovitz	Erik	Maryland
Zobel	Renee	New Hampshire

ASMFC Staff: Emilie Franke, Savannah Lewis

See following page for New Hampshire in-person sign-in.

Atlantic Striped Bass Draft Amendment 7 for Public Comment

Atlantic States Marine Fisheries Commission
March 29, 2022
Portsmouth, NH

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Name	Company/Organization	City, State
Ritchie White	ASMFC	NH
Meggan Hodgson	NHF+G Comm	NH
Ray Green	NHF+G Comm	NH
Peter Whelan	CCA	NH
Sean Maxwell	–	NH
Gregg Nye	–	NH
Mike Hunkus	–	NH

Massachusetts Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 21, 2022
Attendee List

Last Name	First Name	State
Abdow	Mike	Massachusetts
Armstrong	Mike	Massachusetts
Audet	Gerald	Massachusetts
Avila	Jason	Massachusetts
Ayer	Matthew	Massachusetts
Bartolo	John	New Hampshire
Batsavage	Chris	North Carolina
Baunach	Steve	Connecticut
Berry	Howard	New Hampshire
Berwick	Trevor	Connecticut
Borgatti	Christopher	Massachusetts
Boyle	James	Massachusetts
Bravo	Perer	Massachusetts
Cabrera	Jonathan	Massachusetts
Campbell	Scott	Massachusetts
Cannistraro	Dave	Massachusetts
Carter	Ken	Massachusetts
Christian	Mark	Massachusetts
Cloutier	Germain	Maine
Cook	Ryan	Massachusetts
Coombs	Brian	Massachusetts
Creighton	Jack	Massachusetts
Cullen	James	Massachusetts
Cummings	Derek	New Hampshire
Curry	Brian	Massachusetts
Curtin	Brad	Massachusetts
Dannenfelser	Joe	Maryland
Decosta	Robert	Massachusetts

Deflumeri	Dominic	New York
Delzingo	Captain Mike	Massachusetts
Denno	Patrick	Massachusetts
Diggins	Paul	Massachusetts
Dresser	Winslow	Massachusetts
Fallon	Peter	Maine
Feeley	Bob	Massachusetts
Frieden	Jaron	Massachusetts
Friedrich	Anthony	Maryland
Fuda	Tom	Connecticut
Furtado	Jeremy	Massachusetts
Gahagan	Benjamin	Massachusetts
Garst	Steve	Connecticut
Godoi	Diogo	Massachusetts
Golden	Rick	Massachusetts
Goldsmith	Willy	District Of Columbia
Henry	Suzan	New York
Haffey	Kane	Massachusetts
Heath	Tom	Massachusetts
Hoffman	William	Massachusetts
Jaskiel	Jacob	Massachusetts
Jewkes	James	Massachusetts
Kelly	Matthew	Massachusetts
Kaizer	Peter	Massachusetts
Kane	Raymond	Massachusetts
Karwacky	Kurt	Massachusetts
Kelleher	David	Massachusetts
Larson	David	Massachusetts
Lituma	Ivan	Connecticut
Lyons	Michael	Massachusetts
Mazzola	Robert	Massachusetts
Mcdermott	Sean	Massachusetts

Mckiernan	Dan	Massachusetts
Meserve	Nichola	Massachusetts
Mitchell	Billy	Massachusetts
Morabito	James	Massachusetts
Moran	Patrick	Massachusetts
Nelson	Gary	Massachusetts
Nesius	Ted	Massachusetts
Nye	Gregory	Massachusetts
O'donnell	George	Maryland
Oconnor	Jonathan	Massachusetts
Passeck	James	Massachusetts
Peros	Dave	Massachusetts
Perrone	John	Massachusetts
Petracca	Tim	Massachusetts
Pierdinock	Michael	Massachusetts
Poirier	Anthony	Massachusetts
Poston	Will	Maryland
Prodouz	William	Massachusetts
Revere	Avery	Massachusetts
Richardson	John	Massachusetts
Rimmer	David	Massachusetts
Rowley	John	Massachusetts
Santini	Peter	Massachusetts
Savino	Rob	Massachusetts
Silver	Jeffrey	Massachusetts
Simeone	Vincent	Massachusetts
Smith	Kevin	Massachusetts
Soldati	Gary R.	Massachusetts
Spinney	Mike	Massachusetts
Steinback	Scott	Massachusetts
Surdel	Dave	Massachusetts
Sylvestre	George	Massachusetts

Thiebault	Kristen	Massachusetts
Tombros	John	Massachusetts
Toole	Michael	New Hampshire
Tully	Edward	Massachusetts
Walsh	Matt	Massachusetts
Warner	Hans	Maine
Williams	Al	Massachusetts
Witthuhn	Steven	New York
Wood	Richard	Massachusetts
Woods	Michael	Rhode Island
Zimmerman	Brian	Massachusetts
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns

Rhode Island Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 15, 2022
Attendee List

Last Name	First Name	State
Anderson	Dave	Rhode Island
Bellavance	Rick	Rhode Island
Bevacqua	Emil	New Jersey
Blanchard	Kurt	Rhode Island
Bosley	Eric	New York
Cabrera	Jonathan	Massachusetts
Cloutier	Germain	Maine
Cummings	Derek	New Hampshire
Dameron	John	Virginia
Dangelo	Capt. Andy	Rhode Island
Davis	George	Rhode Island
DePersenaire	John	None
Fallon	Peter	Maine
Friedrich	Anthony	Maryland
Fuda	Tom	Connecticut
Gary	Martin	Virginia
Gottschall	Kurt	Connecticut
Hittinger	Rich	Rhode Island
Hornick	Harry	Maryland
Jarvis	Jason	Rhode Island
Jenkins	Peter	Rhode Island
Jenner	Blaise	Maine
Lake	John	Rhode Island
Lengyel Costa	Nicole	Rhode Island
Macari	Joe	Rhode Island
Mataronas	Gary	Rhode Island
Mazzola	Robert	Massachusetts
Mcnamee	Jason	Rhode Island

Monti	Dave	Rhode Island
O'Neill	Tyler	Delaware
Poirier	Anthony	Massachusetts
Poston	Will	Maryland
Sheffield	Phillip	Rhode Island
Spinney	Mike	Massachusetts
Tiska	Carl	Rhode Island
Witthuhn	Steven	New York
Woods	Michael	Rhode Island
Zambrotta	Dennis	Rhode Island
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns, Maya Drzewicki

Connecticut Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 22, 2022
Attendee List

Last Name	First Name	State
Appelman	Max	Maryland
Beneventine	Joseph	Connecticut
Berwick	Trevor	Connecticut
Borgatti	Christopher	Massachusetts
Bravo	Perer	Connecticut
Brewer	Benjamin	Connecticut
Carey	Tim	Connecticut
Catalano	Vincent	New York
Cloutier	Germain	Maine
Collins	David	Connecticut
Davis	Justin	Connecticut
DeFelice	Lou	Connecticut
DeFlumeri	Dominic	New York
Dion	Michael	Connecticut
Dondero	Mark	Connecticut
Dudus	Roman	Connecticut
Findorak	Daniel	Connecticut
Forrest	Todd	Connecticut
Friedrich	Anthony	Maryland
Fuda	Tom	Connecticut
Goldstein	Paul	Connecticut
Gust	Alex	Connecticut
Hardy	Jake	New York
Hyatt	Bill	Connecticut
Ingraham	Taylor	Connecticut
Karbowski	TJ	Connecticut
Kelly	Brian	Connecticut
Kosakoff	Ken	Connecticut

Lapinski	Toby	Connecticut
M Zrelak	Gary	Connecticut
Megargle	Seth	Connecticut
Miner	Senator Craig	Connecticut
Molnar	David	Connecticut
Morgan	Jerry	Connecticut
Nesius	Ted	Massachusetts
O'Sullivan	Jerome	Maine
Patterson	Cheri	New Hampshire
Perrino	Albert	Connecticut
Pitman	L. Robert	Connecticut
Poston	Will	Maryland
Robertson	Matthew	Connecticut
Susca	Matt	Connecticut
Tefft	Joshua	Connecticut
Witthuhn	Steven	New York
Woods	Michael	Rhode Island
Zenel-Walasek	Arek	New York
Zlokovitz	Erik	Maryland

