Atlantic States Marine Fisheries Commission

Atlantic Striped Bass Management Board

December 16, 2024
10:00 a.m. – 2:00 p.m.

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. A 30-minute lunch break is anticipated around 12:00 p.m.

1.	Welcome/Call to Order *(M. Ware)*	10:00 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from October 2024	10:00 a.m.
3.	Public Comment	10:05 a.m.
4.	Consider Management Response to Stock Projections **Possible Final Action** • Technical Committee Report on Updated Stock Projections and 2025 Management Considerations *(T. Grabowski)* • Review Public Comment Summary *(E. Franke)* • Consider Management Response **Possible Final Action**	10:15 a.m.
5.	Other Business/Adjourn	2:00 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
December 16, 2024
10:00 a.m. – 2:00 p.m.

Chair: Megan Ware (ME) Assumed Chairmanship: 1/24	Technical Committee Chair: Tyler Grabowski (PA)	Law Enforcement Committee Rep: Sgt. Jeff Mercer (RI)
Vice Chair: Chris Batsavage (NC)	Advisory Panel Chair: Vacant	Previous Board Meeting: October 23, 2024
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 October 2024

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. Consider Management Response to Stock Projections (10:15 a.m.-2:00 p.m.) Possible Final Action

Background

- After receiving the 2024 Stock Assessment Update Report, the Board tasked the Technical Committee (TC) with updating stock projections based on additional 2024 catch data and developing 2025 management options for consideration.
- The TC and Stock Assessment Subcommittee (SAS) met on November 13 to address these tasks **(Briefing Materials).**
- The Advisory Panel reviewed the TC-SAS report on December 9 **(Supplemental Materials).**
- Public comments were submitted with a deadline of December 10.

Presentations

- Technical Committee and Stock Assessment Subcommittee Report on Updated Stock Projections and 2025 Management Considerations by T. Grabowski
- Overview of public comment summary by E. Franke

Board action for consideration at this meeting

- Consider management response: 1. Possible approval of measures for 2025 and beyond and/or 2. Possible initiation of an addendum for 2026 and beyond measures

A 30-minute lunch break is anticipated around 12:00 p.m.

5. Other Business/Adjourn (2:00 p.m.)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC STRIPED BASS MANAGEMENT BOARD

The Westin
Annapolis, Maryland
Hybrid Meeting

October 23, 2024

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

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INDEX OF MOTIONS

Motion to Amend
Motion to amend to change "commercial quotas" to "commercial measures." (Page 63). Motion made by John Clark; second by David Sikorski. Motion fails for lack of majority (8 in favor, 8 opposed) (Page 65).

Main Motion
Motion to schedule a special Striped Bass Management Board meeting in December 2024 to consider Board Action in response to the 2024 Stock Assessment Update. The Board will consider action to revise the 2024 recreational seasons and/or size limits and 2024 commercial quotas to achieve a 50 percent probability of rebuilding by 2029 under the "low 2024 removals with F increase in 2025 only" projection. Motion made by Nichola Meserve; second by Marty Gary. Motion passes (14 in favor, 1 opposed, 1 null) (Page 66).

4. **Move to adjourn** by consent (Page 74).

ATTENDANCE

Board Members

Rep. Allison Hepler, ME (LA)
Steve Train, ME, (GA)
Cheri Patterson, NH (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Doug Grout, NH (GA)
Nichola Meserve, MA, proxy for D. McKiernan (AA)
Rep. Jennifer Armini, MA (LA)
Ray Kane, MA (GA)
Jason McNamee, RI (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
David Borden, RI (GA)
Dr. Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Marty Gary, NY (AA)
Jim Gilmore, NY, proxy for Sen. Thiele (LA)
Emerson Hasbrouck, NY (GA)
Joe Cimino, NJ (AA)
Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)
Jeff Kaelin, NJ (GA)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Loren Lustig (GA)
John Clark, DE (AA)
Roy Miller, DE (GA)
Michael Luisi, MD, proxy for L. Fegley (AA)
David Sikorski, MD, proxy for Del. Stein (LA)
Robert Brown, MD, proxy for R. Dize (GA)
Pat Geer, VA, proxy for J. Green (AA)
James Minor, VA, (GA)
Chris Batsavage, NC, proxy for K. Rawls (AA)
Chad Thomas, NC, proxy for Rep. Wray (LA)
Jerry Mannen, NC (GA)
Ron Owens, PRFC
Daniel Ryan (DC)
Rick Jacobson (USFWS)
Max Appelman (NMFS)

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

Ex-Officio Members

Tyler Grabowski, Technical Committee Chair
Gary Nelson, Stock Assessment Analyst
Mike Celestino, SAS Chair
Sgt. Jeff Mercer, Law Enforcement Committee Rep.

Staff

Bob Beal
Toni Kerns
Tina Berger
Madeline Musante
Caitlin Starks
Jeff Kipp
Tracy Bauer
James Boyle
Katie Drew
Jainita Patel
Emilie Franke
Chelsea Tuohy

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened in the Capitol Ballroom via hybrid meeting, in-person, and webinar; Wednesday, October 23, 2024, and was called to order at 1:31 p.m. by Chair Megan Ware.

CALL TO ORDER

CHAIR MEGAN WARE: Good afternoon, everyone. It is 1:31, so we are going to call the Striped Bass Board to order this afternoon.

APPROVAL OF AGENDA

CHAIR WARE: We're going to start with Approval of the Agenda. Are there any additions or modifications to the agenda, or other items under Other Business today? Doug Grout.

MR. DOUGLAS E. GROUT: Yes, Madam Chair, I would like to add something under Other Business related to stock assessments, striped bass stock assessments. Thank you.

CHAIR WARE: Thanks, Doug. Seeing no other hands, we are going to approve the agenda by consent**.**

APPROVAL OF PROCEEDINGS

CHAIR WARE: Moving to Approval of the Proceedings from our August 2024 meeting, we did have one minor correction from Chris Batsavage, so we've noted that. Are there any other additional edits to the proceedings from our last board meeting? Seeing none; that is approved by consent.

PUBLIC COMMENT

CHAIR WARE: We're now going to move into Public Comment. I just want to remind folks, this is for comments on items that are not on our agenda today, so if you're hoping to talk about the Release Mortality Work Group, a stock assessment or the Board's response to the stock assessment, I am going to ask you to hold those comments.

Just so folks know, I am going to go to the public for some questions on the assessment when we go through that presentation, and if there are any Board motions related to action today in response to that assessment, I will also go out to the public for comments on those motions. I'll look for a raise of hands in the room, and Toni will look on the webinar. We'll get a sense of how many folks want to comment, and then we'll divide the time amongst those folks.

Okay, so we have six people that have indicated they would like to comment. I'm going to ask folks to try and keep it to two minutes, we'll go a little over ten minutes, but I think that is warranted, given the topics we have today. We'll start in the room; I think there was someone on the far side here front row. Yes, come on up. The public comment microphone just for folks, is by Loren Lustig, if you want to raise your hand, Loren.

MS. TONI KERNS: If you did have your hand raised, if you could sort of queue up a little bit, so we don't waste too much time walking to and from the microphone that would be great.
CHAIR WARE: When you give your comment, if you could just state your name and affiliation that would be great, so thank you.

MR. JAY A. JACOBS: Good afternoon, Madam Chair, my name is Delegate Jay Jacobs, I represent District 36 in the state of Maryland. My comments today are really to let everyone in this room know just how devastated the charter boat industry has been affected this year. I think we predicted when some of these preliminary decisions were being talked about last year, that we thought it would be off as much as 75 percent, and I'm here to tell you that that is a reality number.

I don't know that it is going to recover. It was one thing with the one fish, but then when the slot size was added on top of that there were parties that were willing to look at it from the one fish perspective, but then when the slot was added they just canceled their business, and they've gone elsewhere.

I'm sure that adjoint states, New Jersey, et cetera, have picked up a lot of business, and it is going to be hard to attract anyone back to the state of Maryland, given the circumstances that we're facing right now. Hopefully, there will not be anything further that is going to put these guys out of business.

You know if they wanted to sell their boats they've lost a lot of value, they've lost a lot of business, and it takes a long, long time for anything to recover that has taken the nosedive that they have this year. Bear that in mind, please, with any decisions that you may be contemplating.

CHAIR WARE: Great, you have 15 more seconds if you want to use it, otherwise we will move on to the next speaker.

MR. JACOBS: Please bear in mind the families, their livelihoods, the businesses that have been affected by these decisions. Thank you.

CHAIR WARE: Thank you very much, Mr. Jacobs. Next in line, thank you. If you could state your name and affiliation that would be great.

MR. MIKE SMOLEK: Good afternoon, my name is Mike Smolek I am the President of the Upper Bay Charter Captains Association. Our membership is comprised of for-hire, six-pack and also inspected boats, who primarily fish the middle and upper Chesapeake Bay. Since the last meeting that was held in January, when the new regulations were passed, we've mandated one fish for the for-hire fleet.

The six-pack boats have been hit the hardest because their business is down 80 percent, and last count we know of at least 52 of these boats that are up for sale, and their businesses have closed. As the previous speaker has mentioned, a lot of these boats now, they are probably not worth nothing, because there is no demand for them. Additionally, this year, we also lost 15 days in the beginning of the season. Prior years we started the first of May, now we were told we had to start the 16th of May. We lost those 15 days along with the 15 days in July. Essentially, the for-hire fleet, we cannot ensure anymore closure dates. If we do, all of us might as well just go out of business. Additionally, from observations from myself and other captains down on the Bay, we've noticed that the recreational fishing effort is also down this year compared to prior years, because we don't see as many boats out on the Bay as we used to.

From some of the recreational guys that used to fish a lot that I've talked to, they reduced their effort, because the new slot size regulations passed in January, it's a narrow slot and they are not interested in going, pretty much. That is the end of my comments, thank you very much.

CHAIR WARE: Thank you very much. Next speaker please.

MR. MICHAEL WAINE: Thank you, Madam Chair, Mike Waine with the American Sportfishing Association. I know that the Board is going to discuss what to do about the adult spawning in the Chesapeake Bay, in terms of how to prepare for that in the fishery. But I wanted to come here at the beginning of this meeting to challenge this Board to get more involved in what is actually going on in the Chesapeake Bay.

We've had a lot of partners around this table specific to the region, both Maryland, Virginia, PRFC and DC, and then we also have federal partners, Fish and Wildlife and NOAA Fisheries. I'm just wondering if more efforts could be done to sort of collaborate on what are the underlying challenges that are based in the spawning area and can more be done beyond just fisheries management to help improve spawning conditions.

I was talking to some of the Commissioners last night, saying that there are developments being approved as we speak that will impact the Chesapeake Bay and its habitats. I think this Commission could do more and coordinate some efforts, to try to weigh in on some of those different

aspects that we know are going to have impacts to the spawning areas of this important resource.

We also have a very dedicated angling community that wants to comment on everything they can, involved in this fishery. I think it would be good to try to focus some of that effort on ways to help improve some of the underlying issues that we see in the Bay, whether it is blue cats, or whether it is some of the development that is going on that is clearly impacting this habitat.

I'm not saying that's in lieu of fishing and controlling fishing effort, but there is a lot of institutional knowledge around this table that I think can lend themselves to this conversation and helping guide some of the input on this important issue. Thank you, Madam Chair for giving me the opportunity to bring that up.

CHAIR WARE: Thanks, Mike. We had two more people stand up. I am going to allow that, then we'll go to the webinar comments, but just so everyone knows that is where we're going to end it for now on public comment, after these two and then the webinar. Go ahead and state your name and affiliation, please.

CAPTAIN JOSEPH SADLER: Thanks for allowing me to speak. My name is Captain Joseph Sadler, I'm fourth generation full time commercial waterman on the Bay, second-generation full-time charter captain. As Mike said earlier there, you know we've taken anywhere from a 30 to 70 percent hit. Myself I've taken about a 50 percent hit in charters this past summer, because of the closures that were forced upon us, we feel for no reason. No small business out there can sustain a 50 percent hit and stay in business. Our customers just aren't coming down, and we have worked years and spent thousands of dollars going to meetings and to seminars, trying to build our charter business up to what we've had. Now, all of a sudden, it's 50 to 70 percent off.

I don't know what can be done, but we just can't stand any more closures here. Please, everybody, keep that in mind. For full time charter captains and charter boats and watermen, you know many which are sitting around the room here. But if we just, please take everything into consideration, we're all small businesses and thank you very much.

CHAIR WARE: Thank you, Captain Sadler.
CAPTAIN ROBERT NEWBERRY: Madam Chair, members of the Commission, my name is Captain Robert Newberry, I'm Chairman of Delmarva Fisheries. You've heard here today basically what has happened to the charter industry by these regulations. I'm going to take a little different angle with it here.

This is all based upon different scientific facts that we have been presented with. But the one problem we have in the Chesapeake Bay that I think has been ignored by a lot of people, is the problem with the pollution that we have in the Bay. I've asked ASMFC and I've asked DNR that when they do their studies, does this factor in. The answer I get is no.

The past six years we've had low, you know stock assessment as far as the young of the year goes. Correlating with that, when these fish are spawning, we have the Conowingo Dam. The past six years, pre-spawn, post-spawn and during the gestation period, we've had major discharges from the Conowingo of 250,000 cubic feet per second for an average of eight days.

Fish can't live in that. These are things that have to be considered, because the effect you can see, the cause and the effect. This is the cause; the effect are these gentlemen sitting over here today. Their industry has been devastated. I respectfully ask not only the Commission, but our DNR, who does a good job of working with us, that they need to take this into consideration, the major problem with the millions of gallons of raw waste coming from the city of Baltimore into the Chesapeake Bay.

The Conowingo Dam, it is now at 100 percent trapping capacity. Every time we get a big storm, I farm too, we have one inch of rain in 84 days, so

we're dry right now, thank God for that. But when that Dam scours, the plume goes as far south as the Bay bridge and it is most of the time is in the spring when these fish are spawning. These are factors that have to be figured in, because you see the cause and the effect. This is your cause, that over there I s the effect. Thank you very much, and by the way, welcome to Maryland, it's a beautiful Maryland day.

CHAIR WARE: Thank you, Captain Newberry. All right, so we're going to go to our commenters on the webinar now. We're going to start with Michael Woods.

MR. MICHAEL WOODS: I double and triple checked to make sure that this is something that was not on the agenda, nor was it included in the meeting materials. What I wanted to make sure ended up on the record for the meeting today, was the spawning data that's come in from Maryland and Virginia in really the short number of days between the meeting materials coming out and present time.

I'll keep it short and sweet here, by simply urging the Board to please consider this data. We know now that this past year has been another sub-average, significantly sub-average spawning year. Given that we do have a rebuilding deadline coming, I would urge the Board to consider this in any decisions that are made, and I will withhold my comments on any other part of the recruitment issue for the appropriate time later in the meeting. Thank you.

CHAIR WARE: Thank you very much, Michael. Next, I have Stewert Ellis.

MR. STEWERT ELLIS: Thanks so much, Madam Chairman. My concern is that we've got a lot of loss from the commercial fishermen's livelihood. We have a lot of impact on the Chesapeake Bay because of the pollution. It all focuses in on a lower reproductive rate, which is impacting everybody.

I would stress the importance of focusing in on the whole picture. We need more involvement, we need more commitment from federal government on this, so that we don't impact the area south of New Jersey, which then defers all the traffic of the charters to New Jersey and north of that area.

It all centers around, everybody is trying to do what is in the best interest of each individual's group, but we need to make this focus to be on a cohesive plan from Maine all the way down to the Carolinas, so that everybody is playing under the same rules and it benefits the reproductive rates of the various individual locales. Thank you.

CHAIR WARE: Thank you, Stewart, next I have Mike Spinney.

MR. MIKE SPINNEY: Thank you, Madam Chairman, and thanks to the Commission. My name is Mike Spinney, I live in Massachusetts, I'm on the Board of Directors of Stripers Forever, representing our 4,000 members coastwide. The recreational slot and commercial size limits focus on harvesting breeding size fish. Gillnets in the Bay legal and illegal are killing fish indiscriminately. Environmental conditions have squeezed the spawning window so narrow that there is no room for error.

Mycobacteriosis, predation, invasive species, warming water, lack of forage, it all adds up to a crisis for striped bass, and yet as with every other meeting of the Striped Bass Technical Committee, there will be lots of numbers and charts and formulas cited as sleight of hand to convince the public that the fishery's managers have things under control, and that we just aren't smart enough to understand.

Yet we have a quarter century now of the smartest people in the room presiding over a steady decline in the striped bass population. In 2021, I was among the members calling for the ASMFC to do something bold and initiate a 10-year equitable harvest moratorium. I and many others asked the fishery be shut down long enough to give striped bass a chance to recover, and achieve the abundance and

healthy age stratification the Commission claims are its management goals.

Now after six straight years of spawning failure, this meeting will likely conclude with more of the same, incremental tweaks to a 10-year recovery plan that is entering its fourth year with no indication that improvement is imminent, and the remaining breeding population is producing numbers insufficient to fill the reproductive pipeline.

What will it take for the ASMFC to find the courage to do the right thing, and shut the fishery down for the sake of the future of striped bass? Pausing the commercial harvest and imposing a zero-bag limit for recreational anglers is the last best hope for recovery. If the Commission is serious about achieving its goal, an equitable harvest moratorium needs to be part of the debate. Thank you.

CHAIR WARE: Thank you, Mike, and last, I have Mark Ellis.

MS. KERNS: Mark, we'll try to come back to you, but we can't hear you and I haven't seen you unclick that microphone button.

CHAIR WARE: Al right, we're going to carry on. Thank you for our commenters today. We're going to get going with our agenda. We've got a lot to get through today, a lot of information, so just kind of generally, my hope is to get all of the information on the table, and then have a discussion as a Board of how we want to move forward.

REVIEW REPORT FROM WORK GROUP ON RECREATIONAL RELEASE MORTALITY

We're going to start that with our report from the Release Mortality Work Group, and I really want to thank all the members on that Work Group, particularly our Chair Chris Batsavage for their time and effort over the last few months. We're going to have a presentation from Chris Batsavage on the report from the Release Mortality Work Group. Then we also have our TC Chair Tyler, he's going to provide a brief report on some of the TC tasks that extend from that work group. We'll pass it over to Chris.

MR. CHRIS BATSAVAGE: Good afternoon, everyone. As the Chair mentioned, this is a report on the Release Mortality Work Group. Just really quickly, have the Work Group members up on the board, and thank them for all the hard work that they put in the last several months on developing this report for the Board.

A special thanks to Emilie, as well as invited researchers, members of the Committee on Economic and Social Sciences, and members of the public who participated in the work group meetings. It definitely helped us a lot in getting to where we are today. The Work Group was established to discuss recreational release mortality, and we were given four tasks.

Those tasks are up on the screen. We'll go into those in more detail, just so you kind of know the order of things. I will go through Task 1, 2 and 4, and then Tyler will finish up with Task 3, because that was done by the TC. This here is a reminder of the timeline. The Work Group tasks were approved by the Board at their May meeting, and the membership was established soon after that. The Work Group met a couple of times in the early to mid-summer, and reported out initial recommendations to the Board at their August meeting. We continued meeting through September, to discuss all the tasks, develop work group recommendations, as well as complete the report.

Today I will provide the report and Work Group recommendations report. Start off with no-targeting closures. This task was to review the existing no-targeting closures in state and federal waters, includes any information on impacts to striped bass catch and effort, as well as their enforceability.

We're also to identify any potential angler responses of behavior change through those

closures. The Work Group reviewed the no-targeting closures that are in place for striped bass, as well as no-targeting closures for some other species, to get some insight on compliance, how anglers responded and enforcement.

On the enforcement side, we also reviewed information on enforceability from the Law Enforcement Committee for no targeting. The following slides are the Work Group conclusions on no-targeting closures. Basically, we found it is hard to separate the effects no-targeting closures have on catch and effort from other factors, such as fish availability and other regulations, and effort would likely decrease from no harvest closures too.

It is uncertain there would be added benefit from no-targeting closures. No-targeting closure affects will vary based on angler response. For instance, it could be an effort shift to other species and similar habits as striped bass, using similar fishing methods that you would use for striped bass fishing, and as a result still catch striped bass.

Effort could also shift to when the closure isn't in effect, resulting in no reduction in effort. However, mortality could reduce if that effort shifted the times when environmental conditions are better for releasing fish. Good compliance is the key through effective communication, strong stakeholder support for the closure, basically understanding why it is in place. It is important for that, and the closures remain in place for a long time.

Compliance appears to be good in some cases, with no-targeting closures, but enforcing them is very difficult to do and it is resource intensive. Enforcement is better if the closures occur during discreet times and areas, when there are a few other species to target, or if the closure is for fishing in general.

But despite enforcement challenges, no-targeting closures could have some merit and shouldn't be rejected only because of enforcement concerns. The Work Group recognized there is a tradeoff between conservation benefits and enforceability, and also recognize we already have limited management options for the striped bass fishery at this point.

No targeting closures are not a one-size-fits-all option along the coast, due to the varying season times and lengths overlap with other fisheries, environmental concerns and enforcement capacities. The range of stakeholder values in the recreational fishery, as well as concerns about how no-harvest closures would, there is also a range of stakeholder values in the recreational fishery, as well as concerns about how no-harvest closures would likely only impact recreational trips harvesting striped bass. The Work Group finds that no-targeting closures has successfully achieved management objectives, such as reducing recreational releases in some cases.

However, requiring no-targeting closures coastwide would have varying degrees of effectiveness, enforceability, and compliance. The Work Group supports the consideration of seasonal closures through these recreational catch and effort, but recommends that no-targeting closures only be pursued in a flexible manner.

The Work Group has some ideas for pursuing no-targeting closures in a flexible manner. A state or region could choose between implementing a no-harvest or no-targeting closure. A no-targeting closure could be shorter, due to the added conservation benefit. Some Work Group members supported adding an uncertainty buffer to a no-targeting closure, then make sure that management objectives are met.

The Board could adopt no-harvest closures, but encouraged states to implement them as a no-targeting closure if conditions and other factors made it feasible in their state. Next, I'll move on to the Gear Modifications Task. For this the Work Group reviewed the Massachusetts DMF Discard Mortality Study and other relevant reports, to evaluate the efficacy of potential gear modification.

Doing this we reviewed the initial results from the Mass DMF study, as well as a study conducted by University of Massachusetts, Amherst. We also reviewed key findings from past post release mortality studies, and also reviewed information from the Law Enforcement Committee on unenforceability for gear modifications.

Overall, the Work Group found that gear type can impact post-release mortality, and likewise gear modifications have potential to reduce post-release mortality for striped bass. As far as enforceability, regulations for gear types and methods are moderately enforceable, based on Law Enforcement Committee evaluation of that.

The results from the recent studies show that lure, hook, and bait configurations can impact post-release mortality, which could be something for additional education and outreach and/or regulations. Mass DMF study found that the highest mortality rate occurred with baited circle hooks, while single hook flies had the lowest mortality rate, and lures of different types kind of fell somewhere in between those two, as far as mortality rate.

There were similar results from the UMASS-Amherst Study, and any differences between the two studies was likely due to sample sizes and differences in survey designs. Similar to no-targeting closures, there are many factors at play, such as fight time, handling time, water/air temperatures, et cetera, which makes it difficult to determine particular gear configurations that provide the most impact.

We also don't know how often gear configurations are used by anglers overall. But a survey by Massachusetts DMF next year should shed some light on this. The UMASS-Amherst study showed support from striped bass anglers for adopting science-based catch and release practices, and adequate enforcement of regulations. The Board should consider impacts to industry and anglers that potential gear modification regulations could have. Enforceability of gear restrictions and how they would interact with management of other species, should be considered by the Board.

Like with no targeting, gear restrictions shouldn't be rule out just because of enforcement concerns. The Work Group also feels it is important to continue education and outreach efforts on best management practices for this. Going along further with the conclusions, states have the option to implement gear restrictions without Board action, but they should communicate with ASMFC and neighboring states, to minimize inconsistencies in waterbodies shared by anglers from multiple states.

On to recommendations for this task. If additional gear modifications are considered, the Work Group recommends that they support post release survival, based on recent studies, easy for anglers to adopt and are consistent among states and regions. The Board must recognize any reduction in post release mortality from gear modifications is not currently quantifiable.

The Work Group also recommends that the Board consider impacts to the recreational fishery, current efforts by the fishing tackle industry to make gear that is designed to improve the survival of released fish., potential enforcement challenges and uncertainty in results from the current studies.

We will skip over Stock Assessment Work and TC Tasks for the moment, and go on to the fourth task, which is Public Scoping. This specifically was to consider public scoping on measures to address release mortalities, such as an online public survey ahead of this meeting. The Work Group discussed a potential for a survey of stakeholders on measures to reduce release mortality.

We discussed this with the Board at our last meeting, but after that we got some guidance and advice from members of the Committee on Economic and Social Sciences on approaches to consider to gather stakeholder input, and also comments on that initial survey. The Work Group conclusions, the Work Group doesn't think the survey is feasible for information that we hope to

get. The survey wouldn't meet the timeline for gathering input for Board action after this most recent stock assessment.

However, stakeholder focus groups after this next potential management action could paint the landscape of possible stakeholder responses to management measures, and discuss outreach on best management practices. The Work Group discussed an open survey, but realized there are inherent biases with these surveys, and also recognize there is some survey fatigue potentially from other striped bass surveys that are either happening now or will be in the future.

If the Board wants public input on stakeholder buy-in and responses to management measures outside of the public comment process for FMP management actions, then the Work Group recommends that focus groups collect that information. Focus groups will take a lot of staff time, and the logistics and timing need to be addressed for doing this. Members of the CESS could help advise us, and the Board could consider getting additional help from others with these focus groups. Maybe I should go back to Task 3.

CHAIR WARE: Just give us a second here to get the slides.

MR. BATSAVAGE: Yes, and the third task is Task 3, and with that I will pass it over to Tyler Grabowski the TC Chair to run through that for us. Thanks, Tyler, we're ready.

TC REPORT ON RELEASE MORTALITY AND NO-TARGETING CALCULATIONS TASK

MR. TYLER GRABOWSKI: Thank you, Chris, for your presentation. Yes, this is going to kind of look at the TC and SAS's answers to the recreational release mortality calculations and no-targeting tasks for the TC and SAS. In August 2024, the Board tasked the TC with questions to address the tradeoff between reducing the release mortality rate, which is 9 percent, vs reducing the number of releases overall.

Part of this task required the TC and SAS to identify a method for estimating reductions associated with no-targeting closures. The TC and SAS met twice in September and October of this year, to address these tasks. Just looking at Tasks 1 and 2. Task 1, if a reduction is needed to achieve rebuilding, determine how low the release mortality rate would need to be to achieve that entire reduction through the release mortality rate.