ASMFC Staff: Toni Kerns, Emilie Franke

Atlantic Striped Bass Draft Amendment 7 for Public Comment

Atlantic States Marine Fisheries Commission
March 16, 2022
Kings Park, NY

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Name	Company/Organization	City, State
Liam Monarchio		Port Washington, NY
James Stawecki	LIBBA	East Yaphank NY
Charles Witek		W. Babylon, NY
Garrett Moore	LIBBA 547/HHSC	Westbury N.Y.
Chris Faller		Ronkonkoma, NY
Jim Lafferty		Smithtown NY
Craig Cantelmo	VAN STAAL	Cutchogue, NY
Rob Hoff	High Hill SS	Lor G[illegible] NY
Edward J. Mercieca	High Hill Striper C.	Brightwaters, N.Y.
Al Albano	High Hill Striper Club	Sayville, NY 11782
Michael Frank	High Hill Striper Club	Seaford NY 11783
Lonny Ferro	High Hill Striper Club	Lynbrook NY
Steven P. Wacker	High Hill Striper Club	Commack
Sergio Diaz		Sayville, NY
Michael Caruso	The Fisherman Magazine	Mt. Sinai, NY
Angelo Donofrio	"	"
Steve Reith	MDAC	New York.
Ross Squire	MYCRF	Centereach NY
William Kiz		Centereach NY
Dominic Deflumeri		Massapequa Park, NY
Dylan Jacell	All Island	Shirley N.Y.

Name	Company/Organization	City, State
Donald DiCostanzo	HHSC	Commack NY
Joseph Gittleman	LIBBA	Babylon, NY
Peter Jeremy	HHSC	Bronx NY
Steve KNAPIK	Stanton Surf Club	Nassau County NY
Klaus Rondinella	L.I.B.B.A	Nassau/Suffolk NY
Jim Frank		New Rochelle NY
Carl LoBue	+ NC	Huntington NY
PHILIP ROMANO	BAYSIDE ANGLERS GROUP	~~FLU~~ BAYSIDE N.Y.
Matt Broderick	The Fisherman Magazine	Medford NY.

Atlantic Striped Bass Draft Amendment 7 for Public Comment

Atlantic States Marine Fisheries Commission
March 23, 2022
New Paltz, NY

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Name	Company/Organization	City, State
Jay Martin	SELF	ACCORD, NY
Michelle Stretch	self	Dutchess . NY
JEFF HELMUTH	SELF	SAUGERTIES, NY
Tom BAUDANZA	Self	SAUGERTIES, NY
[illegible] SCHULTZ	SELF	OLIVEBRIDGE NY.
Chris Palmer	SELF	NEW HAMPTON, NY
George Murphy	Hudson River charter	NY
Jacob Dodd	self	saugerties NY
Fred Causey	Self	Saugerties NY
Harold Cades	Self	Saugerties NY
Paul Wipf	self	Esopus NY
BOBBY TAYLOR		Kingston NY
Michael Ford	Reel Addicted Charters	Big Indian NY
Rick Eckert	Self	Kingston NY
HAROLD MULKOWSKY	SELF	ACCORD NY
ANDREW WERKHOVEN	SELF	NEWBURGH, NY
Chris Mc[illegible]	Self	Walden, NY
Roger Cornell	SELF	La Grange, NY
JUSTIN Cocla	Self	TROY NY.
Chris Oliver	Keepin it Reel	Poughkeepsie NY
MIKE TRACEY	MONSTER HUNTER CHARTER	TROY NY

Atlantic Striped Bass Draft Amendment 7 for Public Comment

Atlantic States Marine Fisheries Commission
March 23, 2022
New Paltz, NY

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Name	Company/Organization	City, State
Ed Skorupski	Self	Stillwater, NY
Megan Sutton	Self	Ruby, NY
Captain Suzy Henry	Self	Poestenkill, NY
Ralph J. Albino	Self	West Kill NY
Zach Schubert	Self	Earlton, NY
Jess Wagenbaugh	Self	Earlton, NY
Frank Maresco	Self	New Windsor, NY
Mark Gyndmon		
Sarah LaLumiere	SELF	Kerhonkson, NY
Amanda Simmonds	Self	New Paltz, NY
Andrina Gonzalez	Self	Newburgh NY.
Pet Gallagher	Tippin' Scales	Kingston
Tom Dinnell	DEC	
Nickolas Lange	Totally Hooked charters	Kingston N.Y.
Steve Meyer	Self	Millbrook, NY
John Lennon		Liberty, NY
Martin Barth	Self	NY

Name	Company/Organization	City, State
Kim Doyle	self	Phoenicia NY
Holly Clark	Self	New Paltz, NY
Kenneth Lus	Self	Newburgh, NY
Will DePaolo	Self	Liberty, NY

Name	Company/Organization	City, State
Ty & Kaity Stein		Cairo New York
Lawrence Kupiec		LaGrangeville, NY
Haley Josephson	Self	New Paltz, NY
Tay Fiumara		Pok, N Y.

New Jersey-Pennsylvania Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 14, 2022
Attendee List

Last Name	First Name	State
Albanese	Joseph	New Jersey
Azzinaro	John	New Jersey
Alessi	Kieran	New Jersey
Audet	Jerry	None
Augustino	Mason	New Jersey
Barry	Linda	New Jersey
Bazydlo	Bryan	New Jersey
Belsky	Robert	New Jersey
Bolen	Keith	New Jersey
Brihn	Rich	New Jersey
Brust	Jeffrey	New Jersey
Chikotas	Bryan	Pennsylvania
Campion	George	Delaware
Celestino	Michael	New Jersey
Chayes	Fletcher	New Jersey
Cimino	Joe	New Jersey
Cloutier	Germain	Maine
Corbett	Heather	New Jersey
Cudnik	Greg	New Jersey
Curtiss	Ken	New Jersey
Defonteny	Louis	New Jersey
Dangelo	Tony	New Jersey
Deflumeri	Dominic	New York
Depersenaire	John	New Jersey
Dupointe	Chris	New Jersey
Elliott	Warren	Pennsylvania
Emerson	Clay	New Jersey
Fallon	Peter	Maine

Fote	Tom	New Jersey
Friedrich	Anthony	Maryland
Glassberg	David	New Jersey
Gary	Martin	Virginia
George	Steve	New Jersey
Grabowski	Tyler	Pennsylvania
Grossman	Andy	New Jersey
Haasz	Steve	New Jersey
Handley	Brooke	New Jersey
Harbula	Joseph	New Jersey
Harcourt	Kyle	New Jersey
Harrison	Brendan	New Jersey
Hartley	Victor	New Jersey
Honachefsky	Nick	New Jersey
Hutchinson	Jim	New Jersey
Intile	Joseph	New Jersey
K	Ray	New Jersey
Kiernan	Austin	New Jersey
Kuhn	Kris	Pennsylvania
Kull	Laura	New Jersey
Leaun	Dave	New Jersey
Lerro	Anthony	New Jersey
Levy	Eric	New Jersey
Lospinoso	Gregory	New Jersey
Lustig	Loren	Pennsylvania
Moore	Derek	New Jersey
Macquesten	Samantha	New Jersey
Machalaba	Stephen	New Jersey
Markiewicz	Karl	Delaware
Marzolla	Paul	New Jersey
Matulonis	Thomas	New Jersey
Mazzola	Robert	Massachusetts

Mcgee	Thomas	New Jersey
Mcilrath	Craig	New Jersey
Mitchell	Dennis	Pennsylvania
Montefusco	Nick	New Jersey
Myer	Chris	Pennsylvania
Natoli	Richard	Pennsylvania
Neilan	Brian	New Jersey
Nguyen	Khoa	Pennsylvania
Nicastro	Luke	Pennsylvania
Nihart	David	Pennsylvania
Nowalsky	Adam	New Jersey
Orens	Charles	New Jersey
Paggi	Joseph	New Jersey
Peikin	Jeffrwy	Pennsylvania
Polizzi	Anthony	New Jersey
Porta	Mike	Pennsylvania
Poston	Will	Maryland
Purvin	Michael	New Jersey
Rusch	Douglas	New Jersey
Reisen	Joseph	New Jersey
Reta	Michael	New Jersey
Risser	Matthew	Pennsylvania
Shillingford	Bill	New Jersey
Sanchez	John	New Jersey
Simon	Philip	New Jersey
Skelly	Michael	New Jersey
Sodon	Robert	New Jersey
Spatta	Kenneth	New Jersey
Taylor	David	New Jersey
Taylor	Douglas	New Jersey
Thomas	Scott	New Jersey
Toth	John	New Jersey