Then if the number of live releases is constant, what would the overall release mortality rate need to be to achieve the reduction. Looking at Task 2, if a reduction is needed to achieve rebuilding, determine the percent reduction in number of live releases needed to achieve that entire reduction through live releases alone.

This would use the current 9 percent recreational release mortality rate to look at how many fewer live releases would there need to be to achieve the required reduction. These scenarios assume a reduction would be fully achieved through reducing the release mortality component of fishery removals, in essence leaving commercial removals and recreational harvest as the constant levels.

Calculations for both of these tasks looked at either a 4 percent reduction, which was their lowest reduction from this stock assessment update, and also a 15 percent reduction used as a reference reduction. Calculations depend on what proportion of total removals is attributed to recreational release mortality as it changes between years.

In 2023, recreational release mortality was 42 percent of total removals, and this number was used for these calculations, going to be presented in the next slide, a couple slides, excuse me. The TC/SAS did consider a range of different removal percentages from 39 percent in 2022 to 50 percent in 2021.

The results from these analyses were not especially sensitive to the assumption. Looking at a table here

regarding Tasks 1 and 2. If there was a 4 percent reduction from total removals, the hypothetical release mortality rate, which the entire reduction through recreational release mortality would be 8.1 percent. If a 15 percent reduction was required from total removals, a 5.8 percent reduction would be the hypothetical release mortality rate, which use that entire reduction. In looking at Task 2, in relation to reducing the number of live releases to achieve the entire reduction. If there was a 4 percent reduction from total removals recommended, the number of live releases would have to be reduced by 9.5 percent. If a 15 percent reduction was required from total removals, a reduction of almost 36 percent would be required of live releases.

I'm going to discuss the next two tasks that the Board tasked the TC and SAS with. Number 3, which would be, if a reduction is needed to achieve rebuilding, determine the percent reduction in number of live releases needed under the current 9 percent mortality rate, assuming there is an associated reduction in recreational harvest due to no-targeting closures.

Then for the fourth task, identify the tradeoffs of implementing no-targeting closures at different times of the year, with different assumed release mortality rates to help inform when and where implementing no-targeting closures result in the highest reduction. Factors could include water temperature and salinity, with the assumption that the release mortality rate is higher when the water temperature is high and the salinity levels are low.

TC and SAS identified a method to estimate the reduction associated with no-targeting closures from Maryland DNR. We could apply that methodology coastwide, with additional guidance from the Board on what percent reduction management is aiming to achieve, which refers back to Task 3. Then Task 4 could be addressed when Task 3 is addressed by the Board.

This is just going to provide an extremely brief overview of the Maryland DNR, quantifying the reduction from their no-targeting closures. An extensive report was presented to the TC and SAS, so this is just a brief summary of these methods. Maryland DNR estimate a reduction for no-targeting closures implemented through Addendum VI.

These no-targeting closures in Maryland's portion of the Chesapeake Bay occurred April 1 through April 30, and then also July 16 through July 31, and there are three assumptions associated with these analyses. The first one being; Maryland DNR assumed trips only targeting striped bass, no other species were targeted, would no longer release any striped bass.

They also assumed that if striped bass were targeted with a second species, those trips would still release striped bass, but at a lower non-targeted rate. Then finally, they assumed that all striped bass releases from non-targeted trips or in essence, incidental catch would still occur. For this study, anglers report targeting other Bay species more heavily during the closures, as compared to prior to the closure, when striped bass is the most targeted species.

The impact of a no-targeting closure in the ocean certainly may be different than what occurred in the Bay. A high proportion of anglers in the Bay are only targeting striped bass in the summer, which may result in a lower reduction in the Bay than in the ocean. While the TC and SAS agreed that closures do seem successful in reducing total removals.

But there are some uncertainties around fish availability, angler behavior, and more people are shifting their effort to other species should also be considered. To summarize, the TC and SAS agree that the Maryland DNR method for estimating the reduction associated with no-targeting closures is appropriate to apply coastwide, if the Board considers no-targeting closures as future management action. With that, I guess Chris and I or anyone else will take questions regarding these two presentations.

CHAIR WARE: Great, thank you very much Chris and Tyler for those great presentations. We're going to move to questions and Board discussions to brain this a little bit. I'm going to ask, if you're a Board member and you're looking to comment on whether to pursue no-targeting closures or gear modifications, I ask you to save that comment for when we talk about what to do after the assessment.

Certainly, questions again comments on the scoping, focus groups, all of that totally inbounds there, but just trying to provide some structure for how we get through this meeting. We'll see if there are any questions, and then move to Board discussion. Loren Lustig.

MR. LOREN W. LUSTIG: My question is for you, Chris. You had mentioned that education and outreach methods were considered by the Work Group. In that regard, was the Work Group able to identify what educational methodologies pay the highest dividends, in terms of cost benefit ratio? Thank you for your help in that.

MR. BATSAVAGE: Thanks for the question, Loren. We didn't get into great detail on particular types that I remember, however if any other Work Group members think of something that I might have forgotten, please chime in on this. I think we were really focused on the fact that it is part of the Amendment right now for striped bass.

It needs to continue, especially as some of this new information on gear modifications and release mortality kind of come online and get more distributed better, that regardless whether we put in regulations or not, that we really need to keep up the educational outreach. Yes, again, I don't recall us getting into details on what the most effective way would be. I think there were some discussions on different types, but if any of the other Work Group members remember any details, definitely feel free to add on to what I just said, thanks.

CHAIR WARE: Thanks, Loren, Steve Train.

MR. STEPHEN TRAIN: This question is for Tyler. I'll say this and I say it a lot, I try to over simplify it and make this make sense. It seems like to try to protect certain year classes we continue to modify the slot, which results in a lot more releases. From what I see, effort to protect the stock results in a lot more release mortality, especially if it is targeting an area with a lot of the fish we're trying to protect, ah because they've got to continue to throw them back.

We're trying to figure out what to do there, and you said here, it's hard to educate the public on what release mortality, I'm paraphrasing, because I'm not reading the page I was on. What is the alternative to the catch? We've got two options, I'm talking in circles, it's hard to prepare something here. What is the alternative when you've got a 9 percent release mortality in allowing fishing? If we don't go to closures, what is the alternative? How do you drop that 9 percent release mortality and keep a slot size? I'm trying to figure this out.

MR. GRABOWSKI: I'm trying to understand. You have your 9 percent release mortality, correct? You are saying, in terms of changing a management action in changing a slot limit? I don't know. Could you try to clarify a little bit more, maybe?

MR. TRAIN: I'm trying to simplify in my own mind. The more we narrow the slot the more fish we throw back. The more fish we throw back under a 9 percent release mortality, the more fish we kill by narrowing the slot size. How do we avoid that without closing the fishery?

MR. GRABOWSKI: I think Katie will take that.

DR. KATIE DREW: Sure, I'll jump in and says, it's true that the more you narrow that slot the more fish you are throwing back. However, 9 percent of the fish you throw back survive, compared to 100 percent of the fish that would die if you had that same slot open. When we do these calculations about the reduction that we're expecting, we do

take that into account, that we will increase release mortality, but it will be offset by the reduction in harvest.

However, it is definitely, you know it's a challenge, and as we're going to talk about in the next presentation, we're running into the limits of what we can do with just changing a slot limit or a bag limit, in terms of controlling that fishing mortality. We'll need to focus on other things like, for example, reducing release mortality through gear modifications for increased angler education and best practices et cetera.

But we're already at kind of a 9 percent release mortality rate. It's unclear, people are already widely using circle hooks, widely practicing best practices. It is unclear how much of a benefit we could get on that side. The alternative that we need to focus on is probably reducing effort in some way, that fewer trips or fewer numbers of striped bass per trip that are handled and released alive, is going to be needed to reduce that release mortality.

I think it is also important for the Board to consider that what we're looking at is not about whether that fish died because it was released alive, or whether that fish died because it was harvested. We're looking at the total numbers of mortality. If you went to a fishery that was completely catch and release, 100 percent of your mortality would be release mortality.

Is that bad or is that what you want the fishery to look like, or do you want more of a balance between harvest and release mortality? I think these are the issues that the Board is going to have to struggle with, and that we're getting to the limits of what we as technical people can really quantify, and tell you doing this will get you to this.

CHAIR WARE: Next I have Mike Luisi.

MR. MICHAEL LUISI: To Steve's question. Katie did an amazing job, explaining what I was going to say in just a few words. But Steve, I think you've been grappling with the same questions that we've been grappling with. How do you maintain, if you have a slot limit, how do you maintain that slot limit, knowing that more fish will be thrown back, and how do you reduce that mortality? Our answer to that was the no-targeting provisions that we put in place, which were just discussed, and thoroughly discussed as a part of that working group. I would hope that if other states are struggling with that same question that a no-targeting closure, which not only closes the season to harvest, but closes the season to targeted catch. It tries to accomplish two things at once, and I hope states give that some thought as we continue this discussion, and addressing the disparity between the throwbacks in the harvest, and who and what piece of that equation is most impacted by the rules that we set.

CHAIR WARE: I have Dave Sikorski and Dennis Abbot and I missed a hand. All right, Dennis and then Jim Gilmore.

MR. DENNIS ABBOTT: Getting back to Steve Train's comments. It would be interesting to know what percentage of fishermen are catch and release. You know I think, especially in the northern regions the vast majority are. Regardless of what the slot limit or slot size is, those recreational fishermen are going to continue fishing as they would normally do, regardless of what the slot limit is, and cause a significant amount of catch and release. I don't know what the answer to that is, because it's just a difficult problem for us to solve.

CHAIR WARE: All right, Jim Gilmore.

MR. JAMES J. GILMORE: Just a comment and more of a question, back to Chris's presentation, because he went through two things that if we're doing any kind of a non-targeting on gear restriction it's difficult to enforce, difficult to quantify the benefit of it. Sometimes people think, well then why, it's not even worth doing.

But reality is, and this goes not only with fisheries management but years ago I did a lot of natural resource management, so land acquisition, wildlife,

whatever it is land access. Typically, the majority of people if you do have a rule like that will follow it. That is the majority of it. A smaller percentage will be ignorant of it and they will violate it, but not deliberately.

Then you've got a smaller percentage that are just going to obviously go, that will violate it just because they don't agree or whatever. The point is, is that even though you can't quantify them, maybe you can enforce them. They typically tend to have a positive impact, so don't take what was said as we shouldn't do that or even consider doing that.

CHAIR WARE: David Borden.

MR. DAVID V. BORDEN: I've got actually two questions. One relates to the gear studies. I think the gear studies that have been done are terrific. I complement all the agencies involved, and encourage them to keep doing them. My question is more to the point of a scientific view of the gear studies. What is the scientific community going to require those authors of those publications to do, before we can actually use them?

Is it going to have to be peer reviewed, published, and at what point did we anticipate recommendations? Then, the second question relates to gear in that the Work Group I think did once again prove their worth, and did really fine work. But at what point do we meet with the tackle manufacturers and talk about changes in gear configurations? I think that dialogue needs to get initiated sooner rather than later, and it's my understanding some of the tackle manufacturers are already starting to address some of the concerns that have been raised in the preliminary studies. Those two questions, and I'm not directing them to anybody in particular, but if I could get a response that would be great.

DR. DREW: I'll jump in at least for like what the TC would need, and I think we would not require them to be published in any way. I think if the lead authors provided us with a manuscript of some sort, a final report, and information on their data presented at the TC. We will be gearing up for a benchmark stock assessment soon, and that always has an opportunity for a call for data to be submitted to us that the TC will review, and consider whether we would like to have that incorporated into the assessment.

I think that would be a great place for the studies. Once the authors feel that they have sort of finished it, I know we're seeing a lot of preliminary results right now, so once they feel that they have completed those studies to their satisfaction, they can submit that through the benchmark stock assessment process, and the TC can review that and decide if and how to incorporate that information into the assessment. But then I would look to maybe Emilie or Toni on how we would engage with the tackle manufacturers.

CHAIR WARE: Do you want to respond, David, to that?

MR. BORDEN: Just thank you very much, Katie. The next benchmark is scheduled.

DR. DREW: Yes, the next benchmark will be reviewed through the SAW/SARC, which is going to be a June SAW/SARC in 2027. We will be starting the process probably next year, early next year at some point to start planning and that process.

MS. EMILIE FRANKE: To your second question on reaching out to tackle manufacturers. I think it is up to the Board to decide when in the process that would be appropriate. For example, if the Board were considering a specific gear modification, would the Board then want to take that potential option to the gear manufacturers and ask them exactly how that would impact them, or how they would adapt. I'm not sure, I think it is up to the Board when in the process they want to make that engagement. Is it before you have ideas for specific modifications or after you come up with, you know this is one that we're focused on.

CHAIR WARE: Go ahead, David.

MR. BORDEN: This is an opinion, so my opinion is that we should get those dialogues going with the gear manufacturers sooner rather than later. Just basically present the preliminary results, so that they can start thinking about it and formalizing their own position by it. Thank you.

CHAIR WARE: I saw John Clark, Dave Sikorski, and then we'll do a check in on the rest.

MR. JOHN CLARK: Thank you to the Working Group, the TC and SAS, and for the great presentations. Just following up on the gear. We've put a lot of effort in all states to promote circle hooks, and it was really disappointing to see that the baited circle hooks had such high mortality, and they didn't really do any better than the J hooks. Just curious as to how we got, was it kind of taken on faith that circle hooks would be less of a source of mortality than other types, or did anything like that come out? I'm sorry, it maybe was in the studies themselves, but it just seems like we've been promoting them now for what, five, six years I think we've been promoting the circle hooks. To see that they really didn't help with discard mortality is very disappointing.

DR. DREW: I think prior to these studies there was literature, other studies going that circle hooks did make a difference. I think one of the tricky parts is, number 1, sort of the potential interactions between angler experience and the use of circle hooks, that is if you are a very experienced fisherman.

Maybe circle hook mortality doesn't actually, you know is equivalent to your mortality on other gears, whereas an inexperienced angler the mortality on those other gears may be higher than on the circle hook. A circle hook may compensate for something experienced on that front. The other issue is I think we've been hearing there are differences in mortality rates, depending on the specific circle hook. The circle hook that is out there and available and that was tested in this study is maybe not the same as was tested in other studies. I think we would definitely, as a part of the assessment process, consider going through previous literature which did support the idea that circle hooks reduced mortality for striped bass and for other species, versus what we're seeing in these other studies, and can we explain some of those differences and determine which is maybe a better representation of what's happening in the fishery for striped bass right now.

CHAIR WARE: Dave Sikorski.

MR. DAVID SIKORSKI: I'm going to be really quick, because I have comments. Just to David's line of thinking, and offering to the Board that we should be thinking about how we engage with the industry that makes our tackle. We already are. I think it's an ongoing thing. I personally would like to take a step back and think about that evolution that's already been happening, inline hooks on plugs, that type of thing.

I think we would want to be really careful before attempting to jump into something with the regulatory mindset. Instead, kind of see what is already happening. On the flipside of that, I think one of the challenges with circle hooks, as John has highlighted and the studies have shown, is that there are so many different kinds of circle hooks, using certain kinds of technology that may not relate to circle hooks available 30 years ago when another study was done.

That is some of the stuff I think we can be a little more productive on, in really trying to at least educate and engage with the industry, to try and minimize the number of circle hooks that just don't work well for especially these species, but many others too. Just some thoughts.

CHAIR WARE: A check in, if anyone hasn't had an opportunity to ask questions yet on this report, this would be the time to do so, or if there are comments on the scoping focus groups. Otherwise, I'm going to take us into our assessment topic, as I

suspect a lot of our conversation is going to bleed into that. I don't want someone to think we can't talk about these topics moving forward. Yes, Nichola.

MS. NICHOLA MESERVE: As a cushion about the Technical Committee's review of the Maryland methodology for evaluating the no-targeting closures, and for the assumptions that were made about the different types of trips in which striped bass are caught. I just want to make sure I'm understanding that where it assumes that trips that were only targeting striped bass no longer released any striped bass.

That is essentially assuming that there was no shift in effort to outside of the closure, that there was no noncompliance with the closure, and in making those assumptions where the Technical Committee said that this methodology could be applied elsewhere along the coast. Would the Technical Committee be looking at potentially changing those assumptions, or would it be directly mirroring the assumptions made by Maryland for those different categories of bass.

MR. GRABOWSKI: I think given Maryland's fishery and that the anglers primarily aren't targeting striped bass. I think the assumptions certainly are valid int that aspect that they would just give up fishing. I think we did highlight in our discussions that yes, certainly coastwide anglers may change their behavior.

Given the seasonal fisheries along the coast, that they may fish for bluefish or something similar during that same time that those trips may still occur, but effort will be shifted. The reductions seen from the Maryland DNR closure may not be as high as seen coastwide, in terms of the impacts from no-targeting closures.

MS. FRANKE: I can just add, I think from a staff perspective. You know the TC hasn't had a chance to actually apply this method to the ocean, for example. I think who knows what will come up in the TC discussion once they apply those assumptions the ocean data. The TC could have no recommendations for maybe a slightly different assumptions, or some discussion to bring back to the Board about the methodology. I think from a process perspective, you know we'll see what the TC comes up with when they actually apply the method.

CHAIR WARE: A follow up, Nichola.

MS. MESERVE: Just a follow up comment then I guess. It might not be just a really cut and dry thing to apply that to the coast, if the Board were looking to move quickly.

MR. GRABOWSKI: Correct, yes, certainly, definitely. That would take more TC thought applying it coastwide.

CHAIR WARE: Marty Gary.

MR. MARTIN GARY: Before we depart the discussion, I just wanted to thank Chris for chairing the Work Group. It was an honor to participate with it, and for Emilie, for all her hard work as always. There were a lot of meetings, a lot of ground that we covered. I thought it exceeded my expectations, frankly. But I wanted to highlight one area where we were entertaining the thought of survey design. The Work Group itself took a crack at it. Thought we did a pretty good job. I had personal reservations, I think other Work Group members had as well, because well, we know the fishery pretty well. We're not professional survey designers. We did have somebody come in to address the Work Group from NOAA that is involved in professional survey design.

I think we all learned a lot from that. There is no magical silver bullet of a survey that you can try to understand the complexity of this fishery up and down the coast, both spatially and demographically. But focus groups were one area that I think he steered us toward, and I'm really intrigued by that, and hopeful that maybe at some point in time we'll further pursue that.

CHAIR WARE: Yes, I'm just going to echo. I thought the thoughtfulness of the conversations I listened to was of a really high caliber, so thanks for the Work Group on that. I don't see any other hands. All right, that was your chance to jump in there.

CONSIDER 2024 STRIPED BASS STOCK ASSESSMENT REPORT

CHAIR WARE: We're going to move on to our next agenda items, which is our 2024 Striped Bass Stock Assessment.

PRESENTATION OF STOCK ASSESSMENT REPORT

We're going to have a presentation from Dr. Gary Nelson, to provide an overview of the Assessment Report. After we do that, I'm going to have us pause. That will be a time for questions on the assessment. Then we're going to go into a second presentation on the projections, and I think that will lead us into questions and conversation about how to move forward. I will pass it over to Dr. Gary Nelson.

DR. GARY A. NELSON: We have four TORs that we are going to show you today. We completed a stock assessment update this past August. Katie and Mike Celestino were our partners in assembling all the data. I just get it all and push the buttons. I just want to show you today. TOR 1 is to update the fisheries dependent data, which includes the landings, discards, catch at age data that were used in the previous peer review and accepted benchmark stock assessment.

We did that. We updated the data from '22 and '23 using all the MRIP and harvest members and releases to calculate the dead releases. All the states were updated. If you're unfamiliar with what we do, it's pretty much using the estimates for all states, except for North Carolina, we just use any of the numbers that they generate for the ocean only.

For the commercial harvest, we got the information from Mass, Rhode Island, New York, Delaware, Maryland, PRFC, Virginia and then North Carolina on the ocean only. Then we updated the commercial discard estimates and, in that method, we used tag data, along with the MRIP data to come up with commercial discards. Just to point out, we are missing data in the summary.

We don't include catches from major rivers, like the Hudson or Delaware, because the MRIP program does not go that far up those rivers. Of course, there are always things like poaching that we don't have good estimates for. In this slide I'm showing up on the screen now it shows the total numbers of removals for the whole time series, 1982 up to 2003. It's broken down by into the Bay fleet. We use what is called an area as "fleets" modeling approach, and so we have the information broke down into the Bay and the Ocean. The Bay here is in gray, and the ocean is in blue. The total estimates, as you can see, I highlighted an arrow up there, and that was the increase in the catches in 2022, which prompted the emergency action that we did in 2023. For the Bay in 2022, the total removals were 1.58 million fish and 1.42 million fish in 2003. On the ocean it was 5.2 million in 20222, and 4.2 million in 2023, giving us the total of 6.9 million 79 million fish in 2022, and 5.58 million in 2023. The bump up in 2002 was mostly from the Ocean. This slide shows kind of the same thing, the total removals but broken down by disposition. Here we show that the recreational dead releases and the recreational harvest make up about 89 percent of all the removals on the coast. Commercial harvest made up roughly 11 percent, and the commercial discards, and this is in 2003, sorry, and commercial discards are less than a percent.

Then just showing the total catch or total removals age composition, just to show you some highlights in the year classes that are moving through. I can see the colors here. In orange is the old 2011-year class. You can see that moves through. Starting in 2012, when there is no longer really in the catch at age in very low numbers.

The next big one was 2015, this is from Chesapeake Bay. There was a 2014 which I think came from Hudson River. You see both of those moving through, and then that one 2023 the 2015 is Age 8. Then we have the just slightly below average 2018-year class in green here just coming into the landings in 2023, so about Age 5. Those should be passing through the fishery pretty well in 2024.

TOR 2, it was basically to update the fisheries independent data, which we used in the stock assessment to tune the information. I'll just briefly go over some slides of the different indices we used. It's hard to see, so we're going to stop in the upper left-hand corner. Within the stock assessment we develop a method of combining the Maryland young of the year and Virginia young of the year into one index.

We call that the composite index, and that is shown in the upper left wrap. You can see in the last few years the index is showing a steep drop. Then below that is actually Maryland's young of the year out to 1957, showing the actual value from that index alone, and you can see those bummer year classes that we've been having the last few years and right now.

Then the Virginia Index showed also a drop in the last few years. Up in the upper right-hand corner is the New Jersey/Delaware Bay Index. They missed and didn't do it in 2020, I think, but since then their index has been dropping also. Then in the New York JAI, which is the one below that 2023 seemed to be a clunker of a year.

Then we have a couple indices. For the young of the year indices, we actually lag ahead one year, and that shows up what would be Age 1. Then we have the Age 1 indices which we lag ahead and a model with Age 2 fish. I know that is confusing. We have two Age 1 indices, one for Maryland and one from New York.

The Maryland Index is quite bouncy, but does show some of the strong year classes like you've noted, that 2015 up here and 2018. The rest have been kind of bouncing around. Then the 2014, I'm sorry the New York Index showing that big spike. That's the one below, that was a 2014-year class. But since then, they've had a pretty low abundance in the Age 1s also. Within the model we also have a bunch of indices which we call the age composition indices, which have age data associated with them, and we model those age compositions along with the total index for each of these surveys.

Up in the upper left-hand corner, starting with the ChesMMAP Survey, you can see there has been a decline in the last few years. I couldn't tell you offhand what ages so it was all right now, but it's definitely been in decline. The one below that the Delaware 30-foot trawl, showing that the last few years have been very, very low.

Also, the New Jersey Ocean Trawl Survey, which took a few years off and started back in 2022, and their index indices, essentially, they caught zero fish in the last couple of years. Then Connecticut at the bottom has been up and down, but hasn't really dropped that much. Up in the upper right-hand corner is the Maryland spawning stock gillnet members.

That is an index that has always been just flat and bouncing around, although within the data the age composition actually does show changes over time. Next one is the Delaware spawning stock biomass, it's an elective fishing survey, and their indices have been going down. The New York Ocean Haul Survey stopped in 2007, so there is no new data then, and then the other index is the MRIP catch per unit effort index, just showing the last few years, it's just been kind of flat and fluctuating.

Okay, TOR 3. This is to list the history of information using the assessment and/or model parameterization, and note any differences from the benchmark. Just to remind you, the benchmark model is known as a forward projecting statistical catch at age model. We modeled the Age 1 abundance using all those indices, and they include age classes up to 15 plus and 15 being a plus group.

We estimate fully recruited Fs for each year. We have at least four-time blocks, which we estimate selectivity patterns in each. We have to estimate, because we have like 14 indices within the model, we estimate 14 parameters catchability parameters for them. Then we have selectivities that we estimate for 8 of the age composition surveys.

The data are split into fleets, again the ocean fleet and the Bay fleet. That was done to improve the estimates of selectivity, and they provide at least partial Fs so you can check out the Fs from the Bay as opposed to the ocean. In the model we use age-specific M's, and those are used in the updates. We also use all the same information like the maturity at age schedules and sex ratio schedules.

We updated the weights at age to calculate the spawning stock biomass, and then we used the same methods to balance the data contributions within the model, and I don't need to really deal with that. For this assessment we did a couple of runs initially. Because we have 2023 was a first year of the emergency action. It requires a new selectivity block, because of the significant changes that we made. We did initially two models, in which we have a single time block for which we included 2020 to 2023 in, and estimated the model based on that single time block. Then we actually had a model in which we had 2023 as its own time block, because we realize that the selectivity was going to change because of the regulations. However, we brought those two models to the TC, and there were some issues with both. The TC was uncomfortable with the two-time block models, one like 2023 has its own time block, and the reason for that was because there is really only one year to estimate selectivity problems. You probably should have at least two or three years to come up with some good estimates of selectivity.

Looking at the output from that model, looking at the selectivity, the TC was concerned that actually the descending limb of this selectivity pattern was steeper than would have been expected based on just the reduction of four inches down to 31. Actually, the curve has shifted to older ages, where if we're cutting down to a smaller size it should be shifting to the left.

The TC did not think that that model with the two-time blocks is appropriate for stock determination, because of that uncertainty on the selectivity for 2023. For determining status, they all prove that the single time block model was the best one for now. Those are the results that I will be presenting. We can get into; I can get slides later showing some of the issues with that alternative run with the two-time block model.

TOR 4, update accepted model and estimate uncertainty. Do some retrospective analysis. Include sensitivity runs, and compare the benchmark assessment results. These are the results for that single time block model. This slide just shows the fully recruited F by the different fleets, the Bay and Ocean, which I can see the colors.

Yellow is the Ocean; blue is the Bay. Then the total F for both areas combined is in the top black. You can see going from 2021 we had the jump up in F in the Ocean in the total to 2022 and 2023. But the Chesapeake Bay F kind of remained flat for the last few years. This slide just shows the estimates of recruitment, the Age 1 members.

In this slide there is a horizontal dash line that just shows the time series mean, and I've highlighted several of the large year classes that we've talked about over the last few years. The 2011 through 2015, and then the 2018 out of Chesapeake Bay showing their magnitude here. Notice that the last few years, 2022 and 2023 are low.

Recruitment has declined since 2018 looking at that trend. This slide on the upper slide is the estimates of total abundance that is all ages. Below that is the Age 8 plus abundance. We'll see the abundance was highest in looked like 1990s or so, then declined a bit and have declined since, not so in a steep manner, but last few years it definitely has done that.

Then the 8 plus abundances kind of reflect what we've seen in the SSB, which we have this decline since the 2012 or so. But the new model estimates suggest that the 8 plus abundance is increasing. This just shows, the slide just shows the female spawning stock biomass on the top, and exploitable biomass on the bottom.

The female spawning stock biomass for 2022 and '23 show it has increased, so it jumped up, and this is probably primarily due to the 2015-year class starting to move through the fishery, or at least into the spawning stock ages, which females start about Age 7. Then below that is the exploitable biomass. This is just the exploitable biomass if that number is correctly allowed to fish on everything, something like that. Some retrospective analysis, so when retrospective analysis is used to examine the stability of our terminal estimates, our current estimates of fishing mortality and spawning stock biomass by removing essentially one a year data, keeping the configuration that you put together for the current year, like 2024 for this assessment, and removing one year of data back in time, and comparing the estimates.

What is shown up here for fishing mortality on the top and female spawning mortality on the bottom is that we do a fairly good job of estimating both. It seems that fishing mortality tends to be slightly underestimated about, if I remembered correctly about 2 percent, 3 percent at this time. Then at the bottom is the differences, oh sorry, forgot to mention.

The slide on the right show's percent differences. The difference between our current measures, a current stock assessment estimate, and then compared to the estimates that come out when you remove one year of data. Basically, we're slightly overestimating female spawning stock biomass in the current year.

We're doing pretty good; it tends to be under about 5 percent or so. While there is concern that there is a retrospective bias pattern, whether we should correct it or not and the National Marine Fisheries Service uses a technique where you look at the 90 percent confidence intervals of your current estimates, and then do some bias correction based on the pattern in the retrospective.

If that adjustment lies outside and use a 90 percent confidence interval, then they tend to adjust the F and the SSB for the bias. In our case there was very little, so there was no need for adjustments, so our resulting estimates that came out are the ones that we used to determine stock status.

We did some sensitivity runs and primarily I'm just going to show in this section the differences in the selectivity that came out between that base model, which is the one-time block model, and then the alternate model, which included 2023 as its separate time block in the selectivity. At the top, you have to look at this going across.
On the top row, on the left of the estimates of what the selectivity would be for Year 2020 and '23, and because they are in the same time block up top, they are going to be the same selectivity. On the left column is the Bay selectivity and on the right is the selectivity for the Ocean. On the bottom row is the selectivities for that alternate model, where we have '20 to '22, a single time block in 2023, its own time block.

You can see quite a difference if you can compare across the different models. What I wanted to point out was the problem I mentioned earlier, why the TC didn't like this method was in the bottom right-hand corner you can see the selectivity in the black for 2022, and then compare that to the estimate for 2023.

You can see how it shifted to older ages and the slope on the right-hand side, the decline was much steeper than we would expect from just a four-inch change in the regulations. That's why we decided to go with the single time block model for determining the termination status. Just for some comparisons, this is a slide that just shows comparing the fully recruited F, the female spawning stock biomass and recruitment values from those two models, the

base and the alternate., showing just very little difference, except at the terminal year. If you look at the F for the alternate model, that went up as opposed to the base model, which actually went down, and there is very little difference between the two models. Shown here are just comparisons of the spawning stock biomass on the top, the full Fs in the middle and then recruitment at the bottom.

Comparing the estimates for the current model, which is in black here, and then the 2022 update and then the benchmark done back in 2018. They vary a little bit, but the trends have been pretty much the same. TOR 5, so we need to update the biological reference points of the stock and determine stock status.

Our current reference point is actually for the female spawning stock biomass threshold, is actually the 1995 value that the model estimates. That is the biomass threshold. Then for our target we multiply that number by 125 percent to get what our target SSB should be. From using those values, we then use a stochastic projection method to develop what the F threshold of fully recruited fishing threshold would have to be to get each of those values, either the threshold SSB or the F target.

The values that we used are pretty close to what we used that were determined back in the 2022 update. F threshold here is 0.21, and the target is 0.17. Conclusion, and this slide shows in the upper slide is the female spawning stock biomass. The shaded area is, I believe, the 95 percent confidence interval.

Then the horizontal dash line is the target SSB level, and the solid horizontal line is the threshold. You can see that we're still just a little bit below the SSB threshold, so because of this stock is determined to be overfished. But if we look at the fishing mortality below, since the F is below the threshold and close to the target, then overfishing is not occurring, same status as it was in 2022. Questions?

CHAIR WARE: We're going to start with Board questions on the presentation. Marty Gary.

MR. GARY: Thank you, Gary for your presentation, and thanks to everybody in your team putting together the Assessment Update and bringing it to us today, appreciate that. I'm sure you're going to get a lot of technical questions. I'm going to start off with what might be a pair of blank questions on production and recruitment.

Might be the least technical you're going to get, but I think it's worth asking. As far back as I can remember in my career, the Chesapeake Bay has been considered a dominant production area for the Atlantic coastal stock of striped bass, outside of Albemarle and Pamlico Sounds striped bass.

Over time I've never seen any science, unless I missed the memo that has refuted that. The metric that has always been assigned to that is somewhere around 75, 80 percent of the striped bass that are produced by Chesapeake Bay. Recently there was a University of New Hampshire, New Hampshire Sea Grant preliminary release of some information on a 5,000 plus sample fin clip analysis, genetic analysis that appeared to corroborate that. But the other side of the story there that I've also heard, fishermen telling me up in New York, for instance, that these fish are moving to the north and they are actively spawning in other areas, Housatonic and a matrix of other northernly rivers. I think my first question for you or for Katie is.

Is there anything you can tell us that would refute the longstanding assertion that Chesapeake Bay is that dominant production area? Can you say anything to affirm it, refute it or somehow characterizes that, and I may have a quick follow, Madam Chair, related to recruitment, depending on that answer.

DR. NELSON: Yes, I can. There is a gentleman in our office, Ben Gahagan, whose 5,000 samples of genetic samples he's been collecting for his dissertation, and they are primarily made up of Chesapeake Bay fish. It's still a dominant stock on the coast.

MR. GARY: Okay, and then the quick follow is, you know you highlighted numerous times in your presentation the successive years of poor recruitment we've seen, starting in 2019 in the Chesapeake Bay. Hence, my next question is, it's been my understanding there is a very strong correlation to that Maryland JAI in particular to the Age 1 recruitment.

Is that generally acknowledged in the science community or in the assessment process? We know that you have JAI inputs from Delaware Bay, Hudson River and Chesapeake is split between Maryland and Virginia. But in conversations I've been engaged with over the years that Maryland JAI has a strong correlation to future abundance. Would that be an accurate statement in your estimation?

DR. NELSON: Yes, the Chesapeake Bay Index and the catches in the estimates of abundance that come are strongly influenced by those data, definitely. Let me back up. The estimates of the recruitment values, when regressed against the young of the year indices from the Chesapeake are highly correlated. A lot of that information for the coastwide stock is coming from Chesapeake Bay.

MR. GARY: All right, thank you, Gary. I think that is a theme I hope everybody in the room and online understands. While we're talking about the assessment and the 2029 rebuild target, we're facing the six weakest year classes and that Maryland JAI in a 66-year dataset history. I hope that runs through everybody's minds as we discuss this, and elaborate on our discussions, and put our motions forward. Thank you for that, Madam Chair.
CHAIR WARE: Any other questions from the Board on the assessment? Jim Gilmore.

MR. GILMORE: Thanks, Gary, it was a great presentation. Just, and if you don't know this off the top of your head, but I think we go back to, I believe the spawning stock biomass was about 200 million pounds or about that, so we are just at the threshold. A lot of correspondence that I've been getting in e-mails or whatever that we are back to the 1980s, and that we have this collapse going on. But as I recall, the spawning stock biomass at that point was below 50. Just to clarify that. We obviously have to take some significant action, but we're not back to where we were at such low spawning stock biomass, where people are saying we've got to shut the fishery down completely.

CHAIR WARE: Robert Brown.

MR. ROBERT T. BROWN, SR: It seems like to me, according to my memory back in 2018, the benchmark will raise the threshold and the target. We are now overfished, which we were and overfishing is now occurring. But we are right at the verge of being on it, but they raise those benchmarks and the threshold and the target back then. When they raised it back then, it was said by many scientists it would be very, very hard to hold, and we may not be able to maintain it at that height, because it was so high.

CHAIR WARE: Do you want to try and ask that as a question? Robert, are you asking Dr. Gary Nelson to comment on the reference points?

MR. BROWN: That is my memory as I can remember it.

CHAIR WARE: I was not on the Board in 2018, so unfortunately, I cannot refute or deny your claim.

MR. BROWN: But it was raised, thank you.

DR. DREW: It did increase in 2018, and that was because the scale of the population increased, because of those new MRIP numbers. If you look at the graph, maybe you should go back one slide to stock status. You can see that we did achieve both the threshold and the target for several years.

I think there has been some discussion about whether that target is appropriate or not, is that too high? I think it is less of a question of deciding where we reach those levels. But can they sustain the level of fishing mortality that the Board wants

to see, and still maintain that level of high biomass is maybe the question.

MR. BROWN: Yes, and that is what I'm talking about. Many scientists back at that time said, if you raise it this high it's going to be hard to maintain, because it's so high. In ASMFC when we had that one peak after we had those very good high year classes, we maintained it. Right now, we are on the borderline. If we were where they used to be, we wouldn't be overfished and we would not be, overfishing wouldn't occur.

CHAIR WARE: Jason McNamee.

DR. JASON McNAMEE: First I'll say hi to Dr. Nelson, and thank you for the presentation. I haven't seen you in a while. Thank you for the presentation, great work as always by the Stock Assessment Team. I have a question for you. I think it's actually for the Chair, or maybe Emilie. It's not a question, but I wanted to post some research recommendations. I just couldn't think of a good spot. You know they kind of go with a stock assessment, but they could also go like later. I guess I am looking for advice on to when to offer those.
CHAIR WARE: I think you can offer those now, Jay, if you would like to.

DR. McNAMEE: Oh, okay, I wasn't prepared for this.

CHAIR WARE: That's okay, another option, Option B is, we can go through questions. I'll do the projections and questions, and then after break we'll come back to you. Adam Nowalsky.

MR. ADAM NOWALSKY: Two questions regarding recruitment to the juvenile abundance indices. Could you explain to me why the juvenile abundance indices graph shape does not match the Year 1 shapes as we see them from Maryland and New York? My expectation would be that the Age 1 would have a similar shape, just lagging by a year. Yet what I see for Maryland is a higher period of juvenile abundance followed by a low period, followed by what appears to be a steady declining period of juvenile abundance.

Whereas, the Age 1 appears to be something somewhat steady, with a few spikes in it. New York, on the other hand, looked like something with just a high degree of variability bouncing up and down around some midpoint, while more recently it seems to be a downward trending bell curve. Could you provide some insight to why that Age 1 charts don't match the juvenile abundance indices, just with some lack.

DR. NELSON: A couple of things. They don't catch as many Age-1 individuals in the seine survey as they do young of the year. Some of that noise could just be the lower numbers that they are catching. Another option is that there is some type of mortality event going on between young of the year to Age 1, which is lowering our expectations for some of these strong year classes. Some mortality between when they are young and Age 1 may be occurring. That is the only thing I can think of.

DR. DREW: Yes, and also just to say, I think on the Age 1 graph in particular, it may also be a little bit of a scale issue for that Maryland that you have one extremely high value back in, I want to say around 1970 that is kind of forcing the rest of those values down a little bit, so if we took that off it might look a little bit more like the high-low-high period that you're seeing.

Maybe just that one point is distorting the graph a little bit. But I think it is also the combination of what Gary said, which is the gear in the survey are less effective for Age 1, and then also some sort of vary. There is a strong correlation between the Age 1 and the young of year, and that is why we do use both. But there may be sort of a disconnect in terms of the final realized Age 1 recruitment there.

MR. NOWALSKY: I appreciate that and that comment you made about the chart potentially being distorted by the scale, brings me to my second question. When we look at overall recruitment, we see a chart that shows a lot of

recruitment years. The majority of recruitment years across the time series below the time series mean, but yet that time series mean is heavily influenced by a handful of very high recruitment years.

If not for those years, is there some statistical analysis that you would consider looking at that would remove some outliers or something? Some other statistical insight you might be able to provide here as another way of looking at this recruitment chart, as opposed to just a bunch of years below a time series mean, knowing that that mean is used by some very high outliers.

DR. NELSON: When we picked, I don't know if you recall this, but when we developed what was meant by a low recruitment period, which were used in the projections, we did what was called a change point analysis, which is a statistical method for looking for major changes within a time series. We have done that, and it turned out that the area from 2008 up to present was basically a regime change, if you will. That is all I can offer, unless I am misunderstanding your question. What other statistics are you looking for?

MR. NOWALSKY: What I'm just looking for is some other way to possibly interpret this information that would indicate that there is perhaps more stability in the fishery with regards to recruitment. The things youngest falls into comment, but answering the question that I was just asked. I see a recruitment chart here that sees some periods of very high recruitment.

But if you didn't have some of those super high years, that recruitment mean would be lower, and maybe you would have a different interpretation of recruitment. When I look at the juvenile abundance index graphs and the Year 1s, juveniles Year 0s are now spawning, Year 1s are now spawning. But you have to have Year 1s in order to eventually have spawning fish.

When I see particularly the Maryland Age 1, seemingly having a more static line, it just gives me pause to think about, what are we really seeing here? Yes, there is no doubt that there are some very low young of year issues here. We need to be very concerned about them. But it just gives me pause to say, what am I really looking at?

Why do I see kind of the Maryland Age 1s seemingly flatline? If I took out some of the outliers of recruitment, is recruitment necessarily on the precipice of disaster. I think that is the things I'm looking at, and looking for some additional scientific explanation for what I'm kind of looking at purely from a graphical perspective in my mind. I appreciate that.

DR. DREW: I don't know if Gary's response answered your question, but I think the regime analysis is maybe what you were looking for, which suggests that there have been periods of higher abundance and then periods of lower abundance, in terms of that recruitment from that index and that index is strongly correlated with both the estimates of recruitment from the model, but then it's also been strongly correlated with the catch in the Bay lagged a few years.

That young of year index is tracking some meaningful measure of the population. But for sure there are issues of noise and of what is the long-term trend, versus what sort of a period that we're in right now. This is just us trying to synthesize the data that we're getting from the indices, but then also from the catch at age data and things like that. Seeing or not seeing those year classes move through contribute to our overall perception of recruitment in the population.

CHAIR WARE: Adam, I'm going to go to the next person if that is okay. Doug Grout.

MR. GROUT: I'm going to pass and save my question for another time.

CHAIR WARE: Nichola Meserve.

MS. MESERVE: Thank you, Gary, for the presentation. I know the TC graph, the one with the selectivity for the time block in 2023, and I'm wondering if because the Board's action in 2023 narrowed within the prior slot that was easier for the TC and SAS to deal with than if the Board had gone to a really high minimum size, or moved to a slot limit below the 28-inch minimum size.

I'm just looking ahead to the next assessment, and 2025 being the terminal year and how our future management decisions might put the TC in a similar spot of gearing the selectivity curve. You know would one of those other minimum size scenarios have made it more difficult for the SAS to estimate the selectivity? I can try wording that again if it wasn't clear, or catch you offline, if I know we're maybe running out of time or getting behind.

DR. NELSON: Yes, I'm not sure I understood. Katie might.

DR. DREW: Maybe I do, maybe I don't. I'm just going to jump in here with some thoughts, and you can tell me if I have misinterpreted. I think this was less about what the specific management change was, and more about the fact that the model only has one year of data to try to figure that out. It is trying to separate the effects of, we don't see this many fish in the population, is that because there are less in the catch? Is that because there is less in the population or is that because they are not vulnerable to the fishery as much.

With only one year of data, it basically can't tell that difference, and so it picks one. In this case it didn't really reflect what we thought the logical response of the fishery would be. That's why we sort of thought that was very uncertain, and didn't go with it. Moving forward, you know obviously the more management changes we have in a small amount of time, the more of a challenge that will be for this particular model.

I think looking ahead to the benchmark, one of the options we're considering is a state-space model like WHAM, which allows for random effects on selectivity, which can maybe get around these short changes in selectivity, or handle them more effectively than our current model, which requires the estimation of specific parameters for selectivities for both of these fleets.

Not to overpromise on that, but I think I certainly wouldn't want managers to feel held back from any kind of action out of concerns for the stock assessment, and rather that we will try to go forward with an alternative approach to kind of deal with some of these challenges.

CHAIR WARE: John Clark.

MR. CLARK: Thank you for the presentation and all the amazing analysis. I'm glad that SSB graph is up there, because it just reminds me. I mean we've been cutting now; this is the 10th anniversary of when we started cutting back. That was that 25 percent cut, followed by an 18 percent cut, followed by what, another 15? I mean it's just been a bunch of cuts, and one thing that you see when you look at the SSB is that it seems to be following a natural population cycle, going up and down. I'm just curious, I mean we have this arbitrary goal of keeping it at a certain level, and yet the boom in the population began when the population was what, maybe a quarter of what it is now. I mean we can't guarantee anything by just keeping the spawning population at a very high level, because we're still not sure all the factors that lead to the big year classes, correct? I mean it just seems like as a management has to weigh both sides of this, of course we want to be cautious, but there is a point where you might be foregoing fish that could be caught in the pursuit of trying to keep a stock at a level that you think is necessary.

But in the meantime, as we've heard, people are going out of business and we are seeing a lot of people that are hurting. I mean I know we hear it from our commercial guys all the time, they've taken since 2014 the quota has been cut almost in half. You know that definitely comes out of their

pockets. The question I just have is, do we have any sense of whether the stock will recover, if indeed it did, SSB went down even further than it is now. I mean it seems like it's still very possible, based on these cycles that it could be coming back, right?

DR. DREW: I would say, Number 1, keep in mind that spawning stock biomass is also the biomass that you were fishing on, especially in the ocean fishery. It's not that this is some separate pool of biomass that exists solely to provide recruitment. When that biomass comes down that also means lower catch rates and lower availability of fish for the fishery.

But second of all, you're right that I think when we saw this boom period in spawning stock biomass, that was supported by very strong year classes that we haven't seen the likes of since, and allowed a high fishing mortality rate, and was still able to stay at those higher levels. Into the future, we have, it looks like, a period of poor recruitment coming through, which means that if we want to stay at this level, we will not be able to sustain that same level of fishing pressure that we did earlier in the time series.

I think it is up to the Board to maybe decide what kind of tradeoffs that you are willing to make, in terms of again the benchmark is coming up, if we want to reevaluate our reference points, and do we want to expect a lower spawning stock biomass to allow a higher fishing effort, with the recognition though that that is going to mean lower catch rates, such as lower abundance, fewer fish in the water, even if you are allowed to harvest them.

I think that is definitely a management question, in terms of what do you want this stock to look like? You can, the relationship between spawning stock biomass and recruitment seems very weak. You have years of poor recruitment with high SSB and vice versa. In terms of, are you endangering potential future recruitment by setting your SSB target lower. I think that is hard to foresee, and I think it is also hard to perceive what recruitment is going to be like in the next five to ten years.

Like are we, we've seen this cycle in the indices before, periods of high recruitment followed by low recruitment followed by high recruitment. Are we at the bottom of a low recruitment cycle, and that is going to come back up when environmental conditions change and improve, or is this a new normal?

MR. CLARK: Thanks, Katie, yes, I was just thinking more in terms of the fact that one of the items that was in the action plan was looking at a recreational demand model for striped bass. I think something like that is very important. I mean I think we have been very precautionary about the size of the stock. But we also have to be precautionary about what we're doing to the people who depend on these fish. I think it is the success story that the stock came back to historic high level, but we're looking at some very difficult decisions.

I know that. I mean as I said, we've been cutting and cutting and cutting, and the spawning stock biomass, based on what we're seeing here, is still much better than it was, you know if we go back to the eighties, of course. But I understand the concerns that it has come down. But as I said, I just think that we do have to start looking at the socioeconomic side of this at this point too.

Because it's just the way this is happening now, I'm sure there is going to be push, like for more cuts. You know we're already looking at a 3-inch slot limit. That really takes the wind out of the sails of a lot of anglers to say like, what the heck, 3 inches and 1 fish. But I see that is probably for the next discussion, so I'll leave it there.

CHAIR WARE: I have Jay and then Mike Luisi, and then I'm going to go to the public for a few questions on the assessment. Just trying to keep folks focused on questions at this point, because we are getting on that hour.

DR. McNAMEE: I'm being a little bold here. I'm actually going to jump back to the discussion with Adam, and so Adam, I apologize if I'm not understanding what you were getting at. But my understanding what Adam was suggesting to the group is, and actually if you could flip back to the bar plot that had the recruitment with the mean. It was like a dashed blue line on it. I think what Adam was getting at was the blue line, which is represented as a mean, is influenced by extreme values.
I think it was the visualization that he was suggesting might be misleading, because of some extreme values and high recruitment that occurred. That is my interpretation of what he was suggesting. I will offer that an easy solution to that would be to just represent it as a median. I think, just in my mind's eye, it's not back up there yet, but it looked pretty symmetrical to me, so I'm guessing the mean and the median are going to be really close anyways. But that would resolve that question.

CHAIR WARE: Mike Luisi.

MR. LUISI: I wasn't going to bring up the benchmark assessment, but since it has been talked about, I thought I would ask a question, given the conversation that you and I had a week or two ago. I think, and building upon what has already been stated. You already mentioned the fact that the Chesapeake Bay has been the source for striped bass for a long time.

We're seeing changes in the environment, how those environmental conditions are playing a role in the production is something I think that we need to think harder about, and understand more thoroughly. I don't know that, well if we continue to have the same environmental conditions that we have now for the next decade, my assumption is that we're not going to see a great deal of production in the Chesapeake Bay if things stay the way they are. I just want to understand from you, Katie, or Gary. With the benchmark on the horizon, I know that it is a few years away, but that is still a horizon in my mind. What avenue will the Board have to help direct work on that benchmark around the concepts of biological reference points, the new normal, if what we're seeing now is the new normal.

Will we have the opportunity to work on terms of reference or work with the science community on helping us answer some of those questions, the next time we come around and we get another assessment update. Just any feedback at this point now I think can help, maybe for some of us think about what is coming. We know that we need to address issues now, but the thought about the future is always a good thing, I think to keep the future in mind.

DR. DREW: Yes, for sure. The Board will obviously approve the terms of reference that are developed for this assessment, and we'll have a chance to add or reword or modify anything in there, to provide the SAS with the guidance on what you guys are looking for. I think we would also come back to you.

I think we tried to do this for the previous benchmark and did not get a lot of traction on the idea of, what do you guys want to see if we modify the reference points. Like what are your objectives, what are you looking for, in terms of what is a good stock status for you? What kind of guidance do you want to give us, in terms of reference points, so that we can develop a reference point that meets your management needs.

I would imagine that we are going to do this, probably sooner rather than later, but starting next year, as we focus on drafting the terms of reference and providing guidance to the Technical Committee and the SAS about what type or what considerations you would like to see us address in the reference points.

CHAIR WARE: We're going to go to the public. I'm going to try to take three questions from the public on the assessment. We'll look for two in the room here, and then we have one, maybe two online, so maybe we'll do four. Is there anyone in the room

that would like to ask a question about the stock assessment? I see one hand. Okay, Captain Robert Newberry, you get the question in the room, and we'll look on the webinar and call those folks out.

CAPTAIN NEWBERRY: My name is Captain Robert Newberry; I'm Chairman of Delmarva Fisheries. The question, we've been hearing today specifically that the young of the year is affecting the SSB and everything else in there. My million-dollar question is, with the major predation problem we have in the Chesapeake.

Not only with the blue catfish, but with the cormorants, which by the way is the U.S. Fish and Wildlife stated they are at a toxic level, and are destroying our fishery. These predations between the blue cats the cormorants, the dolphin and pollution, are these figured into when you do the young of the year when you see the decrease in it? Could it possibly be with the influx and the increase of the predation on the small fish?

DR. DREW: That's a great question. Things like the cormorants and the dolphins are probably hitting them after we've measured them as young of year, because they are very small when we're measuring those young of year. Those birds and those dolphins are probably hitting slightly older year classes. They may be contributing to that difference between what we see as young of year and what we see as Age 1. The blue catfish, I think is definitely a more unclear source of mortality, in terms of how much they overlap with the striped bass, and how much they are consuming. I think that it's not something that we have in the model right now, but it's I think something we could look into, in terms of the potential consumption or overlap at the next benchmark.

CAPTAIN NEWBERRY: If I may, with the Chairman's permission. In the months of May, June, and July, I live on the upper part of the Chester River, over in Queen Anne's County. The amount of cormorants in the past five years has increased so bad, I've had to have my floating dock replaced twice in two years.

Majority of the trees on the shoreline are gone from them roosting in them. But the thing is, is the number of striped bass. The small striped bass up in my part of the river right now, and I showed some of the Commission members here pictures. When I set a minnow trap, handfuls of them every morning. I go down, and now we have a machine that sprays water on it. I've got a 30 by 30 floating dock, there are 500, 600 cormorants on it every morning, and they are just gorging on fish.

I think that needs to be looked at. I understand when you said it was in the small pre-larval stage or post-larval stage, yes. But the rapidly they grow, the minute they are in F-1, those birds are getting them. One thing we have to figure out. We have been able to eradicate these fish, but our state in 2018 we met, and they were going to give us eradication permits. Our state has failed since 2018 to file these permits. I just want to make that. Thank you very much.

CHAIR WARE: I'm going to go on the webinar. Patrick Paquette, this is for a question on the stock assessment.

MR. PATRICK PAQUETTE: Thank you, Patrick Paquette; American Striped Bass Association, and a member of the Striped Bass AP. My question was sort of getting at, it's a two-part question, which really is an underlying one, without a comment about management. My question for the stock assessment presentation is, was there any evidence or data that informs or that suggests that the spawning stock biomass is producing, that the females are producing less eggs?

A second part of that, is there any evidence besides the shift, the traumatic change in environmental condition that suggests another reason for eggs not surviving. I guess the real question I'm asking is, is there any evidence to tell us that we're not looking at a new slightly long term normal that you guys have been referring to?