Ulrich	Arnold	New Jersey
Van Hassent	Howard	New Jersey
Vilceanu	Radu	New Jersey
Witthuhn	Steven	New York
Walsifer	Peter	New Jersey
Walters	Brian	New Jersey
Warcola	Casey	New Jersey
Whitmore	Kelly	New Jersey
Woods	Michael	New Jersey
Zakrzewski	Edward	New Jersey
Zappella	Frank	New Jersey
Zemeckis	Douglas	New Jersey

ASMFC Staff: Emilie Franke, Toni Kerns, Savannah Lewis

Delaware Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 10, 2022
Attendee List

Last Name	First Name	State
Barr	Janine	Delaware
Clark	John	Delaware
Cloutier	Germain	Maine
Conroy	Margaret	Delaware
Deller	Michael	Delaware
Dameron	John	Virginia
DeFlumeri	Dominic	New York
Delzingo	Captain Mike	Massachusetts
Friedrich	Anthony	Maryland
Fuda	Tom	Connecticut
Gary	Martin	Virginia
Lordo	Anthony	New Jersey
Miller	Roy	Delaware
O'Neill	Tyler	Delaware
Poston	Will	Maryland
Rakes	Shawn	Delaware
Smith	Chris	Delaware
Smith	Joseph	Delaware
Smith	Chris	Delaware
Stangl	Michael	Delaware
Stormer	David	Delaware
Townsend	Wes	Delaware
Woolford-Badur	Danielle	Delaware
Yenkinson	Harvey	New Jersey
Zimmerman	Jordan	Delaware

ASMFC Staff: Emilie Franke, Savannah Lewis, Tracey Bauer

Maryland Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 28, 2022
Attendee List

Last Name	First Name	State
Aus	Andrew	Maryland
Avila	Jason	Maryland
Brown	Mark	Maryland
Brown	Simon	Maryland
Brupbacher	Michael	Maryland
Chastrist	Cj	Maryland
Carski	Ted	Maryland
Cloutier	Germain	Maine
Cockx	Justin	New York
Colden	Allison	Maryland
Cool	Michael	Maryland
Davis	Christopher	New York
Dean	Rachel	Maryland
Dintaman	Evan	Maryland
Dionne	Joshua	Maine
Ditmars	Zach	Maryland
Dollar	Chris	Maryland
Dondero	Mark	Connecticut
Eff	Rex	Maryland
Eustis	Mark	Maryland
Fegley	Lynn	Maryland
Fleming	Beverly	Maryland
Fletcher	Robert	Maryland
Frey	Sewell "Toby"	Maryland
Gaff	Jerry	Maryland
Gary	Martin	Virginia
Genovese	Paul	Maryland
Griffin	Steve	Maryland

Henry	Suzan	New York
Hardman	Brian	Maryland
Holsey	Greg	Maryland
Horne	Jeffrey	Maryland
Horner	Ben	New Hampshire
Hornick	Harry	Maryland
Landis	Edwin	New Jersey
Lash	Marilyn	Maryland
Laube	Christopher	Maryland
Lesser	Kevin	Virginia
Lewis	Kenneth	Maryland
Lewis	Lloyd	Maryland
Luisi	Michael	Maryland
Lyons Gromen	Pamela	Florida
Maginnes	David	Maryland
Malec	Brandon	Maryland
Mathison	Jon	Massachusetts
McMenamin	Kevin	Maryland
Meyers	S	Virginia
Mobley	Matt	Maryland
Moore	Walter	Maryland
Morse	Matt	Maryland
Mortus	Timothy	Maryland
Munro	Bob	Maryland
Newberry	Capt. Robert	Maryland
O'Donnell	George	Maryland
Olmstead	Bert	Maryland
O'Neill	Tyler	Delaware
Packard	Eric	Maryland
Pennisi	Matthew	New York
Pierce	Don	Maryland
Prestwich	Ron	Maryland

Rehner	Stephen	Maryland
Roberts	Tom	Maryland
Rudow	Mollie	Maryland
Rudow	Lenny	Maryland
Seidle	Stephanie	Maryland
Seigel	Buddy	Maryland
Seman	Jason	Maryland
Sharov	Alexei	Maryland
Shoultz	Matthew	Maryland
Shute	Greg	Maryland
Sikorski	David	Maryland
Smolek	Michael	Maryland
Spinney	Mike	Massachusetts
Sutton	Allen	Maryland
Swart	Thomas	New York
Tippett	Lee	Maryland
Versak	Beth	Maryland
Wingate	Brandon	Maryland
Walbert	John	Maryland
Willey	Angel	Maryland
Williams	John Page	Virginia
Witthuhn	Steven	New York
Woods	Michael	Rhode Island
Zalesak	Phil	Maryland
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns

Atlantic Striped Bass Draft Amendment 7 for Public Comment

Atlantic States Marine Fisheries Commission
March 8, 2022
Colonial Beach, VA

-- PLEASE PRINT CLEARLY –

Name	Company/Organization	City, State
G. Tyler Willett	Self	White Plains MD
[illegible]	Charles Co	Faulkner MD
Russell Sullivan	PRFC	Bel Alton MD
Ben Ames	PRFC Finfish	Reedville, VA
Ryan Rogers	PRFC	Reedville, Va.
William L. Rice Sr.	Self & Piccowaxen Ck. Seafood	Newburg, MD.
John Dameron	PRFC Finfish	Kinsale VA
[illegible]		Reedville VA
[illegible]		Stafford
Robert T Brown	MWA	St. Mary's MD
Victoria M Brown	St. Mary's	MD
Frank Swann		Newburg Md
Mike Swann		Newburg Md.
Gary Owens	Potomac waterman	King George, VA.

Virginia Striped Bass Draft Amendment 7 Public Hearing
Webinar
March 9, 2022
Attendee List

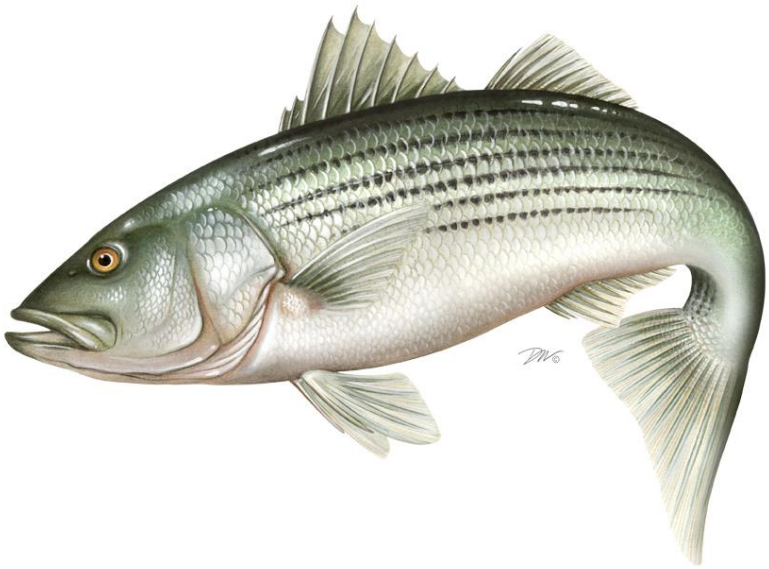
Last Name	First Name	State
Alverson	Harry	Massachusetts
Atkinson	Steve	Virginia
Batsavage	Chris	North Carolina
Belkoski	David	North Carolina
Bello	John	Virginia
Bentley	Kevin	Connecticut
Bertoline	Susan	New York
Buchanan	Jack	Virginia
Cammarata	Julie	Connecticut
Cloutier	Germain	Maine
Cowles	Reynolds	Virginia
Dameron	John	Virginia
Defelice	Lou	Connecticut
Deem	Jeff	Virginia
Dion	Michael	Virginia
Estabrook	Susan	Rhode Island
Fuda	Tom	Connecticut
Geer	Pat	Virginia
Gurley	Mike	Virginia
Haasz	Steve	New Jersey
Hardison	Sean	Virginia
Heinold	Paul	Virginia
Higgins	Jaclyn	Missouri
Hunsinger	Brent	Virginia
Jewkes	James	Massachusetts
Lesser	Kevin	Virginia
Ludford	Chris	Virginia
Madsen	Shanna	Virginia

Moore	Chris	Virginia
Murphy	Kenneth	Maryland
Musick	Susanna	Virginia
Oliver	Zane	Virginia
Ostrander	Capt. Mike	Virginia
Pirro	Donald	New Jersey
Place	Kelly	Virginia
Poston	Will	Maryland
Purvin	Michael	New Jersey
Quinan	Michael	Virginia
Ramsey	Jill	Virginia
Reta	Michael	New Jersey
Rowe	Tyler	Virginia
Rudacille	Bryan	Virginia
Schaefer	Kyle	Maine
Trenz	Bob	New York
Williams	John Page	Virginia
Wood	Richard	Massachusetts
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Maya Drzewicki

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM VII TO AMENDMENT 6 TO THE ATLANTIC STRIPED BASS INTERSTATE FISHERY MANAGEMENT PLAN



This draft document was developed for Management Board review and discussion. This document is not intended to solicit public comment as part of the Commission/State formal public input process. Comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. If approved, a public comment period will be established to solicit input on the issues contained in the document.

October 2021

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Public Comment Process and Proposed Timeline

In August 2021, the Atlantic Striped Bass Management Board (Board) initiated the development of an addendum to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass to consider allowing voluntary transfers of ocean commercial quota. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of striped bass; the addendum process and timeline; and a statement of the problem. This document also provides management options for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **XXXXX at 11:59 p.m. (EST).** Comments may be submitted at state public hearings or by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below. Organizations planning to release an action alert in response to this Draft Addendum should contact Emilie Franke, Fishery Management Plan Coordinator, at efranke@asmfc.org or 703.842.0740.

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1.0 Introduction

Atlantic striped bass (*Morone saxatilis*) are managed through the Commission in state waters (0-3 miles) and through NOAA Fisheries in federal waters (3-200 miles). The management unit includes the coastal migratory stock between Maine and North Carolina. Atlantic striped bass are currently managed under Amendment 6 to the Interstate Fishery Management Plan (FMP) and Addenda I – VI.

The Atlantic Striped Bass Management Board (Board) initiated Draft Addendum VII in August 2021 through the following motion: *Move to initiate an addendum to amendment 6 to allow voluntary transfers of commercial striped bass quota as outlined in the memo of July 26th, 2021 to the Atlantic Striped Bass Management Board regarding these transfers*. To address the Board motion this Addendum considers allowing the voluntary transfer of the commercial coastal quota between states.

2.0 Overview

2.1 Statement of the Problem

In August 2020, the Board initiated development of Amendment 7 to the FMP. The purpose of the amendment is to update the management program in order to reflect current fishery needs and priorities given the status and understanding of the resource and fishery has changed considerably since implementation of Amendment 6 in 2003. The Board intends for the amendment to build upon the Addendum VI action to end overfishing and initiate rebuilding. In February 2021, the Board approved for public comment the Public Information Document (PID) for Draft Amendment 7. As the first step in the amendment process, the PID was a broad scoping document seeking public input on a number of important issues facing striped bass management, including coastal commercial quota allocation. The PID had proposed considering changes to the coastal commercial quota allocation because the striped bass commercial quota allocation has been based on harvest data from the 1970s which may, or may not be an appropriate baseline. Harvester reporting during that time was not required and there is evidence that harvesters would sell fish in other states resulting in further inaccuracies in state estimates. No other ASMFC-managed species is managed with harvest data as old as that used for striped bass allocation.

In May, after the PID public comment period, the Board approved the following issues for development in Draft Amendment 7: recreational release mortality, conservation equivalency, management triggers, and measures to protect the 2015 year class. The Board did not include the coastal commercial quota allocation issue for further consideration in the Draft Amendment. Many Board members acknowledge the concerns that were raised by states and the public but found it was not the right time to address allocation. The Board noted the Draft Amendment process is not the right time to address this because allocation discussions could make the process significantly longer and more complex. Some Board members suggested addressing quota allocation in a separate management document after Amendment 7 is complete. While waiting until after the Amendment process is complete would allow for the issue to be considered, the unknown timeline for when possible new allocations could be finalized was raised. In order to provide a management option that could provide some immediate relief to states that were seeking a change in commercial quota allocation, the Board initiated this addendum which proposes to allow for the voluntary transfer of commercial allocation of the coastal quota. Many quota-managed fisheries allow for the voluntary transfer of commercial allocations

between states (e.g., black sea bass, bluefish or horseshoe crab). This is a useful technique that can be utilized to address a variety of problems in the management of a commercial fishery (e.g., quota overages, safe harbor landings, shifting stock distributions).

2.2 Background

2.2.1 Status of the Stock

On a regular basis, female spawning stock biomass (SSB) and fishing mortality rate (F) are estimated and compared to target and threshold levels (i.e., biological reference points) in order to assess the status of the striped bass stock. The 1995 estimate of female SSB is currently used as the SSB threshold because many stock characteristics, such as an expanded age structure, were reached by this year, and this is also the year the stock was declared recovered. The female SSB target is equal to 125% female SSB threshold. The associated F threshold and target are calculated to achieve the respective SSB reference points in the long term.

In May 2019, the Board accepted the 2018 Benchmark Stock Assessment and Peer Review Report for management use. The accepted model is a forward projecting statistical catch-at-age model, which uses catch-at-age data and fishery-dependent data and fishery-independent survey indices to estimate annual population size, fishing mortality, and recruitment. The assessment indicated the resource is overfished and experiencing overfishing relative to the updated reference points. Female SSB in the terminal year (2017) was estimated at 151 million pounds, which is below the SSB threshold of 202 million pounds. F in 2017 was estimated at 0.31, which is above the F threshold of 0.24.

The assessment also indicated a period of strong recruitment (numbers of age-1 fish entering the population) from 1994-2004, following by a period of low recruitment from 2005-2011 which likely contributed to the decline in SSB in recent years. Recruitment was high in 2012, 2015, and 2016. In 2017, recruitment was estimated at 108.8 million age-1 fish which is below the time series average of 140.9 million fish.

2.2.2 History of the Fishery Management Plan

The first Interstate FMP for Atlantic Striped Bass was approved in 1981 in response to declining juvenile recruitment and landings occurring along the coast from Maine through North Carolina. The FMP and subsequent amendments and addenda focused on addressing the depleted spawning stock and recruitment failure. Despite these management efforts, the Atlantic striped bass stock continued to decline prompting many states (beginning with Maryland in 1985) to impose a complete harvest moratorium for several years. State fisheries reopened in 1990 under Amendment 4 which aimed to rebuild the resource rather than maximize yield. The stock was ultimately declared rebuilt in 1995 and as a result, Amendment 5 to the Atlantic Striped Bass FMP was adopted which relaxed both recreational and commercial regulations along the coast.

The Atlantic striped bass stock is currently managed under Amendment 6 and its subsequent addenda. The most recent, Addendum VI, set measures to end overfishing, and bring *F* to the target level in 2020. Specifically, the Addendum reduces all state commercial quotas by 18%, and implements a 1-fish bag limit and a 28” to less than 35” recreational slot limit for ocean fisheries and a 1-fish bag limit and

an 18" minimum size limit for Chesapeake Bay recreational fisheries. The measures are designed to achieve at least an 18% reduction in total removals at the coastwide level. The Addendum maintains flexibility for states to pursue alternative regulations through conservation equivalency (CE). Since catch and release practices contribute significantly to overall fishing mortality, the Addendum mandates the use of circle hooks when recreationally fishing with bait to reduce release mortality in recreational striped bass fisheries. Outreach and education will be a necessary element to garner support and compliance with this important conservation measure.

The U.S. Exclusive Economic Zone (EEZ; 3-200 miles from shore) has been closed to the harvest, possession, and targeting of striped bass since 1990, with the exception of a defined route to and from Block Island in Rhode Island to allow for the transit of vessels in possession of striped bass legally harvested in adjacent state waters. A recommendation was made in Amendment 6 to re-open federal waters to commercial and recreational fisheries. However, NOAA Fisheries concluded opening the EEZ to striped bass fishing was not warranted at that time. Following the completion of the 2018 benchmark stock assessment, NOAA Fisheries, in consultation with the Commission, is directed to review the federal moratorium on Atlantic striped bass, and to consider lifting the ban on striped bass fishing in the Federal Block Island Transit Zone (Consolidated Appropriations Act, 2018).