DR. NELSON: Hey Patrick. We don't have any information on eggs, or any changes of eggs in females. I think there have only been a couple studies done in the past on fecundity. We would definitely have to have a long-term study looking at that, in order to determine if there has been. What was the second part?

MR. PAQUETTE: The second part of the question was related to any information that outside of environmental conditions that could lead to a reason for less juveniles being produced from those eggs.

DR. NELSON: My former boss, Mike Armstrong, always ranted on the changes going on weather wise, and the changes in what is called the turbidity max within an estuary. It's a place where the freshwater and salt meet, and with the decline in rainfall, well he always believed that that has been an issue with egg survival in the area that they can't survive in. I don't know of any studies done with striped bass, someone in the room might, but that could be a potential factor affecting egg survival too.

CHAIR WARE: Next we have Mark Ellis.

MR. MARK ELLIS: Hi, can you hear me?

CHAIR WARE: We can, yes.

MR. ELLIS: Oh cool, thanks, guys. Thanks very much for taking my question. Quick comment and then I have a question for the Commission. I've listened very carefully since this morning, we talked about predation, equipment, catch mortality. I think we all know that all those things would help reduce mortality. But I don't see that any of us feel that it's going to move the needle as fast as we need to.

I heard some of the science today, I believe it was Dr. Nelson confirmed what we've seen empirically that there are more big fish around this year. Our group is seeing double or triple the catch over 28 inches, but there are not any little fish. Less than 10 percent of what we caught this year was under 28 inches. It just seems to me, get away from the science, take a 30,000-foot view. We need to kill less breeding fish until we can have more grow to replace them.

We're just targeting the very big breeding fish that we need, so that when we get some young of the year indexes that may help the breeding, we'll have a chance at some recovery. It's broke my heart. I've listened to commercial fishermen, I've listened to poor catch, what have you. You guys are making decisions that are going to affect a lot of lives and livelihoods.

My question to Madam Chair is, are you as the leader of the Commission committed this year to make the drastic kill and harvest go down, so that we have some fighting chance? Otherwise, these breeders are going to be gone in two or three years, and everybody is going to lose, and you're going to hurt a lot of families.

CHAIR WARE: Thanks, Mark, my role as Chair is to help guide this Board to a decision, not to make the decision myself.

MR. ELLIS: Okay, could another Board member answer that? Are you committed to take drastic measure?

CHAIR WARE: I appreciate that, we're going to take it as a comment. Okay, so we are going to go back to the Board for Dennis Abbott, and then we're going to take a break. I'm sensing a need for a break. We'll go to Dennis, and then go from there.

MR. ABBOTT: You might need a break after I finish speaking. I thank Dr. Nelson for his presentation. It's just a shame that I can't understand it all. But I go back to the very beginning of this when Marty Gary talked about the 6 years of poor recruitment. That is the gorilla in the room. My question would be, and then I'll have a few comments.

Have we ever seen 6 years of bad recruitment? I don't want you to answer it yet. But with 6 years of bad recruitment, we earlier in our meeting heard from the Bay fishermen about low catch limits and

so on and so forth, and I'm viewing the fact in my mind that there won't be a lot of fish available for them to catch, whether they can catch 1, 2, 3 or what the slot limit is.

We keep fighting this, and the previous gentleman said, you know we have to keep building up the spawning stock biomass. There is no real number that we will be able to reach, I don't think, that will provide us with the proper amount of recruitment. Regardless of where we are right now, I think we're in probably one of the most difficult positions that we've ever been in in striped bass management, in my simple mind.

I don't know where we're going to go, but we have to listen. Not listen, but we have to consider the socioeconomic problems that we're causing. Also, keeping in mind that we are resource managers, and being a resource manager. You know I have always felt sitting at this table that my job first is to protect the resource. If we protect the resource then we will protect the fishermen, so I will leave it at that, thank you.

CHAIR WARE: I think there was a question in there about 6 years of recruitment. I don't know if you guys want to answer that. Otherwise, we'll move on.

DR. DREW: Yes, we have seen long strings of years of poor recruitment during the seventies and eighties, when the stock was at very low levels.

CHAIR WARE: Thanks, Katie. We're going to take a break. I just want to set expectation of what we still have ahead. We have a presentation on projections, I assume some questions on that. Then I'm sure a lively discussion on what we do next. If you need a cup of coffee or a sweet treat, this is your chance to get it, because we've got a long way to go, so thank you. Ten-minute break.

(Whereupon a recess was taken)

CHAIR WARE: All right, the Board is ending its break. We're reconvening here. We are now going to move into a presentation on the projections coming out of the assessment. It is going to be, my understanding is a tag-team presentation with Gary and Tyler. Then we'll go into Board questions and Board discussion. Gary, whenever you're ready, no rush. We will start the projection presentation.

DR. NELSON: We're going to show you, explain what we've done for the projections. Since the space model does not provide a selectivity curve for 2023, since we combined the model into one, and we know it is probably slightly different than the resulting curve from that model, and also that the TC wasn't happy with the alternate model, which had a separate selectivity curve in 2023. We needed to come up with a selectivity curve that we could use in the projections.

This is pertaining particularly for 2024, since we're starting on our projections in that year. We needed to come up with a way of developing, we thought the best way of doing that was to use a technique in which we use age-length keys that are, I won't say projected, but are represented by catch numbers within those age-length keys. We used that information and adjust it for the regulations that we would have in both the Bay and the Ocean.

Then we come up with an assumed selectivity pattern, which we used in the projections going forward. I don't think I have a fixed slide later maybe showing that. No, I don't think so. Once we developed that, we had to develop estimates, starting estimates of abundance in 2024. The way we did that was actually to use the 2003 estimates of age 1 abundance from the single time block model, because we can get those numbers from that.

It was the alternate model that we used, because the time block was 2020 to '22, so we could then use those numbers to get to January, 2023. We have those numbers from the model. We had catch at age, so we could solve to get the values of abundance for 2024. Those are the numbers we used.

Now, in order to go forward though, we would need some type of F estimate for 2024, and we had no idea what catch was in 2024 at this time. We developed two catch estimates to allow us to estimate that fully recruited F 2024, given this hybrid selectivity that we created. The catch number of fish estimates that we came up with, basically had a high estimate and a low estimate.

The high estimate of 5.86 million fish basically represented what we had expected based on the reductions from Addendum II from the 2022 data, and that was a 13.7 percent reduction. Then our low catch estimate was 3.9 million fish, and this was based on expanding the preliminary MRIP data for 2024.

At the time we only had Waves 2 through 3, and we extended that based on the ratio of the previous years to get the full year estimate. I think I looked at with Wave 4, and it came out to be about the same number, so that was pretty good. We used those catch numbers in the projection to estimate what the F had to be in 2024.

Given the high and low catch values to get a fully recruited F for the high scenario at 0.195, and for the low of 0.126, if this is all making sense. Then we ran several projection scenarios. We looked at the high catch scenario for 2024, and used that F that we determined as the F that is projected in the remaining years 2025 and later.

Then we looked at still in 2024, using 0.195, then we used the target value from the reference point in 2025 and later. Then we did something different this year, is we actually developed what we called F rebuild. This is essentially what the F would be required to rebuild the spawning stock biomass to the target level by 2029. We did that by solving for F over the years 2025 up to 2029. Then we did pretty much the same thing for the low catch scenario, but we started F in 2024 at 0.126. Almost incomprehensible on this slide is the graph here, really hard to see. Yes, that's easier. Starting at the top of the projections, the high removal scenario is always in orange.

The low removal scenario is always in blue. Starting at the top graph, that is what the F would have to be starting in 2025, in order to rebuild the spawning stock biomass to the target value by 2029. If you look at the table on the right, the top is for the high catch scenario, and the bottom is the low catch scenario.

Our rebuild, the F rebuild for the high catch scenario was 0.111. That was to get a probability of the SSB being at or above the target. Then for the low catch scenario, the F rebuild was 0.126, and that was about the same as the F we saw for 2024. It's the 2024 value for the low catch scenario is the same as F rebuild.

The next slide down, it shows you what happens if we fished at F target starting in 2025 and going forward. We don't really reach to the target value, and then the tables on the right you can see that the target value was 0.171 for both. This is from the reference point target, and we have very little chance of rebuilding, based on that F value.

Then at the last slide, sorry last figure at the bottom. This is showing what we would get, the protections we would get if we fished at the values we calculated for 2024, which was 0.195 for the high catch scenario, and 0.126 for the low. You can see for the high scenario that SSB peaks a little bit near 2026 and then drops slightly under the threshold.

But the SSB increases again to both, and reaches the target by 2029 here and beyond. People, I'm going to, before it's asked, some people have asked, so why if we're fishing at F target shown in this graph, why didn't we reach the target? The reason being is the way the reference points are developed.

We have an SSB target that we want to reach, and in order to get the F associated with that, we do a projection for 100 years. We start at 2024, I guess,

'23, and we run that out a hundred years. We're resampling from our low recruitment time series of Age 1 abundances, that would be the recruitment.

That includes values from 2008 up to 2023. You have within that time series high year classes, 2011 is in there, 2015, and low year classes. On average yes, so I'll just take there. When you project forward, because of those values, the population is going to increase really rapidly, and be able to sustain a higher F value, in this case the 0.17. Now, because it is not increasing in our current projections, it's because those large year classes have already moved through the population, so there are no large year classes.

In our projections here, it's really just the moderate to the low year classes that are in here. There is kind of a disparity there between the recruitment assumptions going between our current projections and the reference point. I hope that makes sense. Anyway, that is why you don't see that. I just wanted to point out, that value was the line represents where 2029 lays, so you can see that where the SSB reaches the target value on that horizontal black line. The TC also wanted to look at a few other scenarios, and this is based on the low catch assumption, the low removals scenario.

But they wanted to look at what would happen if we saw a year class affect like the 2018 coming through. What level of F would we have to experience, what would happen to the trajectory to get to the SSB target if we had this increase in response to that increase in year class? In this slide we have four different scenarios.

The first one is the one that you've seen already, and that is the green one, which reflects the F at 2024, which is 0.126 under that scenario, and used forward. You see in the green line, hopefully, that it reaches the target by 2029. Then we have where we increase F in response to the 2018-year class coming through.

You can see that it does go up, but it's slightly, because you're fishing at a higher fishing rate slightly at the beginning. The SSB doesn't quite reach the target, pretty close. The rest of the scenarios, if you increase the F a little bit more right at the beginning there, and some of these scenarios you don't get close to what the target should be. That was kind of an academic exercise, just to give you guys a feel for what would happen if a year class kicked in.

I guess that's all I have. Oh, sorry, one last slide. Just in conclusion again, stocks overfished but overfishing isn't occurring. Jut to give you some of the major uncertainties in this approach it's the selectivity issue going on in 2023 that we can't really estimate well. The selectivity pattern that we did use going forward was estimated outside of the model using the data. Also, we don't know what the catch is in 2024. The Fs that will be in 2025 and beyond. That's all I have. I guess Tyler is going to continue.

TECHNICAL COMMITTEE REPORT ON CONSIDERATIONS FOR 2024 MANAGEMENT MEASURES

MR. GRABOWSKI: Yes, thanks, Gary. This presentation will pretty much follow up to what Gary just presented on with similar slides or some identical slides. But a little bit more background, in terms of TC discussion on these different matters. The TC and SAS discussed the likelihood of different projection scenarios and the considerations for management. That is included in supplemental memos that the Board can review.

Like Gary said, there are sources of uncertainty for the stock rebuilding trajectory, including the 2024 removals and F for the subsequent years from 2025 to 2029. Like Gary just mentioned, there are two scenarios for removals of 2024, the high removal scenario, based on a projection, and a low removal based on preliminary MRIP catch data from Waves 2 and 3. The TC and SAS considered that this low

removal scenario to be more likely than the high scenario.

Now you can see in these two graphs with the Chesapeake Bay on the left-hand side, and the ocean on the right-hand side. The low removal scenario is based on realized data through mid-2024, whereas the high removal scenario was based on pre 2024 calculations. As you can see, the black is Waves 2 and 3 estimates from the most recent years, with the last one being Waves 2 and 3 2024. For Waves 4 through 6 it would have to dramatically increase to mimic high F in 2024, and it seems unlikely that that would happen. That is why the TC went with a low removal scenario as opposed to the high removal scenarios. What the Board should focus on is that the above average 2018-year class will be Age 7 in 2025, similar to what the 2015-year class is in 2022, and how that may impact F for 2025 through 2029. What we saw in 2022 was that there was a large increase in both harvest and F.

While it took 2021 F as that 2015-year class entered the ocean fishery, followed by a decrease in ’23, and then likely what we’re seeing in 2024 as they move out of the slot fishery. As Gary presented on regarding F for 2025 through 2029, the TC and SAS considered 3 scenarios of increases in F, and then a return to F or a constant F, depending on the increases.

What the TC and SAS agreed upon is that there would be a moderate increase in F in 2025 as the 2018s enter the ocean fishery. But then F would return to 2024 levels for ’26 through 2029, given that these fish would then begin to exit the slot fishery in 2025 and beyond. For this scenario, as the 2018s enter the ocean fishery, the TC assumed that a moderate increase in F would occur in 20225, roughly 17 percent, and this would be the same magnitude as was seen from ’21 to ’23, with the 2015s in the narrower slot due to the emergency action.

Theis may be an overestimate, since the 2018s are not as strong as the 2015s. We would expect F to decrease as the 2018s grow out of the ocean slot, and the lack of subsequent year classes that follow them. That is why we would expect F to decrease and stabilize through 2029 from 2026. A couple unlikely scenarios, unlikely that F would remain constant from 2024 to 2025, given the rationale that I just explained.

It is also unlikely that F would remain at increased rate from 2026 through 2029, given that the ‘18s are expected to grow out of that narrow slot. However, F could remain elevated due to the decrease in abundance, lower removals from a smaller population. Then it’s also unlikely that F would increase as much as was seen in 2022, with the 2015-year class and the wider slot limit.

This is just some rebuilding probabilities, looking at how F changes, whether it be through a low increase and then remaining a low, or a low to moderate increase. As you can see, the scenario that the TC kind of landed on to give a rebuilding probability of 43 percent by 2029 was that F was low in 2024, increases in 2025 only, and then returns to low levels for 2026 through 2029.

Gary just presented on this, so I’m going to skip over this, just highlighting again the different rebuilding scenarios. The theme of this has been considering uncertainty, so there is a little bit more uncertainty that the Board should consider. Angler behavior and fish availability are still sources of uncertainty, and so the TC and SAS considers the scenario, F increasing like I said in 2025, but then subsequently decreasing to be the most likely scenario.

However, the magnitude of those changes, in essence the exact F values are highly uncertain moving forward. To have a 50 percent or greater probability of rebuilding by 2029, F will have to decline to levels that would be the lowest since 1994. This could result from the narrow slot limit and lack of strong year classes available.

Fewer fish will be available to harvest as these weaker year classes enter the fishery following the 2018s, which could result in lower effort and lower F, or F may not decrease as much as expected, if removals remain constant on those weaker year classes that begin to enter the slot fishery. Like Gary mentioned and discussed at length, there is some uncertainty around how well the 2024 selectivity curve represents actual selectivity, given that management was changed in 2023, and that additional years of data under the same management regulations would certainly form a better estimate of selectivity for upcoming assessments.

That leads me to potential management options that we would, from the TC, offer the Board. The TC and SAS calculated estimated reductions for a range of recreational size limit changes for 2025, and various recreational harvest closure options for reference. After further guidance from the Board on next steps for management, additional options above and beyond what was contained in supplemental materials could be analyzed.

For the size limit analysis, MRIP data from past years was used to represent 2025 fish availability, 2018 was used for the Ocean, to represent a strong year class at Age 7, which is the 2011-year class as a proxy. This was used because there was no maximum size limit on the fishery, so that we can explore a wide array of options, including higher minimum size limits.

Then for the Chesapeake Bay, the 2011 MRIP data was used to represent when there was not a prominent year class available to the Bay fishery. Then for the harvest closure analysis, MRIP data from 2021 and 2022 were used to capture recent years under the slot limit and the recent closures in the Chesapeake Bay.

The Board should consider the tradeoffs of allowing harvest of larger fish vs. maintaining the current slot limit targeting smaller fish in the ocean. If ocean harvest remains in the current slot, the remaining 2015 will be protected, as they pretty much exited the 28 to less than 31-inch slot. But the incoming 2018-year class will be subject to harvest.

However, if harvest were to be shifted to larger individuals, the incoming 2018s would be protected, but the larger 2015s would then be subject to harvest again. There was also some discussion at the TC level about what about an ocean size limit below 28 inches, and so 28 inches has been the ocean minimum size since the stock was declared rebuilt.

It is unclear to the TC whether the biological benefits of reducing harvest of the remaining 2015 to 2018s would outweigh the biological risk of targeting immature fish under 28 inches. We would also need alternative data sources to calculate options. For example, state law inputs, given that harvest has been occurring on individuals larger than 28 inches.

Most of the size limits evaluated, particularly in the ocean, are estimated to achieve less than a 6 percent reduction. The TC and SAS do not believe that a regulation change designed to have such a small reduction would result in any meaningful changes in removals, given the typical sources of uncertainty in these analyses.

The size limit could be combined with a seasonal closure for a higher estimated cumulative reduction, but the benefit of changing to a size limit with such a small estimated reduction may be limited. When considering possible management response, the Board should consider its risk tolerance, and the level of risk the Board is willing to accept is a management decision. In the coming months, the TC could provide updated projections incorporating real life 2024 removals for the entire year, other than Wave 6, once the 2024 MRIP data are available. I did want to note that the benchmark stock assessment work will begin, as Katie mentioned, early next year, with peer review scheduled in spring of 2027. With that I will take any questions.

CONSIDER MANAGEMENT RESPONSE

CHAIR WARE: Thank you both for that great presentation. Before we go into Board questions, I'm envisioning we'll quickly move into Board comments and discussion on management. I'm just going to ask staff two questions that I heard come up quite frequently, to hopefully set some expectations here, and a common understanding of what is required. My first question is, the assessment noted the F target was tripped. What does that mean, in terms of the FMP requirement and the different projections for the 2024 removals?

MS. FRANKE: Yes, as Chair mentioned, one of the management triggers in the FMP was tripped, this was the F target trigger, so since F was above the target in 2022 and 2023, while the stock was overfished. That trigger is tripped and the Board is required to reduce F to the target. However, for 2024, the projections indicate that F in 2024 might actually be below the target. Following that year of being above the target, we might actually be below the target in 2024.

I think from here, you know once 2024 data are available early next year, we could come back to the Board and say, you know based on preliminary removals it looks like we were below the target, or if we were not below the target and above the target, in fact, then the Board would need to address that. But what I want to emphasize here is that F target is different than F rebuild. In order to rebuild the stock that's a lower, you need a lower fishing mortality rate than the target.

CHAIR WARE: My second question is, does the Board action provision of Addendum II apply?

MS. FRANKE: Yes, so in Addendum II it states that if a stock assessment indicates the stock is not projected to rebuild with a probability of at least 50 percent, then the Board could respond with Board action, which means that the Board could change measures at a Board meeting without an addendum, and yes, there are. Of course, the TC presented several projections, and some of those projections, most of them indicate the stock will not rebuild with that 50 percent probability. That Board action provision is in play here.

CHAIR WARE: Okay, thank you, hopefully that was semi helpful. We're going to go ask the Board now. I'm going to try and focus this on questions just a short while here, so questions on the projections, and then we'll move into discussion. Joe Cimino.

MR. JOE CIMINO: Thank you both for the presentations. I'm not sure who this is going to, and I think maybe the ramifications of the question go beyond just the projections. The idea of a model struggling with a selectivity block because of one data point. If we were to react and do that again, can you kind of speak to the ramifications of them having two single years? How far, or I guess what kind of spot does that put you into giving us information that seems appropriate?

DR. NELSON: I think one of the effects is, if you keep changing regulations on us we can't capture the proper selectivity pattern. The model is just not capable of doing that well with only one year of data, so if you change something again next year, we're going to be in the same spot, I think, as we are this year.

DR. DREW: I think just to add on to that. I would also say, probably if you change a season, we would assume the selectivity stays the same. If you're keeping the same size limits but change the season that's going to have a much less of an effect on selectivity than an additional change to the size limit, for example.

I think as was sort of related to Nichola's question before. You know for the benchmark we do plan to look at some alternative model structures that could potentially handle that sort of more frequent change in regulation a little more easily. It may be less of an issue in the future. But definitely the potential to increase uncertainty in some of these stock assessment results.

CHAIR WARE: Mike Luisi.

MR. LUISI: This question is for Tyler. I wonder if you could go back to your slide that had the summary of the projection scenarios on it, somebody could go back to that. I think it was a table with four scenarios, and then there was the probability of achieving spawning stock biomass on the far-right side. Yes, there we go. Tyler, I wonder if you could help me think through what the Technical Committee was working on.

Under the first scenario, you have a 50 percent probability of achieving the spawning stock biomass target with a 4 percent reduction in 2025. Why are there no additional reduction suggestions in the most likely scenario, probably, which is highlighted there, and then the other two under the high catch limit? Did you work on or did the Technical Committee look at what the reduction that would be required in 2025, to achieve that rebuilding probability under those alternative scenarios?

MS. FRANKE: Yes, I'm just going to jump in here. Yes, for that first scenario, if you assume that constant fishing mortality from 2024 forward, in order to maintain that constant F through '24 to '25. You would need a 4 percent reduction in removals, so that is where that is coming from. We did, staff did some calculations if you are interested, in a reduction based on if F increases in '25, due to those 2018s entering the slot. They weren't provided in the memo, but we do have those calculations if you are interested.

CHAIR WARE: Dave Sikorski.

MR. SIKORSKI: I think I heard this week that preliminary Wave 4 data might be available. Has anybody reviewed that and does it change that 4 percent much, or what more clarity could you provide us?

DR. DREW: Yes, we looked at it, and basically if you project from using what we've already seen for Waves 2 through 4, you get a number that is very similar to the number that we used for these projections. I think it's slightly lower, like maybe 6 percent lower than what we used in these projections. We have not redone the projections yet with that number, so I would say to wait for data is more evidence that the low scenario is correct, and as it is sort of coming out to a similar level that we used in these projections maybe slightly lower

CHAIR WARE: Doug Grout.

MR. GROUT: My question is revolving around the first scenario there, where we have constant F at 2024, the low estimates of catch, and requires a 4 percent reduction in 2025, because primarily we've got this 2018 above average year class coming through. But the Technical Committee did some various size limit changes and 14-day harvest closures. A number of those size limit changes are at least projected to have greater than a 4 percent reduction in 2025.

Yet the Technical Committee said those are somewhat unlikely to occur to achieve that, because it's such a small reduction. I guess I don't understand that. If you went through these processes to come up with percent reductions with these various size limits, both in the ocean and Chesapeake Bay. Am I missing something here? Why couldn't we just pick one of those size limits in the Bay or ocean, and say, okay we've accomplished our goal, getting up to a 50 percent rebuilding probability.

MR. GRABOWSKI: I think with such small reductions, I think the uncertainty associated with them. Well yes, it may be on the surface hypothetically a 5 percent reduction. The uncertainty may be that it actually increases. Not saying it would, but it could increase harvest by a couple percent.

Then even though we required a 4 percent reduction, we projected a 5 percent reduction. Hypothetically it could have increased by 1 percent, or something like that, because it is such a smaller

number. Katie, I guess you can clarify a little bit, but that is more or less. It's the uncertainty of such a small reduction associated with these various management measures.

DR. DREW: Yes, and I think the other issue is that the TC considers it likely that F will increase in 2025. Basically, we need sort of a 4 percent reduction from where we are now, but sort of we expect more catch in 2025, just because of the more availability of that 2018-year class. You would probably, when we did the numbers, you need more than a 4 percent reduction in order to get from, if we keep catch constant from 2024 to plus 2025. We only need a 4 percent reduction to get down to that F rebuild.

If catch goes up in 2025, due to the more availability of the 2018, you're going to need a bigger reduction to get to that F rebuild. The TC considered, you know we're sort of reaching the limits of what we can do, in terms of our confidence in the available data, to say that going down one more inch on the slot limit or going up to those 38 inches is going to give you a 4 percent reduction. That is within the confidence intervals of the MRIP numbers to begin with. Then number 2, you probably need more than the 4 percent if we believe that assumption about the 2025 being higher than 2024.

MR. GROUT: Follow up. Will you be able to provide some other management scenarios that would make you more comfortable that we would achieve that 4 percent reduction, either with size limits or combinations of size limits and season closures?

DR. DREW: I think the consensus from the TC would be that the season closure at this point would be the most effective tool to achieve that reduction, potentially in combination with the size limits, but there is not a lot more juice you can squeeze from those size limit changes.
MR. GROUT: But the seasonal closures, at least on the coast, very few of them even come close to 4 percent.

DR. DREW: In that case we would be looking at longer season closures than were presented here, and I think we would also, this is kind of where we would be looking to the Board to provide us with guidance, in terms of what level of reduction do you want us to strive for, and then number 2, are you looking at no targeting versus no harvest closures?

Do you have any other guidance about like where or when or how to apply these season closures? Are we talking about the regional options? Are we doing state by state? Are we doing a coast wide closure? Those options we did not go down all of those different paths, because there is limited time.

But I think if the Board was interested in pursuing this as an option, and gave us some guidance on what specifically, what you are interested in exploring further. We could definitely do those calculations, and we can come up with some options that would meet your preferred reduction on that front.

CHAIR WARE: Okay, Doug are you all set? I think I'm going to move on if you're okay with that. Okay, we can come back to you if you have lingering questions about this some other time. Is that okay? Okay, Emerson Hasbrouck.

MR. EMERSON C. HASBROUCK: Kind of in follow up to Mike Luisi's question, and maybe I missed something. This question was related to what percent reduction do we need for some of these other scenarios, for instance the one that is highlighted? I think the response was, well the TC calculated those, and they are available, but I'm not sure where they are available.

I read the TC memo the other day, and when I read through it, I saw that you know, there was a 4 percent reduction needed for the first row up there. Then when I was reading the other scenarios, I got to the end of the discussion for each of those scenarios, and my notes to myself were, okay, so how much of a reduction is needed? I don't know, did I miss something here in the response to Mike's question?

DR. DREW: We're going to pull up the calculations that we did. As they are coming up, I want to emphasizes that the TC is really struggling to predict what F is going to be in 2025 through 2029. We consider the scenario where F increases and then decreases to be the most likely scenario.