The Board previously considered commercial quota transfers in the FMP through Draft Amendment 5 for public comment and Draft Addendum IV to Amendment 6 for public comment. The Board did not approve the use of transfers in Amendment 5 in order to focus efforts on rebuilding the stock. The Technical Committee raised concerns that transfers had the potential to increase harvest at a time when harvest reductions were needed which contributed to the Board not approving transfers under Addendum IV to Amendment 6.

2.2.3 Status of the Fishery

In 2020, total Atlantic striped bass removals (commercial and recreational, including harvest, commercial discards and recreational release mortality) was estimated at 5.1 million fish, which is a 7% decrease relative to 2019 (Table 4). The recreational sector accounted for 87% of total removals by number.

Commercial Fishery Status

The commercial fishery is managed via a quota system resulting in relatively stable landings since 2004 (refer to Table 5 for a summary of striped bass regulations by state in 2020). There are two regional quotas: one for Chesapeake Bay and one for the ocean region (Maine through North Carolina, excluding Pennsylvania). The ocean region quota is based on average landings during the 1970s and the Chesapeake Bay quota changed annually under a harvest control rule until implementation of a static quota in 2015 through Addendum IV.

Coastal Commercial Quota

In 2020, the ocean commercial quota was 2,411,154 pounds and was not exceeded. Table 1 contains final 2020 quotas per Addendum VI and approved conservation equivalency programs and harvest that occurred in 2020.

Chesapeake Bay Commercial Quota

In 2020, the Chesapeake Bay-wide quota was 2,998,374 pounds and was allocated to Maryland, the Potomac River Fisheries Commission (PRFC), and Virginia based on historical harvest. In 2020, the Bay-wide quota was not exceeded. Table 1 contains jurisdiction-specific quotas and harvest that occurred in 2020 for Chesapeake Bay. In 2020, commercial harvest from Chesapeake Bay accounted for 64% of total commercial landings by weight, and averaged 61% annually under Addendum IV (2015-2019).

Commercial Fishery Landings

From 2004 to 2014, coastwide commercial harvest averaged 6.8 million pounds (942,922 fish) annually (Table 2). From 2015-2019, commercial landings decreased to an average of 4.7 million pounds (619,716 fish) due to implementation of Addendum IV and a reduction in the commercial quota. Commercial landings in 2020 were estimated at 3.6 million pounds (577,363 fish). Commercial discards are estimated to account for <2% of total removals per year since 2003 (Table 4). In 2019, commercial removals (landings plus commercial discards) accounted for 13.5% of total removals (commercial plus recreational) in numbers of fish, and 12.6% of total removals in 2020.

The commercial fishery harvested 3.73 million pounds (577,363 fish) in 2020, which is a 17% decrease by weight relative to 2019 (12% decrease by number; Table 2). This decrease aligns with the 18% reduction in commercial quotas implemented through Addendum VI in 2020, although some states implemented a different level of reduction in their commercial quotas through approved state conservation equivalency plans. The ocean quota utilization was about the same in 2020 (53%) as in 2019 (51%), while the Chesapeake Bay quota utilization decreased to 76% in 2020 from 91% in 2019. Despite the coastwide decrease in commercial harvest, ocean fishery conditions for some states may have improved from 2019 to 2020, which could be attributed to the increased availability of year classes moving through certain areas. The impacts of COVID-19 on the striped bass commercial fishery likely varied among states and varied depending on timing within the season. Some states heard from industry that restaurant closures and low prices had negative impacts on the commercial season, particularly during the early part of the pandemic.

Maryland (38%), Virginia (19%), and NY (13%) accounted for the three highest proportions of the commercial harvest (by weight) in 2020 (Table 3; Figure 1). Additional harvest came from PRFC (11%), Massachusetts (11%), Delaware (4%), and Rhode Island (3%). Commercial harvest from Chesapeake Bay accounted for 64% of the total commercial harvest by weight. The proportion of commercial harvest coming from Chesapeake Bay is much higher in numbers of fish (84% in 2020) than by weight because fish harvested in Chesapeake Bay have a lower average weight than fish harvested in ocean fisheries (Table 6). Coastwide commercial dead discards were estimated at 65,319[1] fish, which accounts for <2% of total removals in 2020 (Table 4).

The ocean region regularly underutilizes its quota allocations due to lack of availability in state waters (particularly off of North Carolina) and because commercial fishing is not allowed in some states (Maine, New Hampshire, Connecticut and New Jersey which collectively share about 10% of the ocean

[1] Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

commercial quota). Furthermore, the underage has increased in recent years since migratory striped bass have not been available to the ocean fishery in North Carolina resulting in zero harvest since 2012 (North Carolina holds 13% of the ocean quota) and raising questions about altered migratory pathways or preferred foraging areas as a result of climate change.

Recreational Fishery Status

For details on the most recent recreational fishery status see the Review for the Fishery Management Plan for Striped Bass: Fishing Year 2020.

3.0 Proposed Management Program

3.1 State-to-State Commercial Quota Transfers of the Coastal Commercial Quota

Option A: Status quo, no commercial quota transfers are permitted.

Option B: Commercial quota transfer provision of the coastal commercial quota.

Transfers between states may occur upon agreement of two states at any time during the fishing season up to 45 days after the last day of the calendar year. All transfers require a donor state (state giving quota) and a receiving state (state accepting additional quota). There is no limit on the amount of quota that can be transferred by this mechanism, and the terms and conditions of the transfer are to be identified solely by the parties involved in the transfer. The Administrative Commissioner of the agencies involved (giving and receiving state) must submit a signed letter to the Commission identifying the involved states, species, and pounds of quota to be transferred between the parties. A transfer becomes effective upon receipt of a letter from Commission staff to the donor and receiving states, and does not require the approval by the Board. All transfers are final upon receipt of the signed letters by the Commission. In the event that the donor or receiving state of a transaction subsequently wishes to change the amount or details of the transaction, both parties have to agree to the change, and submit to the Commission signed letters from the Administrative Commissioner of the agencies involved. These transfers do not permanently affect the state-specific shares of the quota (i.e., the state-specific quotas remain fixed).

Once quota has been transferred to a state, the state receiving quota becomes responsible for any overages of transferred quota. That is, the amount over the final quota (that state's quota plus any quota transferred to that state) for a state will be deducted from the corresponding state's quota the following fishing season.

4.0 Compliance Schedule

To be in compliance with Addendum VII to Amendment 6 to the Atlantic Striped Bass Interstate FMP, states must implement Addendum VII:

Compliance Schedule to be determined by the Board.

5.0 Tables and Figures

Table 1. Results of 2020 commercial quota accounting in pounds. Source: 2021 state compliance reports. 2020 quota was based on Addendum VI and approved conservation equivalency programs.

State	Add VI (base)	2020 Quota^	2020 Harvest	Overage
Ocean				
Maine*	154	154	-	-
New Hampshire*	3,537	3,537	-	-
Massachusetts	713,247	735,240	386,924	0
Rhode Island	148,889	148,889	115,891	0
Connecticut*	14,607	14,607	-	-
New York	652,552	640,718	473,461	0
New Jersey**	197,877	215,912	-	-
Delaware	118,970	142,474	137,986	0
Maryland	74,396	89,094	83,594	0
Virginia	113,685	125,034	77,239	0
North Carolina	295,495	295,495	0	0
Ocean Total	**2,333,409**	**2,411,154**	**1,275,095**	**0**
Chesapeake Bay				
Maryland	**2,588,603**	1,442,120	1,273,757	0
Virginia		983,393	611,745	0
PRFC		572,861	400,319	0
Bay Total		**2,998,374**	**2,285,821**	**0**

* Commercial harvest/sale prohibited, with no re-allocation of quota.

** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.

^ 2020 quota changed through conservation equivalency for MA (735,240 lbs), NY (640,718 lbs), NJ (215,912 lbs), DE (142,474 lbs), MD (ocean: 89,094 lbs; bay: 1,445,394 lbs), PRFC (572,861 lbs), VA (ocean: 125,034 lbs; bay: 983,393 lbs).

Note: Maryland's Chesapeake Bay quota for 2020 was adjusted to account for the overage in 2019.

Table 2. Total harvest of Atlantic striped bass by sector, 1990-2020. Note: Harvest is from state compliance reports/MRIP (Query July 8, 2021). Estimates exclude inshore harvest from North Carolina.

Year	Numbers of Fish			Pounds		
	Commercial	Recreational	Total	Commercial	Recreational	Total
1990	93,888	578,897	672,785	715,902	8,207,515	8,923,417
1991	158,491	798,260	956,751	966,096	10,640,601	11,606,697
1992	256,476	869,779	1,126,255	1,508,064	11,921,967	13,430,031
1993	314,526	789,037	1,103,563	1,800,176	10,163,767	11,963,943
1994	325,401	1,055,523	1,380,924	1,877,197	14,737,911	16,615,108
1995	537,412	2,287,578	2,824,990	3,775,586	27,072,321	30,847,907
1996	854,102	2,487,422	3,341,524	4,822,874	28,625,685	33,448,559
1997	1,076,591	2,774,981	3,851,572	6,078,566	30,616,093	36,694,659
1998	1,215,219	2,915,390	4,130,609	6,552,111	29,603,199	36,155,310
1999	1,223,572	3,123,496	4,347,068	6,474,290	33,564,988	40,039,278
2000	1,216,812	3,802,477	5,019,289	6,719,521	34,050,817	40,770,338
2001	931,412	4,052,474	4,983,886	6,266,769	39,263,154	45,529,923
2002	928,085	4,005,084	4,933,169	6,138,180	41,840,025	47,978,205
2003	854,326	4,781,402	5,635,728	6,750,491	54,091,836	60,842,327
2004	879,768	4,553,027	5,432,795	7,317,897	53,031,074	60,348,971
2005	970,403	4,480,802	5,451,205	7,121,492	57,421,174	64,542,666
2006	1,047,648	4,883,961	5,931,609	6,568,970	50,674,431	57,243,401
2007	1,015,114	3,944,679	4,959,793	7,047,179	42,823,614	49,870,793
2008	1,027,837	4,381,186	5,409,023	7,190,701	56,665,318	63,856,019
2009	1,049,838	4,700,222	5,750,060	7,217,380	54,411,389	61,628,769
2010	1,031,430	5,388,440	6,419,870	6,996,713	61,431,360	68,428,073
2011	944,777	5,006,358	5,951,135	6,789,792	59,592,092	66,381,884
2012	870,684	4,046,299	4,916,983	6,516,761	53,256,619	59,773,380
2013	784,379	5,157,760	5,942,139	5,819,678	65,057,289	70,876,967
2014	750,263	4,033,746	4,784,009	5,937,949	47,948,610	53,886,559
2015	621,952	3,085,725	3,707,677	4,829,997	39,898,799	44,728,796
2016	609,028	3,500,434	4,109,462	4,848,772	43,671,532	48,520,304
2017	592,670	2,937,911	3,530,581	4,816,395	37,952,581	42,768,976
2018	621,123	2,244,765	2,865,888	4,741,342	23,069,028	27,810,370
2019	653,807	2,150,936	2,804,743	4,284,831	23,556,287	27,841,118
2020	577,363	1,709,973	2,287,336	3,560,917	14,858,984	18,419,901

Table 3. Commercial harvest by region in pounds (x1000), 1995-2020. Source: state compliance reports. ^Estimates exclude inshore harvest.

Year	Ocean								Chesapeake Bay				Grand Total
	MA	RI	NY	DE	MD	VA	NC^	Total	MD	PRFC	VA	Total	
1995	751.5	113.5	500.8	38.5	79.3	46.2	344.6	1,874.3	1,185.0	198.5	517.8	1,901.3	3,775.6
1996	695.9	122.6	504.4	120.5	75.7	165.9	58.2	1,743.2	1,487.7	346.8	1,245.2	3,079.7	4,822.9
1997	784.9	96.5	460.8	166.0	94.0	179.1	463.1	2,244.4	2,119.2	731.9	983.0	3,834.2	6,078.6
1998	810.1	94.7	485.9	163.7	84.6	375.0	273.0	2,287.0	2,426.7	726.2	1,112.2	4,265.1	6,552.1
1999	766.2	119.7	491.8	176.3	62.6	614.8	391.5	2,622.9	2,274.8	653.3	923.4	3,851.4	6,474.3
2000	796.2	111.8	542.7	145.1	149.7	932.7	162.4	2,840.5	2,261.8	666.0	951.2	3,879.0	6,719.5
2001	815.4	129.7	633.1	198.6	113.9	782.4	381.1	3,054.1	1,660.9	658.7	893.1	3,212.6	6,266.8
2002	924.9	129.2	518.6	146.2	93.2	710.2	441.0	2,963.2	1,759.4	521.0	894.4	3,174.9	6,138.2
2003	1,055.5	190.2	753.3	191.2	103.9	166.4	201.2	2,661.7	1,721.8	676.6	1,690.4	4,088.7	6,750.5
2004	1,214.2	215.1	741.7	176.5	134.2	161.3	605.4	3,248.3	1,790.3	772.3	1,507.0	4,069.6	7,317.9
2005	1,102.2	215.6	689.8	174.0	46.9	185.2	604.5	3,018.2	2,008.7	533.6	1,561.0	4,103.3	7,121.5
2006	1,322.3	5.1	688.4	184.2	91.1	195.0	74.2	2,560.2	2,116.3	673.5	1,219.0	4,008.7	6,569.0
2007	1,039.3	240.6	731.5	188.7	96.3	162.3	379.5	2,838.1	2,240.6	599.3	1,369.2	4,209.1	7,047.2
2008	1,160.3	245.9	653.1	188.7	118.0	163.1	288.4	2,817.6	2,208.0	613.8	1,551.3	4,373.1	7,190.7
2009	1,134.3	234.8	789.9	192.3	127.3	140.4	190.0	2,809.0	2,267.3	727.8	1,413.3	4,408.4	7,217.4
2010	1,224.5	248.9	786.8	185.4	44.8	127.8	276.4	2,894.7	2,105.8	683.2	1,313.0	4,102.0	6,996.7
2011	1,163.9	228.2	855.3	188.6	21.4	158.8	246.4	2,862.5	1,955.1	694.2	1,278.1	3,927.3	6,789.8
2012	1,218.5	239.9	683.8	194.3	77.6	170.8	7.3	2,592.0	1,851.4	733.7	1,339.6	3,924.7	6,516.8
2013	1,004.5	231.3	823.8	191.4	93.5	182.4	0.0	2,526.9	1,662.2	623.8	1,006.8	3,292.8	5,819.7
2014	1,138.5	216.9	531.5	167.9	120.9	183.7	0.0	2,359.4	1,805.7	603.4	1,169.4	3,578.5	5,937.9
2015	866.0	188.3	516.3	144.1	34.6	138.1	0.0	1,887.5	1,436.9	538.0	967.6	2,942.5	4,830.0
2016	938.7	174.7	575.0	136.5	19.7	139.2	0.0	1,983.9	1,425.5	537.1	902.3	2,864.9	4,848.8
2017	823.4	175.3	701.2	141.8	80.5	133.9	0.0	2,056.1	1,439.8	492.7	827.8	2,760.3	4,816.4
2018	753.7	176.6	617.2	155.0	79.8	134.2	0.0	1,916.6	1,424.3	449.4	951.0	2,824.7	4,741.3
2019	584.7	144.2	358.9	132.6	82.8	138.0	0.0	1,441.2	1,475.2	417.3	951.1	2,843.6	4,284.8
2020[+]	386.9	115.9	473.5	138.0	83.6	77.2	0.0	1,275.1	1,273.8	400.3	611.7	2,285.8	3,560.9

Table 4. Total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1990-2020. Note: Harvest is from state compliance reports/MRIP (July 8, 2021), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina.