But in terms of how much it increases and how much it decreases, that is very uncertain to us. We can say that we expect that increase followed by a decrease, due to historical patterns that we've seen in the fishery with strong year classes coming through. We've seen that before. But it's not a consistent increase and it's not a consistent decrease. That 17 percent was based on kind of what we've seen in the past in one scenario. We've seen it increase more; we've seen it increase less. I think the reason we're not emphasizing this in this case, the 14.5 percent cut is what we think is most reasonable, or will get you to F rebuild, if we go from where we are in 2024, which is again based on Waves 2 to 3 of MRIP data.

From there we're going to go up 17 percent in F in 2025, based on some historical precedence, and then we come back down again to where we are in 2024, again where we're not entirely sure where we are, and not entirely sure how much we're going to decrease. Then a 14.5 percent reduction will get you to F rebuild in 2025. I think we didn't put these numbers forward, specifically because we want you guys to think more about what is the uncertainty that we have, and what level of risk tolerance that you guys are willing to take on this.

We can do these numbers, but we don't necessarily want to come up there and say, this is exactly what is going to happen, and if you take this exact cut, you will achieve this exact cut through these season closure measures, and we will be at F rebuild in 2025, and at the FMP target in 2029. I think it's up to you guys, looking at this range of options, looking at these range of potential scenarios. What level of risk are you willing to accept going forward when you make these management decisions?

MR. HASBROUCK: Thank you, Katie, I appreciate that. But I don't think that, or at least myself anyhow, and I'm going to say a collective we for the Board here. I don't think that we can predict the future any better than the Technical Committee, based on what's happened in the past, can predict the future.

I think a prediction of the future, based on what's happened in the past, is our best way forward. I have some confidence in the numbers that you have up here, again based on the statistical procedure that you went through. It seems to be valid. In terms of risk assessment, well, we may have to have a discussion about that.

CHAIR WARE: That was the list I had for questions on projections. Doug Grout, did you want to ask another question? Then we're going to move to discussion.

MR. GROUT: I'm not sure I'll get the answer, but what I was trying to get at with my question was, what is the percent reduction that the Technical Committee and the SAS will feel comfortable in helping us to achieve that 4 percent reduction, realizing we're projecting that maybe we would achieve it with some size limit changes. But you're saying because it's such a small decrease, there is a pretty good probability we're not going to be achieving it, because it is so small. What is the larger? Is there a larger percent increase that we need to take to give us a higher probability of obtaining that 4 percent reduction?

DR. DREW: I think part of the issue is, we don't have a good way to measure the uncertainty on the size and bag limit changes. I think we have all seen recently that we can project what, you know we put in the size limit change, we predict a reduction. We usually get relatively, we get roughly close, but we're not always on the ball, in terms of our projections about what type of a reduction we're going to see. Unlike the projection here, we don't necessarily have a way to quantify the uncertainty

around these size and bag limit calculations. We know we're working with uncertain MRIP data, as well as uncertainty in the methodology that we can't fully capture. I think the TC would have felt, you know there is some evidence from other studies that something maybe in the 10 to 20 percent range of a reduction is really like the minimum of what you can confidently calculate with some of these data.

I think the TC would not feel comfortable with a method that gave you a less than 10 percent change, in terms of, I think the TC would feel, I don't want to speak too much for the TC, because we didn't talk specifically about some of these, like that 14.5 percent. How confident would we feel in that versus a larger reduction? But I think that is probably closer to the range that we would feel that we could implement something that would not just be lost in statistical noise.

CHAIR WARE: Okay, glad we worked that out. I saw Adam's hand go up. I am going to signal we are transitioning into discussion here, so if you want to participate in that discussion start raising your hand. I'll write your names down while Adam starts us off.

MR. NOWALSKY: Putting aside Board preferences amongst a whole lot of uncertainty. As we sit here today, does the rebuilding plan or FMP mandate a reduction for 2025, as we sit here today, and if yes, what would that number be?

MS. FRANKE: I think it's a little bit up to the Board if you're thinking about the rebuilding plan through 2029. I think if the Board feels that a certain projection by not taking action in 2025, but with less of the projection of what might happen in '26 to '29 will get you to your rebuilding plan.

I think that is what the Board could decide just what they think is going to happen, or if you are comfortable waiting until after 2025 to figure out what to do, because there is a lot of uncertainty. But I think it is a little bit up to the Board in what you think is going to happen, and when you want to act to reach that 2029 rebuilding deadline. I'll turn to Bob and Toni to see if I am misinterpreting that.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Yes, Adam, I was going to say similar to what Emilie said. There is no obligation for the Board to take that 4 percent reduction. However, if the Board chooses not to take the 4 percent reduction and it requires larger reductions in the future. The obligation is to hit that 2029 fully rebuilt number. How do you get there is really up to the Board, but the longer you delay or the fewer number of years you have left to achieve that, the risk is that the reductions may have to be greater.

CHAIR WARE: I saw Roy Miller.

MR. ROY W. MILLER: I just looked, to kind of tee up our process for commenting and discussion. I was wondering if a very brief history lesson might be instructed. There are a few of us in this room that were involved in Striped Bass Technical Committee and Board considerations through the 1980s to the present. Dave Borden is one that comes to mind, sitting right across from me, and then probably Doug Grout as well. But anyway, what I wanted to say.

MR. BORDEN: I'm not that old, Roy.

MR. MILLER: In the 1980s there were concerns, just like we've heard from our fishing audience today over contaminants in the nursery areas. There were concerns over excessive rainfall or not enough rainfall, colder than normal temperatures, warmer than normal temperatures. All of those things of which were beyond our control in the 1980s.

What could we control? We finally settled upon fishing mortality, so that we could maximize the number of eggs laid in our ecosystem, so that when conditions were favorable, a dominant year class would eventually be produced. That is exactly what happened. If we look at that recruitment graph that we had up at the end of our previous session.

When you look at those years from ’85 to ’89, that is when we provided maximum protection, and that was through a moratorium. But anyway, by providing protection for those eggs laid in the system, making sure there were enough spawners out there to lay those eggs. The conditions were eventually favorable and the 1989-year class was the result.

I see us entering a similar sort of scenario now, where we have poor reproduction for 6 years. I think we have a lot of tools available to us today that we didn’t have back then. Then a moratorium was the choice. I don’t think a moratorium is the right choice now. I think we have other means of getting to where we need to go, such as everything we’ve been talking about today.

We didn’t have the tools then of slot limits, we didn’t have the tools of circle hooks and all those things that we can use to reduce mortality. But I do think there are enough parallels with what happened in the 1980s that we need to keep that in mind, and keep our focus on maximizing the number of eggs laid in our estuary systems, so that we again can support some larger than average year classes. Thank you for indulging me.

CHAIR WARE: Next I have Nichola Meserve.

MS. MESERVE: I guess I would like to start with like a couple positives that I see in the stock assessment, if there are some to draw from. You know I think that if indicating that our 2023 emergency action was warranted, that we would be in a worse spot right now having not done that, and that Addendum II was also warranted, and likely already reduced F to be below the target in 2024.

We don’t have to take a management action based on that. However, looking at what the Technical Committee is indicating is the most likely scenario, we are going to fall off of our rebuilding timeline for 2029. Of course, take these projections with a grain of salt that if recruitment is actually more similar to the last six years, as opposed to the entire low recruitment scenario. All of these are overly optimistic.

The only error I see us making is not acting. I think there is room for discussion about the speed at which we take an action. But I stand in a place where I think an action is warranted, based on the stock assessment. The discussions I’ve had in the last 48 hours. I’m hearing a lot of similar sentiment, at least on that point that some type of action is necessary. The reason that the TC is projecting the increase in F next year that takes us off that trajectory is that the 2018-year class is going to enter the slot limit. That to me speaks to the need for an action in 2025 to address that, to learn from our experience in 2022, and not repeat that, that example. I am going to put out a motion that will maybe help to lead the discussion, just to get something on the board, and if I get a second, I would like to speak to it a little bit more.
I have a **motion to schedule a special Striped Bass Management Board meeting in December 2024, to consider Board action in response to the 2024 Stock Assessment Update. The Board will consider action to revise the 2025 recreational seasons and/or size limits, and 2025 commercial quotas, to achieve a 50 percent probability of rebuilding by 2029 under the low 2024 removals with F increase in 2025 only projection.**

CHAIR WARE: I saw Marty’s hand up for a second, so we have a motion by Nichola Meserve, a second by Marty. Do you want to provide additional rationale, Nichola?

MS. MESERVE: Yes, thank you. The intent of this motion, it establishes that the Board accepts the need to respond to the stock assessment to achieve a 50 percent probability of rebuilding by 2029. It positions the Board to take action in 2025, recognizing that that increase in F is going to occur in 2025 if we don’t do something.

It accepts the TCs most likely scenario that low 2024 removals was an F increase in 2025 only projection, as what we’re working from, and should be using to determine the reductions, which staff has shown us

is around a 15 percent reduction. It recognizes that taking a Board action today to do this is not possible. We don't yet have a range of options in front of us that we could work with to piece together 18 percent reduction on the recreational side.

It is generally easier for us looking at the commercial fishery, in terms of the quota management system, but we don't have that for the recreational fishery options today. In order to make action for 2025, that would require an additional meeting before the end of the year, in my view, to have those options before us and attempt action for next year. The motion also establishes that the Board would be looking on the recreational side, at seasons or size limits or a combination of the two, and on the commercial side the commercial quotas. Then lastly, I think it signals to states that there is a potential for action in 2025, so we should all be planning accordingly for that, leading up to potentially taking action in December. In making this motion, I also want to acknowledge that I expect a little discomfort at the last meeting, with trying to pursue seasonal closures through a Board action.

While we use it for a lot of other species, it would be novel for striped bass. But I have a lot of faith that if we got a range of options into the briefing book for a December meeting, that the public input would be substantial, and it would help us to guide us in making some decisions in December. As a fall back, I think the December meeting would still allow us time, if the Board could come to an action in December, that there would still be the opportunity to initiate an addendum for 2026.

CHAIR WARE: Marty, I'll go to you as seconder for any rationale.

MR. GARY: I think Nichola captured at least my personal sentiments, and my concerns and thoughts going forward. I would only add that a standalone meeting will also afford us an opportunity to further engage with our constituents and our advisory groups, which I think is critical in this collaborative process. I also would hope that somehow, we could fit an AP meeting in somehow.

I don't know when they met last, maybe I missed something. But I think it's important for the AP to be integrated, but especially at this juncture, somehow, some way. I also would just make the comment, it's not really captured in a motion, but this is a really important issue and I don't think it's been lost on anybody, are the depth and scope and impact of these discussions. I would hope that this standalone meeting in December would be in person if we could do it.

CHAIR WARE: All right, so we have a motion on the board, got a lot of hands up, so we're going to go through the list. John Clark, you are first.

MR. CLARK: Unsurprisingly, I'll be speaking against the motion. As I've brought up at, I think every meeting, and I think there are a lot of people that agree, that the reference points are exceptionally high, and even though we don't have on the current projections here may not, 43 percent chance of reaching the target. The target is 125 percent of the 1995 rebuilt SSB.

But it has a very good chance of hitting the threshold by 2029. I know that wasn't what we said in the plan, but it's still a bigger stock than we have now. In the meantime, we're talking about some, you know we're just further regulating this, making things more difficult. We know that we go back to what Roy was talking about, what happened back in the seventies and eighties.

Well, at that time we had like a 12-inch minimum size for striped bass. It was a much different fishery, and we didn't have a quota on the commercial side. It's much different now. I think a basic concept in finance of net present value, and I would transfer that to a fishery, and not a fish today is worth more than a fish four years from now.

We've already heard the hardships that what we've currently done is putting on both our recreational

fishing industry and the for-hire that is, and our commercial fishermen. I think this is just another almost gratuitous cut at this point, because it's going to be something else that is going to make life more difficult for them.

I've seen, you know we cut the quotas on weakfish back, we did everything we could. They haven't come back. But the fact is that for a lot of our for-hire, boats in Delaware for example. They had some time to start looking to shift to other species such as black sea bass. I think one of the things that keeping status quo would do, it would at least give our fishermen a chance to adapt, look for other options, rather than every time they turn around, we're cutting them one way or the other.

Now we're going to say, well, you can't fish during this time of year. It just seems like, as I said, at this point for 4 percent reduction, it just seems something that we could put off for a year and actually see what is going on with this stock. Once again, as we've seen with the cyclical nature of the population, we don't know if anything we're going to do right now is really going to make the difference. Anyhow, that is my point there.

CHAIR WARE: I have Justin Davis on deck. Emerson Hasbrouck. Sorry, Justin is first, then Emerson.

DR. JUSTIN DAVIS: Sorry for the confusion. I'm going to speak in support of this motion. I think Nichola and Marty both did a great job of capturing general rationale behind this motion of why it is appropriate. I think this is really about learning the lesson of Long Branch, right? We were sitting here at this meeting two years ago.

We got a stock assessment result that painted a very rosy picture of our rebuilding probability, and then very quickly thereafter that we got updated harvest information that showed that we were going to end up way off track for rebuilding and had to take the emergency action. I think here we have the benefit of learning from that experience, and also you know we have a whole year ahead of us here.

We're not going to get this information in here and have to make the change, we can look ahead to 2025. It's a compressed timeline, but I think we have enough time to take action. I'll just address this question about the reference points and the targets being too high. I understand that discussion, it's not a new one, as recently as Amendment 7, right? We had that discussion and reaffirmed these targets for the rebuilding timeline.

From my standpoint, the rebuilding plan and the targets are what they are. We sit here today and that is what we have to abide by and respond to. If the Board wants to have a discussion in the near future about potentially changing those targets, I mean I can understand that. But that is not a change we can make today, and so I think we have to live by those targets. One other comment I wanted to make relative to the statement here about reducing 2025 commercial quotas to achieve a 50 percent probability of rebuilding.

I think it's important to consider there that quotas and landings aren't the same thing. If we reduce commercial quotas, it's important to clarify whether the assumption is going to be, we're going to assume full utilization of the quota or commercial landings are sort of consistent with what they've been in some set of recent years, right? I just think that is something that we'll have to kind of clarify here as to how we're going to approach that.

One last thing I just wanted to clarify. I think I heard Nichola say this, but we were shown that there is actually a variation in the projected reduction that would be needed under this scenario of low 2024 removals with the F increase in 2025. I think you heard him say it was about 15 percent was the scenario that you're sort of seeing as the one underpinning this motion, so I just wanted to clarify that.

CHAIR WARE: All right, Emerson Hasbrouck and then next is Doug Grout.

MR. HASBROUCK: I have a question for the maker and the seconder of the motion, to get their response on the record. My question is, does recreational seasons in the motion include both no harvest and no targeting seasons, and if the response to that is that it doesn't, then I want to make a motion to amend. Thank you.

CHAIR WARE: Nichola, do you want to respond?

MS. MESERVE: My response is that I am purposely vague in this motion. My intent would be that the Board, if this were to pass, the Board would follow up with a list of tasks for the TC as to exactly, you know to give them more guidance. At that time, you would be addressing, are we asking them to look at no harvest closures?

Are we asking them to look at no target closures? What we're trying to do with this motion at least is just establish a process, and then additional Board discussion would be necessary to figure out what it is exactly we're tasking the TC with doing prior to December.

CHAIR WARE: Follow up, Emerson?

MR. HASBROUCK: Yes, you anticipate that discussion is going to take place this afternoon.

CHAIR WARE: Doug Grout then Adam Nowalsky.

MR. GROUT: I support this motion. I think it's important that we take action now. I mean if we were to not take action now and we did not achieve that 4 percent reduction needed, this is our best chance of rebuilding. When the 2018-year class gets into those spawning stock, that is our best chance of rebuilding.

Because the subsequent year class, 2019 is 25 percent lower than 2018 is, and the subsequent three-year classes after that are half the size of the 2015-year class. If we don't protect that 2015-year class, we will not achieve a rebuild. That's why I think we need to take action right now.

CHAIR WARE: Adam Nowalsky and then Robert Brown.

MR. NOWALSKY: This motion specifies how we prefer to treat 2024 removals and the 2025 F. It is silent on what the assumption is for 2026 onward. Is the intent to have that discussion as part of the tasking to get both of those options moving forward, or is there a preference by the makers of this motion for how to treat 2026 forward as well?

CHAIR WARE: I'm going to turn to Nichola as the maker of the motion.

MS. MESERVE: That was referring to that one projection that the TC says is their most likely scenario, where it goes up in 2025 and then it comes back down and is stable for 2026 to 2029. I think we really need to decide at this meeting if we're going to try to do something for next year, what is the reduction that we're aiming for? I think we have to pick one of those scenarios and work from that.

CHAIR WARE: Yes, Adam, follow up.

MR. NOWALSKY: If it is the intent of this motion to assume some decrease in F from 2026 forward, I think it needs to be explicit in this motion, and the conversation before we leave here today needs to also explicitly task the TC with how we expect them to come up with something that they have confidence in.

What I've heard to this point is that we expect some decrease in F, 2026 moving forward, but we don't know what it is. That is what my ears have heard so far. I think it is important that we provide, again, explicitly in this motion that the options coming forward assume that decrease, and we need to be explicit about how that number is going to be used in these projections.

CHAIR WARE: Robert Brown and then Mike Luisi.

MR. BROWN: Yes, on the commercial part. We just took a 7 percent cut last year and that is a hard cut that we had to take, and we were at like 10 percent of the total harvest with our dead discards. Now we're down to about 9 percent, maybe a shade of it, 9.12, whatever it may be. If we do take another cut, how would we ever get that back? That is one question.

The other one is, how do you justify, when we are a minority in this fishery, and we only have like 9 percent now, we'll have to lose some more. The gorilla in this room is the recreational fishery, with 90 some percent. I mean we've got to be equal fair on this. I mean we've taken the hard cut. Every time we take a cut it is a direct hard cut, and you have these slot limits they are putting in, and I don't know how well they work.

I know the smaller you make the slot, the more fish that you endanger when returning. You end up with more dead discards. But we are a food producer, and you know the commercial people don't own this quota. The recreational don't own it, everybody owns it, even the ones that play golf, even the ones that drive a school bus, or whatever they may do.

Where do they get their fish from, their portion of the fish? They get it from the commercial fishery because we sell it to markets. We sell it to restaurants, so that they can feed these people, who a lot don't have a boat and don't have access to the water. But they do appreciate the taste of our fish. We are a minority, and I think that by taking that 7 percent cut last year, it wasn't a proportional cut, we took the whole 7 percent that we should not get a cut on this year.

CHAIR WARE: I have Mike Luisi and then Jim Gilmore.

MR. LUISI: I'm going to speak to a couple things, one is that I agree with Ms. Meserve on the success story that she told. In 2023 we took emergency action. We followed that up with an addendum in 2024, and we have done what we've tried to achieve, which is to reduce fishing mortality. We're currently still in 2024, and are learning as we go what those effects of those actions are. We just heard that a recognition that the Wave 4 data are more recently available and have changed the overall projected outcome for what we're looking at trying to achieve.

However, while I agree with the success, I am concerned about the longevity and the durability of the actions that we take, and how they are going to carry out through 2025, 2026, 2027, 2028, and 2029, because I would like to be able to come up with a solution that we think is a viable alternative that stays consistent for a year or two, until we get our next assessment update.

The next time that we are going to receive information like this, I think is probably the benchmark assessment. There is not going to be a run of the assessment in between. I think we should be thinking a little bit more about not just the short-term effects of change for 2025, but more of the long term, getting us to that benchmark assessment. With that said, Madam Chair, I do have a **motion to substitute**. I sent it to Emilie.

CHAIR WARE: Do you want to read that in, Mike?

MR. LUISI: Sure, I can read that in. I was just waiting for it to pop up on the screen. The motion would be, **move to substitute to initiate an addendum to address reducing total removals (harvest and discard mortality/recreational and commercial) in the coastwide striped bass fishery using the Technical Committee's most likely projection scenario (F2024=Low Removals, F increases in 2025 only and returns to 2024 low levels) and a 50% probability of achieving the spawning stock biomass (SSB) target level by 2029.**

The intent of this addendum is to provide the Board with coastwide and reginal alternatives for the recreational and commercial fishery for implementation on January 1, 2026. If I get a second, I have a few more points that I think I can touch on to provide rationale for that.

CHAIR WARE: Okay, sounds good, Mike, is there a second? John Clark. All right, Mike, go for it on your rationale.

MR. LUISI: Just to add to what I've already said. I think the concept of the Board receiving assessment information and turning on a dime at that same meeting to create measures for the future year, was an experiment to see whether or not that was something that the Board could do. Based on the discussion that we're having around the table today; I don't think it's likely.

We're not prepared right now to make decisions that have the impacts that they do to our stakeholders at today's meeting. I also don't think that given that we are still in 2024, and it is only two months until the end of December. I don't see how this Board, working with the Technical Committee, working with members of the public, in the course of the next few months with all of the other obligations that we already have.

I don't know how we're going to have more information in December than we do today, other than some crafted options that we could select from. I think that for the future of this fishery, which I committed to change, I believe change is warranted. But for the durability and the commitment to this fishery for the future years, beyond 2025.

I think we owe it to the public to be heavily involved in the addendum process, which is the norm, which is what they are normally used to working with us on. It will give us some time to think about and to communicate with that same public what effects they might have to deal with as a result of the actions that we take. I think by taking our time, structuring the discussions, folding in all of the recreational release mortality work that we spent months on this summer, factoring all of that in, maybe even soliciting information from the public through a survey that we've discussed. All of that is going to take time.

I think that time, this is the time we need to spend on it between now and possibly a year from now, or maybe even August of 2025, where final actions can be taken to establish a fishery for '26 and beyond. That is what I would like to see this Board support, and that is why I made the substitute motion. Thank you.

CHAIR WARE: John Clark, as the seconder, do you want to add anything else?

MR. CLARK: Being in the minority as I know on the main motion, one thing I did want to, if this doesn't pass, is to amend the commercial quota part of that. I would like to see us change it to where we could look at commercial measures. I think, for example, that as I brought up here many times.

If we required any state with a commercial fishery to have tagging at the point of harvest, rather than at the point of sale, we would probably reduce commercial removals by a lot more than reducing the quota by 4 percent. If this substitute motion is defeated, I would like to then have the opportunity to amend the main motion.

CHAIR WARE: I'm going to keep working on the list we have been accumulating. Obviously now we have a motion to substitute, so you can adjust your comments accordingly, given where we're at. I had Jim Gilmore and next Chris Batsavage.

MR. GILMORE: Now I have hybrid comments because I was originally commenting on the first motion. I don't disagree with some of the things Mike raised, including, but let me go back to my first comment before the substitute motion was, I am in support of that motion, but it was kind of along with what Mike was saying is that prescribing December to try to get all this done is the TC and the staff and everybody else able to come up with all these things.

The one thing we all came into this meeting was we had no options, so we are talking about a reduction, but how are we going to get there? I think that is important. I still agree with, we need another

meeting between now and the winter meeting, but is the December statement in there appropriate?

Would it be, we were going to give the TC and the staff more time for the first week in January, recognizing that it is Christmas, and I don't think we want to spend December 25th here. That was my first point. To the other part, Mike, I think if we still do that extra meeting that gives us another bite at the apple.

We can see if this works. If it turns out it doesn't, we can still do the substitute motion at the winter meeting and still prescribe that. I think that would be my preference, to maybe reconsider the December time, and put that vaguer as, let staff figure out what the appropriate time is for the meeting between now and the winter meeting, and then again consider this substitute motion at the winter meeting.

CHAIR WARE: I've heard a couple suggestions on the underlying motion. While it is possible to amend the underlying motion, I'm going to recommend we first decide are we doing a special Board meeting or an addendum, and then whichever prevails we can perfect those motions after. If everyone is okay with that, that is how I would like to proceed. Next, I have Chris Batsavage and then Steve Train.

MR. BATSAVAGE: Yes, I think Jim made some good comments about the option of possibly doing an addendum. However, I don't support doing an addendum in place of taking Board action through the original motion, because I think we're running out of time. We might need more time to develop something, as the substitute motion suggests.

But in terms of what we have facing us in 2025, we really need to move a little faster, and for the reasons that were already given before. But just to, I guess add a little North Carolina perspective to what I support and what I don't is, of course we've been out of the striped bass game on the coast for oh, 12, 13 years now.

Probably a lot of reasons for that, but one is because there is not a lot of fish left out there. The fishery was at its highest point when it went above the SSB target. Secondly, in terms of whether we take action now or wait until 2026. We've already discussed the six poor year classes in the Chesapeake. That is going to happen regardless.

This did kind of compare to what we've seen before in Albemarle Sound, as I discussed here with this Board. Last year we had about five-year classes that were well below average, 4 in fact, I think we're up to 6 or 7 now, and that fishery is closed. I'm not suggesting a moratorium is appropriate for the coastwide stock, but I think it just shows. We've had a similar situation with the estuarine stock, and we took action at a pretty drastic level, as opposed to waiting another year.

CHAIR WARE: I have Steve Train and then Pat Geer.

MR. TRAIN: I guess I've kind of got hybrid comments now too. Let me go to the original motion first, that is what the question was about. If I could ask Lieutenant Mercer, as things came through here, Nichole was asked if she wanted to include harvest or targeting restrictions. Has anyone ever been cited or fined or arrested for targeting a species? Is it an effective management procedure?

LT. JEFF MERCER SERGEANT: You're talking about targeting without possession. NOAA OLE has not been able to identify a single case over the last 30 years where it successfully prosecuted a targeting case. A few hours ago, I poled LEC committee, and no members of that committee are aware of any cases in their states that have been successfully prosecuted without possession, so targeting only.

MR. TRAIN: Thank you, so in my opinion that is a useless regulation if it can't be enforced. But maybe that's just my opinion. On the substitute motion, I support either motion, I like the second maybe a little bit better. I hate the fact that it

comes later. But what I like best about it is, Mike specifically mentioned discards.

We are managing a fishery that we continually need to go back to when 40 percent of the mortality is because people are playing with their food. I mean they are throwing over fish, it's four times the commercial harvest. I think that is a huge part of why we keep sitting here. To me that is very important that we look at that.

CHAIR WARE: All right, Pat Geer and then Dave Sikorski.

MR. PAT GEER: I appreciate the vagueness of the first motion, because it gives us the opportunity to have further discussion, as Mr. Gilmore said, another bite at the apple. I would be remiss if I didn't mention what happened last year with the Bay with commercial fishing. Is that we were trying to put things in place and our fishery had already started.

The first motion would basically put us in that exact same situation again. We're already issuing tags by December. The season starts January 15. It's hard to pull those tags back once they get out. I see a hybrid of these. I mean I know it's not very favorable, but start looking at recreational measures for 2025, and initiate anything additional with commercial measures in '26, because the Bay is going to be in the same situation we were last year with Option 1.

CHAIR WARE: Dave Sikorski and then Max Appelman.