Year	Commercial		Recreational		Total Removals
	Harvest	Discards*	Harvest	Release Mortality	
1990	93,888	47,859	578,897	442,811	1,163,455
1991	158,491	92,480	798,260	715,478	1,764,709
1992	256,476	193,281	869,779	937,611	2,257,147
1993	314,526	115,859	789,037	812,404	2,031,826
1994	325,401	166,105	1,055,523	1,360,872	2,907,900
1995	537,412	188,507	2,287,578	2,010,689	5,024,186
1996	854,102	257,749	2,487,422	2,600,526	6,199,800
1997	1,076,591	325,998	2,774,981	2,969,781	7,147,351
1998	1,215,219	347,343	2,915,390	3,259,133	7,737,085
1999	1,223,572	337,036	3,123,496	3,140,905	7,825,008
2000	1,216,812	209,329	3,802,477	3,044,203	8,272,820
2001	931,412	182,606	4,052,474	2,449,599	7,616,091
2002	928,085	199,770	4,005,084	2,792,200	7,925,139
2003	854,326	131,319	4,781,402	2,848,445	8,615,492
2004	879,768	157,724	4,553,027	3,665,234	9,255,753
2005	970,403	146,126	4,480,802	3,441,928	9,039,259
2006	1,047,648	158,808	4,883,961	4,812,332	10,902,750
2007	1,015,114	160,728	3,944,679	2,944,253	8,064,774
2008	1,027,837	106,791	4,381,186	2,391,200	7,907,013
2009	1,049,838	130,200	4,700,222	1,942,061	7,822,321
2010	1,031,430	134,817	5,388,440	1,760,759	8,315,446
2011	944,777	85,503	5,006,358	1,482,029	7,518,667
2012	870,684	198,911	4,046,299	1,847,880	6,963,774
2013	784,379	114,009	5,157,760	2,393,425	8,449,573
2014	750,263	111,753	4,033,746	2,172,342	7,068,103
2015	621,952	84,463	3,085,725	2,307,133	6,099,273
2016	609,028	88,171	3,500,434	2,981,430	7,179,063
2017	592,670	98,343	2,937,911	3,421,110	7,050,035
2018	621,123	100,646	2,244,765	2,826,667	5,793,201
2019	653,807	84,013	2,150,936	2,589,045	5,477,801
2020	577,363	65,319	1,709,973	2,760,231	5,112,886

* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

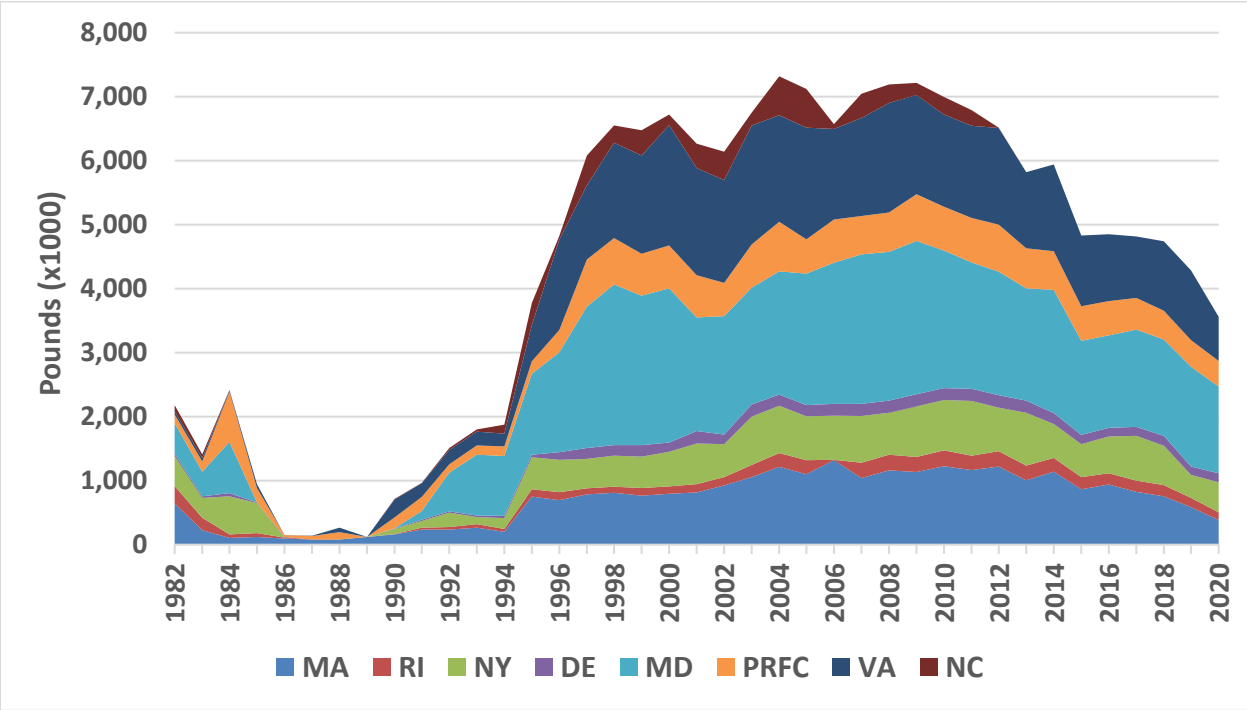
Table 5. Summary of Atlantic striped bass commercial regulations in 2020. Source: 2021 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
ME	Commercial fishing prohibited		
NH	Commercial fishing prohibited		
MA	≥35" minimum size; no gaffing undersized fish. 15 fish/day with commercial boat permit; 2 fish/day with rod and reel permit.	735,240 lbs. Hook & Line only.	6.24 until quota reached, Mondays and Wednesdays only. (In-season adjustment added Tuesdays effective Sept 1.) July 3rd, July 4th and Labor Day closed. Cape Cod Canal closed to commercial striped bass fishing.
RI	Floating fish trap: 26" minimum size unlimited possession limit until 70% of quota reached, then 500 lbs. per licensee per day	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	4.1 – 12.31
	General category (mostly rod & reel): 34" min. 5 fish/vessel/day limit.		5.20-6.30, 7.1-12.31, or until quota reached. Closed Fridays, Saturdays, and Sundays during both seasons.
CT	Commercial fishing prohibited; bonus program in CT suspended indefinitely in 2020.		
NY	26"-38" size; (Hudson River closed to commercial harvest)	640,718 lbs. Pound Nets, Gill Nets (6-8"stretched mesh), Hook & Line.	6.1 – 12.15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: 1 fish at 24" to <28" slot size	215,912 lbs.	5.15 – 12.31 (permit required)
PA	Commercial fishing prohibited		

(Table 5 continued – Summary of commercial regulations in 2020).

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
DE	Gill Net: 20" min in DE Bay/River during spring season. 28" in all other waters/seasons.	Gillnet: 135,350 lbs. No fixed nets in DE River.	Gillnet: 2.15-5.31 (2.15-3.30 for Nanticoke River) & 11.15-12.31; drift nets only 2.15-28 & 5.1-31; no trip limit.
	Hook and Line: 28" min	Hook and line: 7,124 lbs.	Hook and Line: 4.1–12.31, 200 lbs./day trip limit
MD	Chesapeake Bay and Rivers: 18–36" Common pool trip limits: Hook and Line - 250 lbs./license/week Gill Net - 300 lbs./license/week	1,445,394 lbs. (part of Bay-wide quota) – Initial quota 1,442,120 lbs. – Adjusted quota due to 2019 overage	Bay Pound Net: 6.1-12.31 Bay Haul Seine: 6.1-12.31 Bay Hook & Line: 6.4-12.31 Bay Drift Gill Net: 1.1-2.28, 12.1-12.31
	Ocean: 24" minimum	Ocean: 89,094 lbs.	1.1-5.31, 10.1-12.31
PRFC	18" min all year; 36" max 2.15–3.25	572,861 lbs. (part of Bay-wide quota)	Hook & Line: 1.1-3.25, 6.1-12.31 Pound Net & Other: 2.15-3.25, 6.1-12.15 Gill Net: 1.1-3.25, 11.9-12.31 Misc. Gear: 2.15-3.25, 6.1-12.15
VA	Bay and Rivers: 18" min; 28" max size limit 3.15–6.15	983,393 lbs. (part of Bay-wide quota)	1.16-12.31
	Ocean: 28" min	125,034 lbs.	
NC	Ocean: 28" min	295,495 lbs. (split between gear types).	Seine fishery was not opened Gill net fishery was not opened Trawl fishery was not opened

Figure 1. Commercial Atlantic striped bass landings by state in pounds, 1990-2020. Source: State compliance reports. Commercial harvest and sale prohibited in ME, NH, CT, and NJ. NC is ocean only.