MR. SIKORSKI: I support the original motion more than I support the substitute. I think it is more responsible to act more quickly, and I think Pat actually just gave a great example of that. Every single time for the last decade that John highlighted earlier, that we had a chance to make a reduction. Every single time I'm pretty sure we didn't make the full reduction that the TC guided, or the reduction didn't work.

Nichola mentioned the fear of spiking mortality like we did in '22, and doing it again to 2018. We did it for 2011, and it's partly why we're here. There is less fish in the system. I understand the difference of opinion and the idea that a fish today is more valuable than one maybe five years from now. But we've already seen the lesson of 1980s to 1990s.

Generally speaking, by not going to the full reductions, or playing games and pretending that conservation passes will work by certain sectors or subsectors can step out of the necessary reductions and it's actually going to achieve our goals. I mean we should all know we were going to get here.

I think the most responsible thing is to take action as soon as possible, yet recognize that there are little pieces of the puzzle that may not fall into place because of what Mr. Geer said. Also, what Mr. Train said about playing with your food. You know I would encourage this Board to lead by example, and not fuel the division that exists out there. I'm a commercial fishing client, customer, right. I buy seafood at seafood markets all the time. I go fishing on charter boats and I go fishing myself. At no point am I playing with my food. If I am a pro harvest fisherman one day, like I might be tonight if I could get out on a boat, I might release fish. Part of that 40 to 50 percent of dead discards removals is happening from anybody going fishing. Please people, let's rise above it. There is enough on Facebook, there is enough in our comment package.

For us Board members to play into that dialogue is irresponsible. I support the first motion. I am not against what Mr. Luisi and Mr. Clark are saying, but I think we're running out of time and we need to be more responsible by the fish, especially because the majority of removals are in the ocean.

The majority of removals and dead discards are in the ocean. The majority of anglers are in the ocean. That is what we have left, folks, there is not a bunch left in the Chesapeake, and let me highlight really quick, before I'm finished, what fisheries catch

2015s and 2018s right now. It is Bay commercial, coastal commercial, coastal recreational.

Unless we're cutting those, we're not betting ourselves or the future of this stock. We're furthering to put us in the wrong direction, and maybe those calls for moratorium a year from now will be a lot louder and a lot more reasonable. I think we really need to be careful here, so I support the more proactive action.

CHAIR WARE: I have Max Appelman, then Dennis Abbott, then I am going to go to some comments from the public before giving folks a second bite of the apple around the Board.

MR. MAX APPELMAN: I think I want to start with, I appreciate both of these motions. I agree that given the assessment information our objective to achieve the target that we need to act. I raised my hand before the second motion was made, and what I wanted to say was, what gave me pause in the underlying motion is the timeline.

The December timeline, the process. I don't see an opportunity for robust public comment, especially around something as complex as seasons. I mean this Board has explored seasons a few times before. Both of those times they were long amendment and addendum processes, and even through those processes we hit some roads, and were unable to make some of the tough decisions.

There was a lot of back and forth between the Technical Committees, the Plan Development Teams and still were unable to act on seasonal closures, and to see it as potential for December. I'm guessing roughly two months from now, maybe less. It just gives me a little concern. I also heard some comments about for the first motion that we could. Let me back off.

I guess what I'm saying is, I think pursuing an addendum affords that public process that we are used to, and gives us opportunity to have dialogue with the Technical Committee, to flesh out something like seasonal closures, which we're focusing on a lot today. It doesn't preclude the Board from using its Board action provision at that next meeting. Presumably, there would be alternatives that we could see, whether we support that in a draft document for public comment or act on them then. I think both of those options are still on the table. Given the options that we're considering here, and the timelines, I'm leaning towards the substitute motion, as I think it's more appropriate given the complexities of what options are being considered.

CHAIR WARE: Dennis Abbott.

MR. ABBOTT: Like Max, I had my hand up it seems so long ago. Five thirty in the afternoon after a long day sitting here, I think is a bad time to make a decision to initiate an addendum, which will sacrifice in large part the 2018-year class. Nichola made a good motion, that is what I wanted to speak on. She said she wanted it to be vague. What I think was not implied but stated, she would like to see a meeting in December so we can work on these things.

We don't know what decisions we would make in December. We don't know if we would do something to affect the commercial fishery or the recreational fishery or what the decisions that may be made in December. But I think that going with the second substitute motion would be a dereliction of our duty of protecting the 2018-year class. I strongly oppose the substitute motion and support the main motion.

CHAIR WARE: I want to take this time now. We've had a lot of comments from the Board, to go to the public. I'm going to look for two comments from the webinar, two comments in person or if there is some combination of that we'll do that. I see one hand in the back, is there another comment in person? Okay, Mike, you're welcome to make a comment in person and we'll look for three hands on the webinar.

MR. WAINE: Thank you again, Madam Chair, Mike Waine with the American Sportfishing Association. The public comment process for the addendum is really clear. Typically, public hearings are held. The states encourage their constituents to participate in that process. I think it's something that the fisheries, the stakeholders know well.

What is a lot less clear is the main motion public comment process. I think I heard the motion maker say that comments could be submitted ahead of that special meeting. But I would just encourage that those public comment guidelines be significantly clarified. This is a very diverse fishery, as we've heard comments around the table indicate.

We want to make sure that everybody has the opportunity that participates in this fishery to participate in the process for how it's managed. If the main motion ends up passing, I would even encourage, not only as some commissioners suggested an Advisory Panel meeting, but also some sort of a public comment, public hearing meeting that would enable all the stakeholders to participate. Of course, timing will be an issue.

But I think given where we are in 2024 in technologies, there should be the opportunity to at least do one online. I think the Commission has also used polling on some of those online hearings that really provide the opportunity for the stakeholders to provide input if you don't feel comfortable speaking publicly. I just really want to reiterate that there is an important component to allow the public to participate if the main motion ends up passing. Thanks.

CHAIR WARE: Not surprisingly, the number of hands online exceeded three, so staff has selected three folks. First up is Peter Jenkins. Just to clarify, we selected by those who we think whose hand went up first.

MR. PETER JENKINS: I'm owner of the Saltwater Edge in Rhode Island. Striped bass numbers directly impact in the sustainability of my business. When there are less fish available fewer people fish, and those who are fishing take less trips. My bottom line goes hand in hand with the products from striped bass.

It isn't about a slot limit, it isn't about how many fish people can take home, it's about the experience of friends and family sharing time on the water with a reasonable expectation of catching a fish. That expectation is not being met. The Saltwater Edge is not only a tackle shop, we hold community events, produce instructional videos and podcasts, and foster a sense of community and fellowship.

We're a hub for all saltwater fishermen in the northeast, and support many small businesses, as well as employees, that make custom rods, lures and flies. Our community is struggling and has lost faith in striped bass management. From my perspective it's well deserved. We have known that striped bass has been in trouble for quite some time, but the Board never took enough action to put us back on the right track.

The effort for striped bass is collapsing in New England due to the lack of fish. Businesses are feeling the pain, reductions on paper aren't worth the paper they are printed on. Real people are depending on this Board to do the right thing. The Board has lost sight of that. These issues with failed spawns are going to hit the coast in full force in the next few years, we all know that. If this Board chooses to delay action or take half measures there is little hope for stripers and the communities they support. Thank you.

CHAIR WARE: Next is Paul Kameen.

MR. PAUL KAMEEN: I am Paul Kameen; I have had, some time working as a biologist in a fishing boat commission. I currently work for Housefly in Hauley, Pennsylvania. I just wanted to address a few of the notions I heard brought up by some of the

Board members, like the idea that striped bass follow cyclical patterns.

I just think it is important to point out the idea that we have not evidence to support that. Hunting species to the brink of recovery and then allowing it to recover, that is not an actual boom/bust cycle. I would also like to point out, Mike's idea that a striper is worth more now than it is in the future, when economic evaluations of other species have shown that that is just not true.

For example, red fish are worth more in the water than they are in a cooler. Lastly, I just want to support the ideas that Peter pointed out. People aren't, they haven't stopped fishing because of the regulations. Every catch and release guide I know has pointed out that people just don't want to go when there is not fish in the water, an experience out there isn't just about harvesting fish, it's about the fish you see. It' about the time you get to spend with other people on the water and the memories you get to create. I think Peter articulated all those ideas very, very well, much better than I can. That is my comment.

CHAIR WARE: Our third comment is going to come from Paul Haertel. I apologize if I mispronounced your last name.

MR. PAUL HAERTEL: Yes, Paul Haertel, thank you. Yes, I prefer the original option, because I think it's very important to protect the 2018-year class. I think we need to take action to have further restrictions in 2025. I also think it's important to protect the smaller fish, or eventually we're going to lose all our bigger breeders to attrition.

I would also like to comment on catch and release. I mean they are responsible for about 50 percent of the removals, and although I heard people say that it's not enforceable. Well, I would like to point out a couple things. One, it is enforced in New Jersey when our Bays are closed to targeting in January and February, and it's easy to enforce, because they are the only species that are around.

You are not actively fishing for bluefish in January and February, so it can be enforced. The other thing I would like to point out is that many sportsmen will obey the regulations, so I think that the catch and release anglers have to do something, you know to help rebuild the stocks. I'm one of the catch and release guys, so I would like to see us do that. Thank you.

CHAIR WARE: I'm going to bring it back to the Board. We've had a few hands go up. If this is your second time commenting, I'm going to ask you to keep it brief, because we're at 5:40 already. Then we're going to probably go into a caucus, I think we're getting ready to start moving here. Actually, David Borden, I'll have you go first, because you have not spoken yet, then Justin Davis and then Joe Cimino.

MR. BORDEN: I am opposed to a motion to substitute, mainly because I think we're in a unique position. We've only got a couple year classes in this fishery; it's been discussed by a number of the prior speakers. If we allow that 2018-year class to be fished down, we're just going to lose an opportunity, and essentially paint ourselves into another corner. I have some problems with the original motion, but I'll reserve those. If we get back there, I would like to speak again.

CHAIR WARE: Joe Cimino, you're good? Okay, Justin Davis and Marty Gary, keep them brief.

DR. DAVIS: Briefly, I think it's important to note the concern that Pat brought up about potential delayed implementation if we meet in December, and then you know obviously the implementation date will be some time after that. I think that is a real concern. I would just say that you know late implementation was better than no implementation for 2025.

I would hope if this main motion, the underlying motion prevails, it is a signal that a majority of the Board is interested in taking action for 2025, and

will likely do that in December. If states have any ability to modify their administrative procedures to like take into account that eventuality, I think that would be a good idea. I wanted to point out that the two motions contemplate handling the commercial fishery differently. The underlying motion talks about commercial quotas, the substitute motion talks about reductions to commercial harvest, so I think that is just as important to notice.

The last thing I wanted to bring up was just, concern with the substitute motion. If we go with that, we're probably talking about finalizing the addendum at this meeting next year, which means that it would have to get out for public comment at the summer meeting, which means that options for this document probably have to be developed in the first half of 2025.

Therefore, we are not going to be able to take into account what is actually happening in the 2025 fishery for that addendum, and that is the main issue that we're sort of talking about here is, we're concerned about the 2025 fishery and how it's going to perform. We might end up in a situation where we develop an addendum with options based on the 2024 fishery primarily, which isn't going to be an accurate reflection of what is actually going on in the fishery currently. That is just one of the concerns I have with that approach in the substitute motion.

CHAIR WARE: Marty Gary then Rick Jacobson.

MR. GARY: I'll try to be as quick as I can. Quick clarifying comment on the underlying motion. When I seconded, I was working under the assumption that if we failed to initiate a Board action that an addendum would still be viable, as Jim Gilmore mentioned. Then I have got a question I just have to ask.

Because I got concerned when I heard Robert T. Brown earlier saying how they took a 7 percent reduction, and then Mike and Pat talked about the logistical issues with the tag, which reminded me of how they were having trouble last year. If it isn't too much of an imposition, I was wondering if Mike and Pat could tell me what is the status a year later? Did you all in fact implement the 7 percent reduction to the commercial quota?

MR. GEER: We're below, we'll be within that 7 percent reduction this year. We are not taking the regulatory change to our commission until December, so next month. We have not implemented it yet, but it will be implemented and we are well below. We're going to meet that 7 percent reduction.

MR. LUISI: Yes, to Marty, we've started tracking a week ago, kind of where we are and using projections from previous years, where we think our commercial quota in the Bay, what we'll be catching by the end of the year. Right now, we are on track to end up at the ASMFC Addendum II quota, not the quota that we initially distributed to the fishermen. They are coming in short of the quota, and all projections indicate that we'll be right on target.

CHAIR WARE: Rick Jacobson, and then Eric Reid, and then we're going to caucus.

MR. RICK JACOBSON: I agree with speakers that had said initiating an addendum is the best path forward for including public comment. That would be a wonderful thing for year '26 and beyond, assuming we can get it completed within one year. That still leaves us with the issue of how do we approach 2025. That is essentially what the underlying motion gets to in the first place. I don't see this as a one-way street, that we do one or the other, but rather it's a dual path. I would support the underlying motion to address the 2024 issues, and whether we take it up today or we take it up in December would be to also at the same time pursue initiating an addendum.

CHAIR WARE: Eric Reid.

MR. ERIC REID: Just a quick question to Mr. Beal. Can we do a December meeting in person?

EXECUTIVE DIRECTOR BEAL: Yes, thanks for asking that, Eric. I just really don't want to overpromise here. We've had a number of expenses this year that were not anticipated. I can go back and look and see if there is any money to pay for that. But my immediate answer is probably not. Just giving a fiscal reality. But you know, it's an important meeting and I surely would feel bad that budget would get in the way of the most effective way of this Board getting together to meet. But I'll see what I can do, but you know, most likely not.

MR. REID: A virtual option is in play. Okay, thank you.

CHAIR WARE: Robert Brown then Dennis, we're going to ask them to keep them quick.

MR. BROWN: Yes, thank you, Madam Chairman. I just wanted to bring up the topic of rollover on quotas that we've been having. Since it started, it was after the moratorium it came in. The state of Maryland has only been over its quota for the commercial people a couple of times, and it was paid back the next time.

That is one thing that the state of Maryland did not want to do. A lot of times we caught 80,000 pounds short of our quota, it was 100 and some thousand other years. I can get the TC, I would like them to be able to come up with how many pounds we have returned and did not catch, because we did not want to go over our quota, and you can't roll it over. You give it up you lose it. I would like to have those figures from the TC at our next meeting, please.

CHAIR WARE: I'm sorry, Robert, I was side-barring up here.

MR. BROWN: Okay, what I'm saying is, you can't have any rollover, you can't roll over a quota from one year to the other. In Maryland it's only been a couple years that we've gone over and we had to repay that quota back the following year. What I'm saying is, there have been years and years that some years 80,000 pounds under our quota, 80 some that we had to lose each year. I would like to have that information for our next meeting, if possible.

MS. FRANKE: Sure, we can put together a table showing the quota underages for each year.

MR. BROWN: Thank you, very much.

CHAIR WARE: Thanks, Robert, I apologize. Dennis Abbott, last one.

MR. ABBOTT: Eric asked a question about whether we could have an in-person meeting. I think I brought that up this morning about anticipating the possibility of us needing an in-person meeting. I know that we have a very large bank account. I don't believe that we should use the financial implication to deny the Board the opportunity to have a Commission.

Because I know from sitting on the AOC and Executive Committee that our bank account is healthy, although I do realize that there could be unanticipated legal expenses. But in years past we always met personally when we had important decisions to make, and I think this is important enough to require an in-person meeting. I would like to see us limit debate and vote on this question.

CHAIR WARE: I've been pretty clear that we're going to caucus, so we're going to caucus. I'm going to put three minutes on the clock. All right, three minutes is up. Does everyone feel comfortable voting? Anyone need additional caucus time? No, okay**. All those in favor of the motion to substitute, please raise your hand.**

MS. KERNS: New Jersey, NOAA Fisheries, Delaware, Maryland, Potomac River Fisheries Commission, Virginia.

CHAIR WARE: All those opposed to the motion to substitute.

MS. KERNS: Rhode Island, Massachusetts, Connecticut, New York, New Hampshire, Maine, DC, and North Carolina. Then Pennsylvania.

CHAIR WARE: Is there any abstention to the motion?

MS. KERNS: Fish and Wildlife Service.

CHAIR WARE: Any null votes? Good. **It will be the substitute motion fails 6 to 9 with 1 abstention.** Now going back to the underlying motion, but I have heard there is **another motion to substitute,** so in favor of efficiency we're just going to get that on the board. Pat Geer, just give us a second to get it back up and we'll go to you.

MR. GEER: It's up there, okay. Thank you for the cookies, the sugar rush is helping.

CHAIR WARE: My pleasure.

MR. GEER: Like I said, I think we're on the same track, and I think if we can combine these two, so it's **a move to substitute to schedule a special Striped Bass Management Board meeting in December, 2024 to consider Board Action in response to the 2024 Stock Assessment. The Board MAY consider action to revise the 2025 recreational seasons and/or size limits and the 2026 commercial measures, with an addendum for 2026 and beyond to achieve a 50% probability of rebuilding by 2029 under the low 2024 removals and F increase in 2025 only projection.**

CHAIR WARE: See if there is a second, John Clark second. Pat Geer, I'll go to you for a rationale, and just a question if you can. Are the 2026 commercial measures, is that in the Board action or that is what you need for the addendum, if you could clarify that.

MR. GEER: Could you repeat that, please?

CHAIR WARE: Yes, sorry, I'm just reading this for the first time, so the 2026 commercial measures, that's with an addendum, my apologies.

MR. GEER: Yes, the '26 measures are because like I said, we wouldn't be able to adopt something. If we're going with the main motion the Bay states would not be able to adopt something in time. My goal in here, I think we were on the right track. We had two motions and they were trying to reach a similar goal. Yes, we need to take some action now, possibly, but we also need to look at an addendum. It was a combination of the both.

CHAIR WARE: John Clark, as seconder, do you want to provide rationale?

MR. CLARK: I think for the reasons that Pat said, and also like I said, on the commercial side I just would like to see an opportunity to look at other items that I think would reduce actual commercial removals more than a slight reduction in quota, and that would be, as I said, to lighten up on the tagging provisions, which should have been don back in 2013, but was not.

CHAIR WARE: I'm going to look for comments, but I'm going to ask folks to focus your comments on the elements of the substitute motion that are different than what we have talked about so far. Specifically, it looks like the addendum for the commercial measures, 2026 and beyond. Eric Reid, do you want to take us out?

MR. REID: I actually support the substitute motion, mainly because of the adjustment to the commercial measures.

CHAIR WARE: Justin Davis.

DR. DAVIS: Just a question to the maker of the motion. At the December meeting the Board could consider action to revise 2025 recreational measures, could or could not. The addendum will consider 2026 commercial measures. Does that mean if the Board doesn't act in December to change recreational measures the addendum is not

going to provide to be able to change recreational measures for 2026?

MR. GEER: No, we would also include recreational issues.

DR. DAVIS: I sort of think the motion needs to be clarified to reflect that, because the way it reads now, I'm reading it as the addendum only considers 2026 commercial measures.

MR. GEER: I wrote it pretty quickly, there is probably a comma missing in there somewhere.

CHAIR WARE: Toni, do you want to provide a perfection?

MS. KERNS: I'm not sure, I just want to make sure I'm clear, then maybe I can try to help with perfections. The only thing that we would consider for Board action in December, and that they may, would be the 2025 recreational seasons and/or size limits. Anything else would be an addendum, and it could be recreational measures or commercial measures for 2026. You wouldn't do an addendum for 2025 measures, I'm assuming. Is that correct?

MR. GEER: I would say that we can consider at the meeting '26 commercial measures. We can consider commercial measures, but they don't take effect until '26, so they can be considered at this December meeting.

MS. KERNS: Okay, so the December meeting everything is on the table for Board action, but if you don't do Board action then you may do an addendum for those things. But you would not do an addendum for 2025 recreational measures.

MR. GEER: No.

MS. KERNS: Right, I just want to make sure.

CHAIR WARE: What I understood, do you want to try to go ahead, Pat?

MR. GEER: I was just going to say, my thought on here was that we can consider anything at this meeting in December, recreational measures for 2025 and 2026 commercial measures, because what I mentioned before about the Bay states not being able to get things done in time. The addendum afterwards is going to address everything else from 2026 and beyond. It could be recreational or additional commercial issues.

CHAIR WARE: I'm going to repeat what I think you just said, just so everyone is clear**. At the proposed Board meeting the Board could, revise 2025 recreational measures, including seasons and size limits. They could also revise 2026 commercial quotas, and they could also initiate an addendum to consider actions on any sector with any measure.**

MR. GEER: Yes.

CHAIR WARE: Is everyone clear on what this motion is saying? Okay, now I'll go back to discussion. Marty Gary.

MR. GARY: I just want to be sure, so commercial measures for 2025, that would not happen under the special Board action, nor the addendum wouldn't capture until '26. There would be no commercial measures for 2025. Is that correct? Okay.

CHAIR WARE: Any other comments, or folks need clarity? Dave Sikorski.

MR. SIKORSKI: I just want to comment that I do not support this motion. Thanks.

CHAIR WARE: Justin Davis.

DR. DAVIS: Thanks for the second bite at the apple. I just want to clarify on the record for those states that face the difficulty of implementing changes to commercial fishery if it's not implemented. What is the sort of date within a year at which this potential addendum would need to be finalized, in order to allow those states to make that change for the succeeding year?

CHAIR WARE: Mike Luisi, do you want to answer this?

MR. LUISI: Yesterday is when we need to know. We start our appropriations now. We are already involved in preparing for and distributing quotas for next year. You know, October. If you want to call it that we'll call it October. By the end of October, we need to know what our quotas are for the future year.

CHAIR WARE: Pat Geer or PRFC, do you want to comment on that?

MR. GEER: The same, exactly. We've already ordered tags and prepared for next year as well.

CHAIR WARE: Nichola Meserve.

MS. MESERVE: Really, the only difference between the motions is that it's punting 2026 commercial action, definitely to 2026. I remain disappointed and frustrated that the states would like the writing on the wall that there might be actions for next year, two and a half months away, that it is not possible. If the addendum is the option for 2026, we need to make sure we are at this table at the right time, so there is no further delay, that there are no more excuses, no further delay. It's still not my preference to do this, but I would take it over nothing.

CHAIR WARE: I'm going to go to Chris Batsavage and then Pat Geer.

MR. BATSAVAGE: I just want to go on the record and say I oppose the substitute motion, basically sharing Nichola's frustration. I understand we all have our administrative processes, but I think in this case we really shouldn't let process get in the way of what we need to do for conservation of striped bass.

CHAIR WARE: Pat Geer.

MR. GEER: I was just going to say, I've had this conversation with our member on the Stock Assessment Committee, and I said we can't get a stock assessment result in October and expect to make commercial measures in our state, at this meeting. We actually need to know by August, because we have to order these tags and start the process.

Maryland is even different, because they mail their tags out to the folks, so our folks have to come in and pick them up. It's not something we can stop and start and do over again, it's once the process starts it's out. Yes, it's easy to say go ahead and do it, but we're all down staff. I'm down a third of my staff right now, so we don't have the bodies to do it.

CHAIR WARE: Pat, while you're there, can I have you re-read the motion into the record?

MR. GEER: I certainly will. **Move to substitute to schedule a special Striped Bass Management Board meeting in December, 2024 to consider Board Action in response to the 2024 Stock Assessment Update. The Board MAY consider action to revisit the 2025 recreational seasons and/or size limits and 2026 commercial measures via Board action. The Board could also consider recreational or commercial measures with an addendum for 2026 and beyond to achieve a 50% probability of rebuilding by 2029 under the low 2024 removals with F increase in 2025 only projection.**

CHAIR WARE: Any other quick comments on this? Seeing none, we're going to go into a one-minute caucus, and then we'll come back and vote. Everyone is sitting down, so I think we're good. We're going to call the question. This is on the motion to substitute, so all in favor of the motion to substitute, please raise your hand.

MS. KERNS: New Hampshire, Delaware, Maryland, Potomac River Fisheries Commission, District of Colombia, Virginia, New Jersey.

CHAIR WARE: All those opposed to the motion to substitute.

MS. KERNS: Maine, North Carolina, Pennsylvania, New York, Connecticut, Massachusetts, Rhode Island.

CHAIR WARE: Any abstentions?

MS. KERNS: NOAA Fisheries, Fish and Wildlife Service.

CHAIR WARE: The motion to substitute fails, 7 to 7 to 2. We are back to the underlying motion. We're just going to give folks an opportunity to fix that on the board. Yes, John Clark.

MR. CLARK: If I could just propose a slight amendment to this one, I would just like to amend it to state 2025 commercial measures rather than quotas. As I've mentioned twice now, I would like to see us be able to consider things other than just cutting the quota again.

CHAIR WARE: Okay, I think this motion has gone far enough from Nichola's original that it's property of the Board. We need a motion to amend.

MR. CLARK: I am making a **motion to amend**.

CHAIR WARE: Okay**, to change the word "commercial quotas" to "commercial measures."** That is a motion by John Cark, a second by Dave Sikorski. John, do you want to speak to your rationale?

MR. CLARK: I think I've mentioned it twice already now, and so not to belabor it, but I just think there are things we can do on the commercial side that would not result in penalizing the states that have had tagging at the point of harvest, and very good controls over it, and would probably get us a more bang for the buck than reducing the quotas by a small amount.

CHAIR WARE: Dave as the seconder, any rationale?

MR. SIKORSKI: Yes, I brought this up multiple times in the past. At one point we had a little talk about allocation. But I'm still trying to figure out where allocation exists or doesn't exist, because every single Board we're a little bit confused on it. I second this, because I want to have the discussion, but this has been shot down before, because we've said that it would be a reallocation if we reduced from landings instead of a quota. I think it's important that we discuss that, and if that is still the case here today.

CHAIR WARE: I'm hearing maybe a few topics, reducing quota from landings versus the quota, and then John, I think you're talking about maybe like tag protocols in the commercial fishery.

MR. CLARK: Right, I'm talking about making sure that what a state has in quota is very easy to enforce, very easy to measure, and as I said, some states have it, where even our state right now does not have tagging at the point of capture. I know Maryland and Virginia do. But we have a situation where, for example, the fish can be taken to shore before they have to have a tag on it.

All I'm saying is from an enforcement standpoint, that the more time you give somebody to have an untagged fish, the more chances there are to cheat. I would without naming states, I would say some states make it much easier than we do to cheat.

CHAIR WARE: We're looking for comments on the motion to amend. Nichola Meserve.

MS. MESERVE: I'm going to oppose the amendment. In the interest of trying to get to a December meeting, I think it is necessary that we have a pretty limited set of options to pursue at that time. Additionally, I believe at this point we have tasked the PRT with undergoing a 10-year review of the commercial tagging program.