Atlantic States Marine Fisheries Commission

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

MEMORANDUM

TO: **Atlantic Striped Bass Management Board**

FROM: **Atlantic Striped Bass Plan Development Team**

DATE: **October 12, 2021**

SUBJECT: **Draft Addendum VII to Amendment 6**

At the direction of the Atlantic Striped Bass Management Board (Board), the Plan Development Team (PDT) drafted an addendum that considers options to allow for the voluntary transfer of the ocean region commercial quota between states that have ocean quota[1]. However, the PDT has significant concerns with adding ocean region commercial transfers to the fishery management program at this time. If the Board moves forward with public comment of Draft Addendum VII, it is recommended the below concerns are added to the Draft Addendum. The PDT notes these concerns were previously raised by the Technical Committee (TC) in 2014 when transfers were considered in Draft Addendum IV.

First, the PDT is concerned quota transfer could undermine the goals and objectives of the reductions taken under Addendum VI. The commercial ocean fishery has consistently underutilized quotas, due to a combination of fish availability and state-specific regulations (e.g. commercial prohibitions). Both Addenda IV and VI were designed to achieve a specific reduction in total removals through more restrictive recreational measures and reduced commercial quotas in order to achieve the fishing mortality target. During the Addendum VI process, the TC noted the reduction in commercial quota would achieve the necessary reduction in commercial removals only if the commercial fisheries perform as they have in the past, i.e., if they continue to underutilize their quotas to the same degree. This assumption would be violated if the transfer of commercial ocean region quota is permitted. If Addendum VI commercial quotas were fully utilized by allowing the transfer of latent quota, commercial harvest would be higher than estimated in the Addendum VI projections and states would not maintain the required commercial reduction, thus potentially undermining the goals and objectives of Addendum VI to end overfishing.

Second, a pound of commercial quota is not equal across all states. Through conservation equivalency (CE), states have been able to adjust their commercial size limits, which result in changes to their respective commercial quotas. For example, when implementing Addendum VI, Massachusetts increased its commercial minimum size limit, which increased its quota, and New York lowered its commercial slot limit minimum, which decreased its quota; both of these CE programs are based on a spawner-per-recruit analysis (SPR). Changes in state quota through CE have been occurring since before Addendum VI. Over time several adjustments have been made to commercial size limits resulting in changes to commercial quotas, making transferring quota between states with different size limits difficult. Since the PDT's focus has been on Draft Amendment 7, it has not had the time to consider all of the changes made to base quota allocations that have resulted from adjusting commercial size limits. Given more time, it might be able to address this concern.

[1] The Draft Addendum does not address potential transfers of the Chesapeake Bay quota among the Bay jurisdictions as the FMP does not establish the allocations of the Chesapeake Bay quota, rather Maryland, Virginia, and the Potomac River Fisheries Commission do so per the jurisdictions' mutual agreement. Additionally, the Draft Addendum does not consider allowing transfer of Chesapeake Bay quota to an ocean fishery (or vice versa) due to the distinct management programs between the areas (e.g., size limit differences).

Atlantic States Marine Fisheries Commission

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MEMORANDUM

April 15, 2022

To: **Atlantic Striped Bass Management Board**

From: **Tina Berger, Director of Communications**

RE: **Advisory Panel Nomination**

Please find attached a nomination to the Atlantic Striped Bass Advisory Panel – Jaime Lane, an estuarine and ocean gillnetter from North Carolina. Jaime replace Riley Williams on the Panel. While the question regarding criminal or federal fisheries violations was not checked on the AP nomination, NC Marine Patrol staff confirmed that Jaime has no fisheries violations.

Please review this nomination for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Emilie Franke

Atlantic Striped Bass Advisory Panel

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Phone (c): (207) 841-1444
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Appt. Confirmed 5/23/02
Appt Reconfirmed 5/10

Bob Humphrey (comm. rod and reel/for-hire)
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Phone (eve): 207.688.4854
bob@bobhumphrey.com
Appt. Confirmed 2/18/20

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Appt Reconfirmed 5/10

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sashamysportfishing@gmail.com
Appt. Confirmed 3/23/11
Appt. Reconfirmed 8/18

Patrick Paquette (rec/for-hire/comm)
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Appt. Confirmed 8/16

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Appt. Confirmed 2/3/21

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Appt. Confirmed 2/3/21

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Vacancy (rec)

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Bob Danielson (rec)
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Vacancy (comm)

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Appt. Confirmed 10/15/01
Appt. Reconfirmed 2/9/06; 5/17/10; 4/14/14

Atlantic Striped Bass Advisory Panel

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Appt. Confirmed 11/5/21

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Vacancy (rec)

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Appt. Confirmed 4/21/94
Appt. Reconfirmed 7/27/99; 7/03 and 7/07

Steven Smith (rec)
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Appt. Confirmed 8/3/21

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Appt. Confirmed 8/3/21

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Appt Reconfirmed 5/06 and 5/10

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Appt Confirmed 5/5/21

Jamie Lane (estuarine and ocean gill net fisheries)
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Appt. Reconfirmed 9/15/99; 9/03 and 9/07

Potomac Fisheries River Comm.
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Atlantic Striped Bass Advisory Panel

captaindennisf@gmail.com
Appt. Confirmed 2/3/21

ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (**All** Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Chris Batsavage (your name) State: NC

Name of Nominee: Jamie Lane

Address: 602 S Main Street

City, State, Zip: Robersonville, NC 27871

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 252-312-6832 Phone (evening): _____

FAX: _____ Email: jlwinsl3@ncsu.edu

. . . . . .

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
   1. Striped Bass
   2. _____
   3. _____
   4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

   yes_____ no_____

3. Is the nominee a member of any fishermen's organizations or clubs?

   yes _____ no X

   If "yes," please list them below by name.

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

American Shad and Hickory Shad
Striped Bass
Catfish
Sea Mullet and Spanish Mackerel
Spot and Croaker
Flounder

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

all of the above plus:
Blue Crab

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? > 13 years
2. Is the nominee employed only in commercial fishing? yes_____ no X
3. What is the predominant gear type used by the nominee? Gill Nets
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? inshore in rivers and sounds and in the ocean out to 3 miles

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____ years
2. Is the nominee employed only in the charter/headboat industry? yes _____ no_____

   If "no," please list other type(s)of business(es) and/occupation(s):_____

3. How many years has the nominee lived in the home port community? _____ years

   If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years

2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no _____

   If "yes," please explain.

_____

_____

_____

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____years

2. Is the nominee employed only in the business of seafood processing/dealing?

   yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

_____

3. How many years has the nominee lived in the home port community? _____ years

   If less than five years, please indicate the nominee's previous home port community.

_____

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years

2. Is the nominee employed in the fishing business or the field of fisheries management? yes _____ no _____

   If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

_____

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

While in college I began working on a commercial fishing vessel as a second part-time job in the summertime while I was home from school. I grew up about 20 minutes from the Albemarle Sound and Chowan River so it was a convenient way for me to get into an industry where I could merge making money with my love of being outdoors, my passion for science and also remain physically active in a challenging work environment. As I finished my degree I became more involved in commercial fishing and obtained a Standard Commercial Fishing License and a vessel. I then started procuring gear and ultimately learned to hang my own nets to save money. Over the years since that time, I have continued to participate in commercial fishing and have sought ways to diversify the types of fish I target, the gears that I use, and the areas I fish in. This has been done out of both financial need and to navigate the changing and tightening regulations. As part of that diversification process, I have also begun to participate in advisory panels/councils such as the NC DMF's Northern Region Advisory Panel and the MAFMC's River Herring and Shad Advisory Panel. I also submit public comments or participate in forums at times when the NC Marine Fisheries Commission is meeting and a topic of concern to me is on the table. I am applying for the ASMFC Advisory Committee for Striped Bass at this time because if I can have a positive impact on the regulatory changes made to the Striped Bass Fishery and how it impacts both myself and the commercial fishermen in my geographic area, I would like partake in that opportunity.

Nominee Signature: Jamie W. Lane Date: 03/02/2022

Name: Jamie Lane
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

Chris Batsavage
State Director

State Legislator

Governor's Appointee