I would like to see the outcome, and correct me if I'm wrong on that, but I would like to see the outcome of that before we consider changes to the commercial tagging program. I did just confirm

with Emilie, we did task the PRT with that. The work has not begun yet on that.

CHAIR WARE: Next I had Joe Cimino and then Chris Batsavage.

MR. CIMINO: I fully support the idea, but yes, I think if we're really charging down for the December 2024 date, I just don't think it's appropriate to try and have the TC work something up on this. I would like to see it in an addenda motion at some point, John, but I don't think I can support it now.

CHAIR WARE: Chris Batsavage.

MR. BATSAVAGE: Yes, the commercial changing the tagging protocol might be a tad ambitious. But I guess a question to John. The way this is written, commercial measures, we could still consider commercial quotas, we could consider commercial landings, we can consider what you proposed. Really what you're doing is you're adding more options for us in December, as opposed to just quotas. Am I understanding that correctly?

MR. CLARK: Yes, that is right, Chris. I mean I brought up that one example, but you know I think it is in keeping with what we've been talking about on the recreational side too, where we're having measures that we pretty much intuitively know they will reduce removals, but we can't correctly measure it. This is one I think is in that category, but on the commercial side, where I'm very sure it would reduce removals, but I couldn't directly quantify it. As I said, I think it would be more than what we would be reducing if we did 4 percent.

CHAIR WARE: Max Appelman.

MR. APPELMAN: This is reminding me of a potential comment I saw in maybe the FMP review about the PDT reviewing. I'm sorry if this was said and I missed it, reviewing the commercial tagging program at a future date. I'm wondering if we could get a quick reminder update on that task.

MS. FRANKE: Yes, so in August, it's been a PRT recommendation for a few years to do an evaluation of the tagging programs with challenges. States have come across how they've addressed them. That was tasked to the PRT. We haven't had a chance to do that yet given the stock assessments. We were planning to do that in early 2025.

CHAIR WARE: All good, Max?

MR. APPELMAN: Yes, just I would really value that sort of review, and comments or suggestions that come out of that review, before considering that as a measure to achieve some other objective here.

CHAIR WARE: Marty Gary.

MR. GARY: I understand, I think John's intent and where he's going with it, but I am just very uncomfortable with the inability to quantify this. I think we're at a point with this stock where nobody is going to get a pass. We're all in this together. All the sectors have to work together with what we have left in the absence of reproductive success. It's important that we all work together. I'm sure there will be something. We can't quantify it, but I'm just uncomfortable with that. It could amount to a pass in some people's interpretation, and I'm just not comfortable with it personally.

CHAIR WARE: Those are all the hands I had, so we're going to do a 30 second caucus, and then we're going to vote. Does anyone need more time to caucus? Seeing no hands. As a reminder, we are voting on the motion to amend. **All those in favor of the motion to amend, please raise your hand.**

MS. KERNS: Rhode Island, North Carolina, Virginia, District of Colombia, Potomac River Fisheries Commission, Maryland, Delaware, Maine.

CHAIR WARE: All those opposed.

MS. KERNS: New Hampshire, Pennsylvania, Fish and Wildlife Service, NOAA Fisheries, New Jersey, New York, Connecticut, Massachusetts.

CHAIR WARE: In good striped bass fashion, that motion fails 8 to 8. I should ask, there were no abstentions. Everyone voted. That motion fails 8 to 8, so we are back to our underlying motion. Are there any other motions to amend or substitute the underlying motion? Seeing no hands, does anyone need time to caucus on the underlying motion? All right**, I think we are ready to vote on the underlying motion. All those in favor of the motion, please raise your hand.**

MS. KERNS: New Hampshire, Maine, Maryland, Potomac River Fisheries Commission, District of Colombia, Virginia, North Carolina, Pennsylvania, Fish and Wildlife Service, NOAA Fisheries, New York, Connecticut, Massachusetts, and Rhode Island.
CHAIR WARE: All those opposed.

MS. KERNS: New Jersey.

CHAIR WARE: I don't think there are any abstentions, oh there is a null, okay. Any abstentions? Then any null votes? I just want to confirm Delaware is a null vote.

MS. KERNS: Delaware.

MR. CLARK: We are indeed a null vote.

CHAIR WARE: That motion passes 4 to 1 with 1 null vote, 14 to 1 with 1 null vote. Okay, so we've made it through one motion. What I'm going to recommend is we do a seven-minute bathroom break, and we come back. The next step as I see it is what do we want the TC to work on between now and this special meeting. While you are on a seven-minute break, please think of that. That will be our next step.

(Whereupon a recess was taken.)

CHAIR WARE: Now for real that we're going to get started. Our task now is to think about what the TC should work on between now and the special board meeting, so that this Board feels prepared and has the information they need to decide how they want to move forward. I'm going to turn to Nichola, because I've seen some lists being started, and we'll see where this goes.

My hope is that the Board can generate a reasonable list that does not require a motion, it would just be a TC task. However, if we find strong disagreement between the Board members then we will go to motions.

MS. MESERVE: Thank you, Megan, so I developed this list in consultation with a number of people over the last 48 hours, trying to hit a bunch of different points on it. I do think we need to pare it down though. But the first one is just a basic thing to update the projection that we've decided we're using, with the actual Wave 4 numbers in it. Then estimate the reduction and removals needed to achieve that 50 percent probability of rebuilding in 2029. We said earlier that if 14.5 percent, maybe that will change just a little bit when we include the realized Wave 4 numbers.

That is about what we were thinking about, right? Then I heard interest in also doing a run of that, where we're looking for a 60 percent probability of rebuilding in 2029, not to develop options based on that, just for comparison to know what aiming for a higher probability, what that would look like.

I think the meat of the taskings for the TC is developing a range of ocean and Chesapeake Bay recreational no-harvest season closure options at the regional level to achieve the reductions. I'm specifying regional in there, because conversations I've had indicated that a coastwide closure option faces equitability options and state-specific closure options move us too far away from the kind of more coastwide approach that we've been trying to take.

It looks a little bit too much like conservation equivalency, and I think regional is the middle ground between those two. It does specify no

harvest closures as the principal option to analyze that takes into consideration the Board work group, you know recommendations that we would pursue, no targeting closures, only in a flexible manner.

That is why it says, include the equivalent no targeting closure lengths for each option, so that there would be some understanding of what a no-targeting season would look like in comparison to a no harvest, and then the Board can deliberate in December if they want to consider that for any region or management area.

I heard that there was interest to look at a slot limit that is below the current 28-inch minimum size for the ocean recreational fishery, you know something where both the minimum and the maximum is below the current 28-inch size limit. Reading the Technical Committee memo, I am a little concerned that that would be difficult to do for December, because they said they needed to pull from logbook data and other sources that haven't already been pulled together.

If I had to drop one from the list, I would drop Number 3. Based on our discussions about the six years of poor recruitment, what did that really do to our probabilities of rebuilding? You know another projection that we could do is expressed in Part 4 that would be to just give us, what is the reduction necessary to get to rebuilding if you're only pulling the recruitment in the projections from 2024, so it excludes the 2018-year class and those prior to it. Options would be developed based on that, but it's kind of the worst-case scenario, just so we would know what that looks like. That could also be dropped down, I think one and two in my mind are the major tasking to the Technical Committee. I would welcome any additional Board input. I didn't get a chance to talk to everybody in the room, but I just thought it would be helpful to put something on paper to give us an ability to focus in the discussion.

CHAIR WARE: I'm going to look to the head of the table here for a bit of a reality check on what can be accomplished. I'll look to Tyler and Emilie and Katie to help inform if this is reasonable, and then we'll go from there, however you guys want to.

MR. GRABOWSKI: From the TC perspective, I think I'm going to speak to the Task Number 3, developing an ocean slot limit option below the current 28 inch minimum. I think like Nichole mentioned, we're going to be pulling from state logbooks, so first we would have to pull that data, we would have to internally review that data.

Then we would have to internally analyze that. Given that it's October 23, and an assumption would be to get information to the Board by roughly December 1st, I don't know if the time is there to develop an analysis on that limited dataset by December 1st. From the TC perspective that one seems like a bit of a stretch to accomplish for a December meeting.

DR. DREW: I think the only thing that I would add is, if the Board is very set on that one, I think we would ask to swap out the no-targeting closure analysis, so that we could look at harvest closures and the ocean slot limit, or we could look at harvest and no-targeting closures and not the ocean slot limit, just in terms of the amount of work that we can accomplish.

MS. FRANKE: I guess just to further add on to that. I think, even if we were just looking at the no targeting closures. If there were different regional options, as I mentioned earlier this no targeting analysis has not yet been applied to the ocean, so we don't know if there are going to be any issues or discussion points from the TC, so I think the no targeting reductions could come, but there might be some TC sort of caveats on the results of those analyses.

I think from a process perspective, just important for the Board to think about. You know if the meeting was scheduled, for example December 10, when would the Board want the meeting materials ahead of that meeting? There was a suggestion

earlier about Commission staff potentially doing a webinar or two to potentially engage the public prior to the meeting. I think just it will be helpful for the Board to think about, what are your expectations around when you would be getting the meeting materials, and in terms of public input.

CHAIR WARE: I think what I'm hearing is we need to pare this down. There are a couple ways we can do that. Doug, I saw your hand, do you want to comment on the list?

MR. GROUT: One, I was one that was lobbying to at least look at the ocean slot limit under 28 inches. I certainly respect the fact that there is only so much you can do, and that is fine. As long as we have these other size limit changes, and there won't need to be any changes to those. I assume all we're talking about is what we're looking for the change up in Number 1 there. If that is not going to affect what this percentage reductions, you're going to get from these different size limits that you already did. Is that correct?

MS. FRANKE: Right, so just to confirm. In the supplemental materials for this meeting, the TC did include a table of some size limit analyses the TC did. I don't think those analyses would change on paper. But even though those analyses are done, I think we just want to emphasize the no targeting closures and the slot limit below the 28 is a lot for the TC to try to accomplish in the next four weeks.

CHAIR WARE: I have Marty Gary.

MR. GARY: I think we might need to amend this. I'm trying to figure out how the Hudson fishery fits in, because we have a 23-to-28-inch slot, April 1 to November 30, with a no-targeting provision on top of that. I'm not sure how we incorporate that or address that.

MS. FRANKE: To that question of, like in Addendum II there were specific area proposals from Pennsylvania, Delaware, and New York for their Hudson River, Delaware Bay, and Delaware River fisheries. I think there would be the same process, where those states could submit proposals to the TC for mimicking that reduction in those areas. I'm not quite sure what the timing would look like. I know, for example, for the Hudson and Pennsylvania those seasons start earlier in the year, so I think we could think about the exact timing of that.

CHAIR WARE: I have Emerson Hasbrouck.

MR. HASBROUCK: If we need to make a choice between a slot, an ocean slow below 28 inches or evaluation of equivalent no-targeting closure, I would favor foregoing the slot lower than 28 inches, and continue to include a no targeting closure. That would be my preference. Then, I have a question.

In the October 16 TC and SAS Committee, there were some analyses. I'm referring to Table 3, potential sector reductions for different sector splits and the best-case scenario and the worst-case scenario. I would like to see that table updated, based on, I guess what the output is from Option 1, so that we can look at reductions based on sector contributions to total removal.

MS. FRANKE: Yes, absolutely. We can make sure that the reductions are updated based on the inclusion of the Wave 4 data.

MR. HASBROUCK: Thank you.

CHAIR WARE: Adam Nowalsky.

MR. NOWALSKY: Based on what was included in the TC memo and the comments here today, I view 3 as a complete nonstarter at this point. This is something they don't have the data for, not even sure if they are going to have it in time. Not even sure what it's going to need to look at it, so I would advocate for just striking 3 from this list entirely.

If there is a concern about something else that has to go, due to time constraints, unlike Option 3 on the no-targeting closure, the TC has indicated that the data that Maryland already has is something

that they could work with. I think that that is something useful to continue to develop, and if something has to go these comparative options would be something I would look at as nice to have, but not have to haves, as something that could be dropped from this list. I also do have some concern about how those could be utilized, particular in any public comment. I heard the term here, worst-case scenario, so then that becomes a bargaining chip/rationalizing for some other options, so I would have concern about developing those, particularly knowing they may be used that way if it comes down to having to choose something. I would choose the first half of 1 and all of 2 as the priorities here, strike 3 entirely, and then have the second part of 1 and 4 as, if there is time.

CHAIR WARE: Thanks, Adam. David Borden.

MR. BORDEN: I was going to say something similar, but let me just say that that would be fine with me, but I would also be fine with leaving the list the way it is, and if Doug would basically agree that Item 3 would be the lowest priority on the list. If they have time, they will develop it. If they don't have time, they won't do it all. Doug.

CHAIR WARE: Do you want to respond to that?

MR. GROUT: Yes, I'm fine with that. I would put Item 4 as the lowest priority on the list and the Item 3 as the next lowest priority on the list.

DR. DREW: I mean just to be clear; the projection scenario is looking at it as running additional projections are the easiest part of this, and they are low-hanging fruit. Two and three are the heavy lift for the TC.

CHAIR WARE: What I'm hearing, and folks can disagree or correct me if you feel like it's an inaccurate assessment, is the priority order is almost the order in which it is written right now. Perhaps maybe with the exception of that 60 percent probability, which Adam had pointed out. But understanding what the projection is with the Wave 4 data updated, looking at harvest season closures, then looking at no target's closures, and the last ranked measure option would be the slot limit. I wanted to set expectations, kind of hearing the background chatter here.

I don't think they are going to get to all three of those. Unless there is some miracle of AI for striped bass in the next month, you are not going to get all three of those. Is the Board comfortable with that approach? Let me just check in here to make sure the folks that actually could do the work are comfortable with that approach. Is there anyone that is uncomfortable with that approach? That would be important to say. No, okay. Is there any other comment on this? Yes, Adam.

MR. NOWALSKY: Depending on the timing and if Wave 5 data became available, would there be some way to possibly have that? That would be close if this meeting occurs in the middle of the month, it would be close.

DR. DREW: Yes, I don't think so, because we would need to basically that Wave 5 data would influence the reduction that we're going to need to take, which would start everything over again. I think it's very unlikely that we would be able to incorporate Wave 5 into what we present to you. We might be able to be in a situation like we are now, where it's like, well Wave 5 just magically appeared and is what it is you guys, after all of this work has been done. But I think it would be very difficult to make that timing work on what we need to do.
CHAIR WARE: Yes, Jason.

DR. McNAMEE: On that point, so I appreciate that. But I'll just suggest, it would be good to, just like we did today, to kind of ground truth that catch assumption that we're making. Just to kind of tag that as a slide in the presentation or something like, here is what we projected and here is what it actually was, I think would be helpful.

CHAIR WARE: Justin Davis.

DR. DAVIS: I honestly can't remember the motion we voted up like 20 minutes ago. Did it contemplate the Board eventually changing size limits at the December meeting? For Number 2, we're going to develop season closure options that achieve some reduction, based on an assumption of no size limit change.

Then we're sort of setting ourselves up for a place where, when we get to December the Board wouldn't be able to mix and match. We want to be able to, for instance, decide we want to adopt a 33-to-36-inch slot in the ocean fishery, and some closure, because the closure option is going to assume that the size limit stays status quo.

DR. DREW: I think in that case, if you're interested in mixing and matching, I think we did not anticipate the size limit changes based on the comments that the TC had made, which is that what we have run so far does not give you the full reduction, and it gives you such a small reduction that it's essentially noise.

If the Board is interested in combining a slot limit or a size limit change with a season reduction change, I think that would be good for us to know now, and I think at that point it will mostly just be multiplying things together, as opposed to what is going to take the most time on this is developing that no-targeting closure analysis approach. I think it's possible if the Board is interested in that if the Board, I guess, yes, I don't want to overpromise what we can do. But if the Board does give us that direction right now, we can try to make that work.

CHAIR WARE: Justin, a follow up?

DR. DAVIS: Yes, I'm just thinking, you know if we're talking about a 15 percent reduction, 4 to 5 percent is not noise in that context, right? Like we want to consider a season closure option that only got us 10 percent if we need 15. But if the combination of a size limit and a season on paper gets us.

Then I don't know if the path forward is to include some season closure options, if they come sort of close to a required reduction, with the idea that by combining them with a size limit would greatly increase our probability of actually hitting the target. I don't know if it's sort of like a plus or minus 2 percent kind of margin of error there on the seasons, kind of allows you to look at some stuff to combine with a size limit.

DR. DREW: Yes, so I guess I think, and I think I'm going to speak more for myself than for the TC, because I don't think we fully discussed this. But I think the issue is, like you're thinking about it as, okay we can add this 2 percent from this 1-inch change in the slot limit to a 13 percent change from the season, and we're going to get the 15 percent. Is that any different from just doing the season closure? I think the president is not like, you know I think the TC or I would like to emphasize that once you're talking about 4 to 5 percent changes on the size limit changes, is that actually any better or different than just doing to seasonal closure, or doing a more aggressive seasonal closure, like I think especially with seasonal closures.

Then you were just talking about adding a couple of extra days. I think one of the things we talked about is that adding a few extra days at a time is less effective, because of the potential to just compress that effort down versus spread it out. Trying to nibble away, I guess, at this at the edges is probably not as effective as we would hope. We can present these numbers to you and maybe emphasize some of that uncertainty, but we're getting to the point where small changes around the edges are probably not as effective as we would like them to be.

CHAIR WARE: Nichola, you're all set, okay, Doug Grout.

MR. GROUT: I would like to have size limits as an option, either alone or in combination, because my desire in having changes of a size limit is to get the harvest pressure off of the 2018-year class. I think if you change the size limit that is the most effective way to get it off there. I understand that isn't going to reduce, may not accomplish the reduction in

fishing mortality that we need to go on, but I would like to have that as part of one of the options, either by themselves, the ones that actually get at least 5 percent reduction.

MS. FRANKE: Just to confirm, size limits were in the motion, so are on the table.

CHAIR WARE: Doug, could a compromise be, in the supplemental materials we had different slot limits, take the one that got the biggest reduction and do a combo with that as an example for you? Yes, so a combo. What I'm hearing is, again just to recap. Biggest priority is the first part of Number 1, and as much of Number 2 as we can get.

We have had a request for one combo run. I think Number 3 is probably unlikely, but we've ranked it as well, and the same for Number 4. Thank the TC in advance for all of the hard work they are going to be doing over the next month, and we'll be very grateful for the analysis we get when we get it.
DR. DREW: Sorry, one more question. Regional approaches, we had several regions for season limits defined in the previous draft amendment addendum. Like for example, Maine through Connecticut and New York through North Carolina was one region. We had Maine through Massachusetts and Rhode Island through North Carolina as another region.

We had Maine through New Hampshire, Massachusetts through New Jersey, Delaware through North Carolina as a region. I think that is getting a little excessive, and especially with a no-targeting component analysis. I guess I would look to the Board. Would they like to continue to make a judgment call on this? Would they like to recommend a region or prioritize the regions in some way?

CHAIR WARE: All right, so I know it's getting late. Any reactions to those regions? Yes, Justin Davis.

DR. DAVIS: I'll just say from Connecticut standpoint it's untenable for New York and Connecticut to not be in the same region, because we share Long Island Sound.

CHIAR WARE: Okay, I think we've eliminated one, that's great. Doug Grout.

MR. GROUT: I would like to keep in a Maine, New Hampshire Region.
CHAIR WARE: I think we're holding steady at two. We're going to give the grace to the TC also to do as much as they can. But we are not asking them to stay up and pull all-nighters, like we need to keep this realistic. As long as everyone is comfortable with that expectation, I think we have provided guidance today that seems sufficient. It's not in the form of a motion, I hope everyone is okay with that, but I didn't hear disagreement among folks. Yes, Roy Miller.

MR. ROY W. MILLER: Madam Chair, did I hear you propose the date for this meeting?

CHAIR WARE: I have not, and I'll turn to Emilie to talk about logistics.

MS. FRANKE: I'm actually going to defer to Bob and Toni, I know they have been thinking about the calendar a little bit.

MS. KERNS: Well, I think we'll doodle as we normally do, and we may look to in front of a Council meeting, I think the New England Council meeting is far too early to go in front of, but maybe the Mid-Atlantic Council meeting perhaps, and they meet here in this hotel. There is also the week after that.

But it still starts to get a little dicey with the holidays, so we'll do our best. That is one of the other reasons why a webinar may need to work, just because of logistically getting people to be able to have a meeting. We may doodle two ways, one for in-person and one for webinar, to figure out availability.

CHAIR WARE: All right, so be on the lookout.

EXECUTIVE DIRECTOR BEAL: Just really quick to add to that, Megan. It's not going to be perfect, we're not going to be able to get everybody that is in this room to that meeting or on the webinar, so we're going to focus on at least one or two Commissioners per state. But we know it's just not going to be perfect, so we'll do what we can though.

CHAIR WARE: Look out for a doodle poll at some point in the near future.

MS. FRANKE: I guess, as I mentioned earlier, you know what is the Board's expectation for how far in advance you are looking to see the meeting materials posted? I mean obviously I know the sooner the better. But the sooner our meeting materials are posted means a little bit less time for TC review, so I'm just looking for what you are comfortable with, for how far in advance you would like the TC report to be posted.

CHAIR WARE: I see Dave Sikorski and then Mary Gary.

MR. SIKORSKI: I wonder if a week is practical? Almost would turn it back to you all to say, what is practical.

MS. FRANKE: I think a week is practical, I think two weeks is practical. However, that means less time for TC review. I would turn it back to the Board, in terms of what you're comfortable with also, in terms of public input.

CHAIR WARE: Marty Gary, do you want to comment on that?

MR. GARY: Actually, I'll defer until we resolve the date thing, but I did have another comment if we finish that.

CHAIR WARE: I'm going to say between one and two weeks, and I do want to just note, you know I think we took seriously the comment about trying to get an AP meeting or some sort of webinar, so we'll be working on that as well, and that may influence the schedule a little bit. Okay, Marty Gary.

MR. GARY: Just want to let that settle. Last thing I want to do is add more complexity, but I want to go back to my other thought that I brought forward to the Board earlier, about somehow, and I know it's challenging enough just to get the Board meeting on the schedule, but if there is some way we can integrate the AP into the process, and I don't know where they would fit in when. I see Emilie smiling, I'm not trying to make your life more complicated. But if we could, I think it would be great.

MS. FRANKE: I think we can definitely schedule an Advisory Panel meeting.

CHAIR WARE: Well, we're only two hours over schedule, but we did make it through Agenda 5, guys. I'm going to bring us to Other Business, oh, no I'm not. Bob.

EXECUTIVE DIRECTOR BEAL: There was a lot of comment about public comment, public input. I think we'll work as staff to try to try and figure out the best way to do that. Maybe it's one or two webinars even. We're definitely not going to have the time to do a webinar per state or anything even close to that.

I don't know, we'll set up a well-publicized timeline to submit comment that we can compile and bring that forward. But it is going to be really compressed. The tricky part is that some of the Technical Committee work needs to be done to describe the options that we accept public comment on. It's going to be kind of threading the needle, but we'll see what we can do.

OTHER BUSINESS

CHAIR WARE: Thank you, so I'm going to bring us to Agenda Item Number 6, Other Business. Doug Grout, you had an Other Business?

ASSESSMENT TIMING

MR. GROUT: Yes, I just wanted to ask that we have a discussion at a future Striped Bass Board meeting about the timing of assessments in conjunction with our management actions, because we've run into a situation with this particular assessment, where we're projecting 2004 results, and it's much better to have and much less uncertain to have a terminal year estimate from a model, than it is to do the projections.

I brought this up with Megan, because on the assessment schedule we had the benchmark assessment in 2017, and potentially a turn of the crank on 2016, and I said, but we're not going to have any information. We're not going to have a terminal year in that assessment of what we do in 2005.

I mean 2005 would be the terminal year, or 2016 turn of the crank. All I want to do is have a discussion, an agenda item in the future about trying to line those things up, rather than just saying, well it was supposed to be in this year, and then we have a management action where we don't have a terminal year of the assessment to evaluate it.

CHAIR WARE: Thanks, Doug, yes, we can definitely schedule that for a future meeting. Any other business to come before the Board today?

MR. ABBOTT: One thing.

CHAIR WARE: Yes, Dennis.

MR. ABBOTT: I think running over two hours, I think you've broken Dave Borden's record for making meeting run overtime.

ADJOURNMENT

CHAIR WARE: All right, I think that is it for the Board. I really want to thank Tyler, Emilie, Katie, and Gary. This is a massive team effort up here; they are doing most of the work. Thank you, guys, and everyone have a good evening.

(Whereupon the meeting **adjourned** at 6:30 p.m. on October 23, 2024)

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **Atlantic Striped Bass Management Board**

FROM: **Emilie Franke, FMP Coordinator**

DATE: **December 3, 2024**

SUBJECT: **Clarification on Upcoming Board Decisions**

This memorandum addresses questions from Board members about the Board action provision and Board direction on potential management decisions.

Board Action Provision

Addendum II to Amendment 7 to the Interstate FMP for Atlantic Striped Bass states:

> If an upcoming stock assessment prior to the rebuilding deadline (currently 2029) indicates the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%, the Board could respond via Board action where the Board could change management measures by voting to pass a motion at a Board meeting instead of developing an addendum or amendment (and different from the emergency action process).

The 2024 Assessment Update included short-term projections to determine the probability of rebuilding by the 2029 deadline. The Board agreed with the Technical Committee and Stock Assessment Subcommittee that the most likely projection scenario estimates an increase in fishing mortality in 2025 due to the above average 2018 year-class entering the current recreational ocean slot limit combined with the lack of strong year-classes behind it. In this scenario, the assessment indicates the probability of rebuilding by 2029 is less than 50%. The Board action provision applies since the projection scenario from the assessment indicates there is a less than 50% chance of rebuilding, allowing action without an addendum to change 2025 management measures with the intent of increasing the probability of rebuilding. However, the Board is not required to take action at this point. The requirement is to rebuild to the spawning stock biomass target by 2029, but it is the Board's decision on when/how to take action during this rebuilding time period.

Recreational Area-Specific Measures

Addendum II to Amendment 7 required three areas (listed below) to develop area-specific recreational measures to meet the Addendum II reduction in each area. If the Board changes measures for 2025, it is a Board decision whether to require similar area-specific measures for 2025. There may be different considerations depending on the type of recreational measures selected for the ocean (size limits vs. seasonal closures). The Board would need to specify a timeline for development of new measures and review by the Technical Committee and Board.

- New York: the Hudson River management area
- Pennsylvania: April–May slot fishery in the lower Delaware River/Estuary
- Delaware: July–August slot fishery in Delaware River/Bay

Seasonal Closure Details

If the Board decides to implement seasonal closures, states would be required to implement a closure within a particular two-month Wave during the year. If states are grouped together in a region with a closure during the same Wave, it is a Board decision whether all states in that region need to have the same closure dates. If so, the Board should specify when the decision on specific dates needs to be made. That decision could be made at the December 16, 2024 meeting or at a later date (e.g., February 2025 Board Meeting).

For example, during the Addendum II process, prior to the Board removal of season closures, the Draft Addendum specified that all states within a region (for regional closures) or coastwide (for a coastwide closure) would have the same closure dates.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **Striped Bass Management Board**

FROM: **Striped Bass Technical Committee and the Stock Assessment Subcommittee**

DATE: **December 3, 2024**

SUBJECT: **Updated Projections and 2025 Management Considerations**

The Striped Bass Technical Committee (TC) and Stock Assessment Subcommittee (SAS) met via webinar on November 13, 2024 to address the tasking from the Striped Bass Management Board's October 2024 meeting. The Board requested these tasks to inform consideration of 2025 management measures to be discussed at a special Board meeting in December 2024.

Task 1A. Update the "low 2024 removals with *F* increase in 2025 only" projection from the 2024 Stock Assessment Update with realized 2024 Wave 4 MRIP data, and determine the reduction in removals needed in 2025 to achieve a 50% probability of being above the SSB target in 2029.

Task 1B. For comparison only (not option development), identify the reduction in removals needed in 2025 to achieve a 60% probability of being above the SSB target in 2029.

Task 2. Develop a range of Ocean and Chesapeake Bay recreational no-harvest seasonal closure options at the regional level to achieve the reduction. Include the equivalent no-targeting closure length for each option.

Task 3. Develop an ocean slot limit option below the current 28" minimum.

Task 4. For comparison only (not option development), conduct an alternative "low 2024 removals with *F* increase in 2025 only" projection where age-1 recruitment is sampled from 2020-2024 only, and determine the reduction in removals needed in 2025 to achieve a 50% probability of being above the SSB target in 2029.

This report and enclosed appendices summarize the findings of the TC-SAS on all four tasks.

Summary of TC-SAS Conclusions

- Estimated removals for 2024 were lower when extrapolated from Waves 2-4 MRIP data instead of from Waves 2-3 MRIP data, resulting in a lower estimate of *F* in 2024.
- Updating the "low 2024 removals with *F* increase in 2025 only" projection from the 2024 Stock Assessment Update with realized 2024 Wave 4 MRIP data, and assuming fishing mortality (*F*) decreases in 2026-2029 to the lower 2024 level after the 2025 increase, resulted in a 57% probability of rebuilding by 2029 and a 0% reduction needed.
- The TC/SAS also ran the updated scenario assuming *F* in 2026-2029 decreases to a lesser extent (only decreases to *F_rebuild* instead of the lower F_{2024} value), which resulted in a 46% probability of rebuilding by 2029 and an 8% reduction needed.
- The TC also continued to consider the original scenario from the stock assessment with F_{2024} not updated (still based on MRIP data from only Waves 2-3) which resulted in a 43% probability of rebuilding by 2029 and a 14% reduction needed.
- In all three primary scenarios, female spawning stock biomass (SSB) continues to increase toward the target.
- The TC-SAS notes that all three primary scenarios represent a credible range of what might happen. As such, the Board should consider its risk tolerance when considering possible management response for 2025 and beyond. The level of risk the Board is willing to accept (with respect to resource status, economic loss, and persistent modeling uncertainty due to annual management changes) is a management decision.
- The TC-SAS highlighted several major sources of uncertainty in the projections including the realized 2024 removals, the magnitude of the increase in *F* in 2025 that is expected to occur, and the *F* rate that the population will experience from 2026-2029.
- The TC-SAS notes that it is difficult to monitor management actions to achieve reductions of less than 10% for effectiveness, due to both the uncertainty in the MRIP estimates that makes it difficult to measure such a small change in total removals and the uncertainty in the reduction calculations themselves (e.g., unknown changes in angler behavior).
- Recreational size limit changes, including modifying the existing slot limits or changing to a higher minimum size instead of a slot, resulted in low reductions, particularly in the ocean region.
- For recreational seasonal closures, the extent of the predicted reduction depended on the type of closure (no-harvest vs. no-targeting) and assumptions about effort and angler behavior under the different closure types.

Updated Projections

Per Tasks 1A, 1B, and 4, the TC-SAS conducted additional projection runs using the model from the 2024 Stock Assessment Update. These additional projections change certain variables in the Board's original projection scenario of interest, which projected 2024 removals based on preliminary 2024 MRIP data from Waves 2-3, followed by an increase in fishing mortality (*F*) in 2025, and a subsequent decrease and stabilization of fishing mortality from 2026 through 2029. For the stock assessment, 2024 removals were projected by expanding preliminary 2024 MRIP estimates for Waves 2 and 3 (March-April and May-June) to the full year, based on the

proportion of total removals that occurred in those Waves in earlier years, and accounting for an estimated 7% decrease in commercial removals due to the Addendum II quota reduction.

For 2025, the increase in F_{2025} from the projected 2024 *F* corresponds to the above-average 2018 year-class entering the current ocean slot limit. The subsequent decrease of *F* in 2026 and stabilization through 2029 corresponds to the 2018 year-class growing out of the current ocean slot limit and the lack of strong year-classes behind it. The increase in F_{2025} used in the projections (+17%) is the same magnitude as the increase from 2021 to 2023 when part of the 2015 year-class was still in the newly reduced ocean slot limit, but this may be overestimating the magnitude of increase in 2025 since the 2018 year-class is not as strong as the 2015 year-class was.

The Task 1A scenario added preliminary 2024 MRIP data for Wave 4 (July-August) to update the estimate of 2024 removals and associated *F*. Wave 4 data became available after completion of the 2024 Stock Assessment report. When using data through Wave 4, 2024 removals are estimated at 3.67 million fish (F_{2024}=0.12). When using data only through Wave 3 as in the original scenario, 2024 removals are estimated at 3.89 million fish (F_{2024}=0.13).

In 2025, assuming no management intervention, *F* is estimated to increase by 17%. After that increase, the original scenario assumed *F* would decrease back to the low levels of F_{2024}, which happened to be equal to *F_rebuild*, the constant *F* rate necessary for SSB to be at or above the rebuilding target in 2029 with a 50% probability. So, the *F* in 2025 was higher than the constant *F* needed to rebuild the stock, and returning to *F_rebuild* in 2026-2029 would not offset that 2025 increase.

In the updated scenario incorporating 2024 Wave 4 MRIP data, *F* in 2024 is lower than *F_rebuild*, so two sub-scenarios are presented. *F* increases in 2025 in both sub-scenarios, but in scenario 1A(1), *F* decreases to the lower F_{2024} for 2026-2029, while in scenario 1A(2), *F* decreases only to *F_rebuild* for 2026-2029. If *F* in 2026-2029 decreases to the lower F_{2024}, those years of lower *F* in 2026-2029 would offset the increase in 2025 and no reduction in 2025 would be necessary. However, if *F* in 2026-2029 decreases only to *F_rebuild*, those years would not offset the 2025 increase.

The Task 1B scenario, specified by the Board as a comparison run only, changed the desired probability of rebuilding to 60% instead of 50% in addition to adding the Wave 4 MRIP data to estimate 2024 removals.

The Task 4 scenario, specified by the Board as a comparison run only, changed the recruitment assumption in addition to adding the Wave 4 MRIP data to estimate 2024 removals. The original recruitment assumption in the stock assessment assumes future recruitment is based on the 'low recruitment regime' period of 2008-forward. This new projection assumes future recruitment is based on only recent years from 2020-forward, which is a period of particularly low recruitment with no above-average year-classes.

Table 1 summarizes the parameters and probability of rebuilding for each scenario (three primary scenarios and two comparison scenarios). Although the parameters for each scenario vary, the rebuilding trajectories for all scenarios are very similar and consistently indicate female spawning stock biomass (SSB) will increase under all scenarios and reach levels just below or just above the target in 2029 (Figure 1). The probability of rebuilding ranges from 57% to 43% across scenarios.

Table 1. Summary of projection scenarios. Shaded boxes in each row represent changes from the original assumptions (first row).

Scenario	*F*2024 MRIP Data	Recruitment used for Projection	*F* 2026-2029 After 17% Increase in 2025	Desired Prob. of Rebuild	Scenario Prob. of Rebuild	Reduction in Removals from 2025 Increase to 2025 Rebuild
Original	Waves 2-3 F_{2024}=0.13	2008-forward	2026-2029 = *F 2024* = *F_rebuild* = 0.13	50%	43%	-14%
Task 1A (1)	Waves 2-4 F_{2024}=0.12	2008-forward	2026-2029 = *F 2024* = 0.12	50%	57%	0%
Task 1A (2)	Waves 2-4 F_{2024}=0.12	2008-forward	2026-2029 = *F_rebuild* = 0.13	50%	46%	-8%
Task 1B *comparison only*	Waves 2-4 F_{2024}=0.12	2008-forward	2026-2029 = *F_rebuild* = 0.12	60%	54%	-12%
Task 4 *comparison only*	Waves 2-4 F_{2024}=0.12	2020-forward	2026-2029 = *F_rebuild* = 0.13	50%	45%	-10%

2025 Reductions to Achieve F_rebuild

The reduction for 2025 is calculated as the percent difference between the expected increased 2025 removals and the level of 2025 removals needed to achieve *F_rebuild* in 2025 given the various assumptions for *F* in 2026 through 2029.

The probability of achieving rebuilding by 2029 range from 57% to 43% across the three primary scenarios which equate to reductions ranging from 0% to 14% (Tables 1-2). The TC-SAS notes that all three primary scenarios represent a credible range of what might happen. As such, the Board should consider its risk tolerance when considering possible management response for 2025 and beyond. The level of risk the Board is willing to accept (with respect to

resource status, economic loss, and persistent modeling uncertainty due to annual management changes) is a management decision.

Note on Smaller Reductions

The TC-SAS notes that the outcome of management changes designed to achieve small changes (i.e., reductions or liberalizations of less than 10%) would be difficult to measure given the uncertainty in the MRIP estimates. Total removals are not known to within 10%, so a reduction of less than 10% would not be statistically distinguishable from no reduction at all (i.e., status quo measures). In addition, the effectiveness of measures estimated to achieve a small percent reduction on paper for the recreational fishery would be overwhelmed by uncertainty in the reduction calculations themselves, including uncertainty around fish availability, effort, and angler behavior.

Table 2. Reduction calculations for primary projection scenarios.

	Original	**Task 1A(1)**	**Task 1A(2)**
2024 Removals	3.89 million fish (based on Waves 2-3)	3.67 million fish (based on Waves 2-4)	3.67 million fish (based on Waves 2-4)
2025 Removals under Increased *F* *(+17% from F2024)*	4.36 million fish	4.13 million fish	4.13 million fish
2025 Removals to Achieve *F_rebuild* in 2025	3.74 million fish	Lower *F*2026-2029 offsets 2025 increase; no reduction in 2025 removals required	3.81 million fish
Percent Reduction from 2025 Increased Removals to 2025 Rebuild Removals	-14%	0%	-8%
***F*2026-2029**	F2026-2029= *F_rebuild*=*F*2024=0.13	F2026-2029= *F*2024=0.12	F2026-2029= *F_rebuild*=0.13

The primary scenarios and resulting reductions differ in two ways. First, the projection starting value of 2024 removals is estimated based on either preliminary 2024 MRIP data from Waves 2-3 or Waves 2-4. While including additional data (i.e., adding Wave 4) is generally informative, the TC-SAS notes that using Waves 2-4 to predict removals does not always result in a more accurate estimate of final removals than using only Waves 2-3. Figure 2 shows the difference between final MRIP estimates and projected estimates based on average proportion of landings by Wave for years 2018-2022 using Waves 2-3, Waves 2-4, and Waves 2-5. Predicting removals using Waves 2-4 sometimes over-estimated and sometimes under-estimated final removals, and estimated removals using Waves 2-4 was not always closer to the final estimate than using Waves 2-3. The addition of the Wave 4 data increases the TC-SAS's confidence that the "low 2024 removals" scenario from the 2024 Stock Assessment Update is more likely to be correct

than the “high 2024 removals” scenario, but the lower Waves 2-4 estimate may not necessarily be more accurate than the Waves 2-3 estimate, especially if effort increases in Waves 5 and 6 as it has in recent years.

The second difference between the primary scenarios is the magnitude of decrease in *F* from 2025 to 2026-2029. When using data through Wave 4 to estimate 2024 removals, F_{2024} is less than *F_rebuild*. While the TC-SAS considers it likely that *F* will decrease after 2025 as the 2018 year-class grows out of the current ocean slot limit and is followed by weak year classes, the magnitude of that decrease in 2026 and beyond is highly uncertain.

The probability of rebuilding by 2029 and the reduction needed to keep that probability at 50% was driven by the final 2024 total removals, which determined the *F* in 2024 and 2025, and the level to which *F* is predicted to decrease after 2025.

The comparison scenario Task 1B indicates that to achieve a higher desired probability of rebuilding at 60% instead of 50%, a higher reduction would be needed in 2025 as compared to Task 1A.

The comparison scenario Task 4 indicates that to achieve the same 50% probability of rebuilding under slightly lower future recruitment than Task 1A, a slightly higher reduction would be needed. However, this difference between this Task 4 scenario and Task 1A scenario are very minor, which is logical since only a small portion of the 2020-2024 recruits would be mature by 2029 and would not have a major impact on SSB yet.

Underlying Sources of Uncertainty for Projections

Although these projections aim to capture some component of changing effort and fish availability (i.e., increased *F* when strong year-classes are available), angler behavior and fish availability are still sources of uncertainty. Additionally, there is high uncertainty in the exact *F* values that will occur over this period even with constant regulations. The estimated F_{2024} and *F_rebuild* values for all scenarios would be the lowest values since 1994, which is possible given both the extremely narrow slot limit and the lack of a strong year class in that slot. The low year-classes following the 2018 year-class will result in lower availability of harvestable fish after 2025, which may result in a decline in effort and a lower *F* from 2026-2029; however, if removals remain constant on these weaker year-classes, *F* may not decrease as much as expected. Finally, the ability to maintain a constant *F* for consecutive years is difficult even with regulation changes. While the projections assume a constant *F* for 2026-2029, the TC-SAS cannot predict how *F* will vary from year-to-year.

Another source of uncertainty is the selectivity curve. The projections apply the 2024 selectivity curve to all years 2024-2029. The 2024 selectivity curve was developed using an alternative method to better capture the regulation change in 2024, but how well it represents actual fishery selectivity is uncertain. Additional years of data under the same management regulations would inform a better estimate of selectivity for upcoming assessments and future projections while annual management changes would increase this uncertainty.

Potential Management Options

If the Board decides to proceed with a reduction in 2025, the Board was interested in a range of options to split the reduction between sectors (Table 3). The Board indicated commercial reductions would be considered via reductions in commercial quota. Per Board member request, see Figure 3 for a summary commercial quota utilization in recent years.

Table 3. Potential sector reductions for the reduction scenarios of 14% and 8%.

	Even Reductions		**No Commercial Reduction**		**Reductions Based on Sector Contribution to Total Removals**	
Total Reduction	**Comm.**	**Rec.**	**Comm.**	**Rec.**	**Comm.**	**Rec.**
-14%	-14%	-14%	0%	-16%	-1.5%	-16%
-8%	-8%	-8%	0%	-9%	-1%	-9%

Recreational Size Limits

The TC-SAS calculated reductions from various recreational size limit options (Table 4). Methods are described in Appendix 1. The TC-SAS discussed tradeoffs of changing the size limit to allow harvest of larger fish in the ocean vs. maintaining the current slot limit targeting smaller fish. If ocean harvest remains in the current 28-31" slot, the remaining larger 2015s will be protected but the incoming 2018 year-class will be subject to harvest. If harvest is shifted to larger fish, the incoming 2018s would be protected but the larger 2015s would then be subject to harvest, the very fish recent measures were designed to protect.

Per Task 3, the TC-SAS also discussed the idea of an ocean size limit below 28", which has been the minimum size in the ocean since the stock was rebuilt. Targeting fish smaller than 28" could shift harvest away from both the 2015 and the 2018 year-classes and may be desirable by some stakeholders from a management perspective, but harvest of immature fish would increase, resulting in a loss of spawning potential for the stock. It is unclear whether the biological benefit of reducing harvest of the remaining 2015s and 2018s would outweigh the biological risk of targeting a higher percentage of immature fish. To calculate an estimated reduction for any size limit under 28" for the ocean, the TC-SAS explored a simulation analysis developed for other species (Appendix 2). Results indicate a 2-inch slot limit including sizes below 28" would not result in a reduction and would increase removals. This is logical considering smaller fish are more abundant so more fish could potentially be harvested at a lower size limit.

Table 4. Estimated reduction in total removals for various size limits in 2025 for the ocean and Chesapeake Bay.

Ocean		Chesapeake Bay	
Size Limit	**Estimated Reduction Relative to Current 28-31" Slot**	**Size Limit**	**Estimated Reduction Relative to Current 19-24" Slot**
28-30" slot limit	-5%	19-23" slot limit	-4%
32-35" slot limit	-2%	19-22" slot limit	-15%
33-36" slot limit	-4%	19-21" slot limit	-26%
35" minimum size	0%	20-25" slot limit	-2%
38" minimum size	-5%	20-24" slot limit	-8%
40" minimum size	-6%	20-23" slot limit	-13%

Recreational Seasonal Closures

Per Board Task 2, the TC-SAS calculated reductions for various recreational closure options (no-harvest closures and no-targeting closures). Tables 5-6 present recreational seasonal closure options that meet the maximum potential coastwide reduction scenario of 14%, with a range of recreational reductions from 14% (if the commercial sector takes an equal reduction) to 16% (if the commercial sector takes zero reduction). If the Board takes a smaller coastwide reduction overall, seasonal closures would be shorter than listed in Tables 5-6. This is not an exhaustive list of options; there are numerous combinations possible for different regions and Waves (Appendix 3). Tables 5-6 show a few options with the highest reduction per day (e.g., shortest possible closures) for each regional configuration for the maximum coastwide reduction scenario. **Note these new closures would be in addition to 2024 seasonal closures.**

Appendix 3 includes a longer list of options to meet a 14% recreational reduction and 8% recreational reduction for reference. If the Board chooses to take a 16% recreational reduction and 9% recreational reduction, respectively, with a corresponding 0% reduction in commercial quota, the closures will be slightly longer than those presented in Appendix 3.

For no-targeting closures, the TC considered two different assumptions for reductions in releases based on which types of trips would encounter striped bass. One set of assumptions, referred to as 'All Striped Bass Trips Occur With New Target Species', assumes that under a no-targeting closure, all trips that previously targeted striped bass would still occur but would shift to targeting other species where they release striped bass at a lower non-targeted rate. All striped bass releases from non-targeted trips would still occur. Trips targeting only striped bass are a large portion of total trips encountering striped bass (Figures 4-7). This set of assumptions assumes all of these trips would persist during a striped bass no-targeting closure but would switch to other species and still encounter striped bass incidentally.

The second set of assumptions considered for no-targeting closures, referred to as the 'Eliminate Striped Bass-Only Trips', was the same set of assumptions used by Maryland DNR in past analyses. This set of assumptions assumes that during a no-targeting closure, trips only targeting striped bass (i.e., no other species were targeted) would no longer release any striped

bass (i.e., the trip would not occur or trip would not encounter striped bass). Trips that targeted striped bass with a second species would still release striped bass but at a lower non-targeted rate. All striped bass releases from non-targeted trips (i.e., incidental catch) would still occur. In the case of Maryland's previous Chesapeake Bay seasonal closure analysis, this 'eliminate striped bass-only trips' seemed like a reasonable assumption given the dynamics of Chesapeake Bay fishing which are heavily focused on targeting striped bass (e.g., few alternative target species); this assumption was validated by realized reductions in Maryland that exceeded expected reductions. In the ocean, there are a wider variety of target species available to many ocean fisheries. However, across both the ocean and Chesapeake Bay, angler behavior remains difficult to predict.

The no-targeting scenarios resulted in shorter closures compared to the no-harvest scenario. This is because the no-harvest scenario assumes that all trips that release striped bass still occur, so the overall estimated reduction per day from a no-harvest scenario is less than the estimated reduction per day from the no-targeting scenarios where a reduction in releases is assumed to occur. The no-harvest scenario reductions may be closer to the no-targeting reductions if the no-harvest closure affects angler behavior in a way that reduces the number of trips that release striped bass or the number of striped bass releases per trip.

Combination Option

The Board requested calculation of an option combining a size limit change and a seasonal closure. Appendix 4 includes an example using the size limit options for the ocean and Bay that come closest to, but fall short of, achieving the 14% scenario. While a size limit change could be combined with a seasonal closure for a higher estimated cumulative reduction, the benefit of changing to a size limit with such a small estimated reduction may be limited, particularly in contrast to using a longer seasonal closure to achieve the same higher reduction. Additionally, as stated previously, there are potential biological risks and benefits to consider for size limit changes (e.g., a higher minimum size could result in some reduction and reduce pressure on the 2018 year class, but would shift harvest to the most fecund spawning fish).

Table 5. Seasonal closure options for the Ocean estimated to achieve a 14% reduction in recreational removals (corresponds to equal commercial reduction) and 16% reduction in recreational removals (corresponds to 0% commercial reduction). This is not an exhaustive list of options, only the top few options requiring the shortest closure duration for each regional configuration are shown. A more comprehensive list of different region and Wave combinations can be found in Appendix 3.

Ocean seasonal closures to achieve 14% recreational reduction (corresponding to equal commercial reduction)			
Region/Wave	**# days for 14% reduction with NO-TARGETING closure assuming Striped Bass-Only Trips Eliminated [reduction by region]**	**# days for 14% reduction with NO-TARGETING closure assuming All Striped Bass Trips Occur with New Target [reduction by region]**	**# days for 14% reduction with NO-HARVEST closure [reduction by region]**
All Ocean States Wave 6	29 days	36 days	Cannot achieve 14% reduction closing entire wave to harvest
ME-MA Wave 3; RI-NC Wave 6	25 days *[ME-MA -9%]* *[RI-NC -15%]*	34 days *[ME-MA -4%]* *[RI-NC -17%]*	55 days *[ME-MA -6%]* *[RI-NC -16%]*
ME-MA Wave 4; RI-NC Wave 6	23 days *[ME-MA -13%]* *[RI-NC -14%]*	31 days *[ME-MA -9%]* *[RI-NC -15%]*	47 days *[ME-MA -13%]* *[RI-NC -14%]*
ME-MA Wave 5; RI-NC Wave 6	25 days *[ME-MA -8%]* *[RI-NC -15%]*	32 days *[ME-MA -8%]* *[RI-NC -16%]*	54 days *[ME-MA -7%]* *[RI-NC -16%]*
ME-NH Wave 3; MA-NJ Wave 6; DE-NC Wave 6*	28 days *[ME-NH -9%]* *[MA-NJ -14%]* *[DE-NC -24%]*	36 days *[ME-NH -5%]* *[MA-NJ -14%]* *[DE-NC -25%]*	61 days *[ME-NH -3%]* *[MA-NJ -14%]* *[DE-NC -6%]*
ME-NH Wave 4; MA-NJ Wave 6; DE-NC Wave 6*	27 days *[ME-NH -18%]* *[MA-NJ -13%]* *[DE-NC -23%]*	34 days *[ME-NH -14%]* *[MA-NJ -13%]* *[DE-NC -24%]*	59 days *[ME-NH -8%]* *[MA-NJ -14%]* *[DE-NC -6%]*
ME-NH Wave 5; MA-NJ Wave 6; DE-NC Wave 6*	27 days *[ME-NH -12%]* *[MA-NJ -13%]* *[DE-NC -23%]*	35 days *[ME-NH -14%]* *[MA-NJ -14%]* *[DE-NC -25%]*	60 days *[ME-NH -6%]* *[MA-NJ -14%]* *[DE-NC -6%]*

Ocean seasonal closures to achieve 16% recreational reduction (corresponding to no commercial reduction)			
Region/Wave	**# days for 16% reduction with NO-TARGETING closure assuming Striped Bass-Only Trips Eliminated [reduction by region]**	**# days for 16% reduction with NO-TARGETING closure assuming All Striped Bass Trips Occur with New Target [reduction by region]**	**# days for 16% reduction with NO-HARVEST closure [reduction by region]**
All Ocean States Wave 6	33 days	41 days	Cannot achieve 16% reduction closing entire wave to harvest
ME-MA Wave 3; RI-NC Wave 6	28 days *[ME-MA -10%]* *[RI-NC -17%]*	39 days *[ME-MA -5%]* *[RI-NC -19%]*	Cannot achieve 16% reduction closing entire wave to harvest
ME-MA Wave 4; RI-NC Wave 6	26 days *[ME-MA -15%]* *[RI-NC -16%]*	36 days *[ME-MA -10%]* *[RI-NC -18%]*	54 days *[ME-MA -15%]* *[RI-NC -16%]*
ME-MA Wave 5; RI-NC Wave 6	29 days *[ME-MA -10%]* *[RI-NC -18%]*	36 days *[ME-MA -9%]* *[RI-NC -18%]*	Cannot achieve 16% reduction closing entire wave to harvest
ME-NH Wave 3; MA-NJ Wave 6; DE-NC Wave 6*	32 days *[ME-NH -10%]* *[MA-NJ -16%]* *[DE-NC -28%]*	41 days *[ME-NH -6%]* *[MA-NJ -16%]* *[DE-NC -29%]*	Cannot achieve 16% reduction closing entire wave to harvest
ME-NH Wave 4; MA-NJ Wave 6; DE-NC Wave 6*	31 days *[ME-NH -21%]* *[MA-NJ -15%]* *[DE-NC -27%]*	39 days *[ME-NH -16%]* *[MA-NJ -15%]* *[DE-NC -28%]*	Cannot achieve 16% reduction closing entire wave to harvest
ME-NH Wave 5; MA-NJ Wave 6; DE-NC Wave 6*	31 days *[ME-NH -14%]* *[MA-NJ -15%]* *[DE-NC -27%]*	40 days *[ME-NH -15%]* *[MA-NJ -16%]* *[DE-NC -28%]*	Cannot achieve 16% reduction closing entire wave to harvest

*Note: For the DE-NC region in the three-region configuration, DE-NC could choose Wave 2, 3, 4, or 5 instead of Wave 6 and this would result in either the same closure length or 1-2 additional days required for all regions.

Table 6. Seasonal closure options for the Chesapeake Bay estimated to achieve a 14% reduction in recreational removals (corresponds to equal commercial reduction) and 16% reduction in recreational removals (corresponds to 0% commercial reduction). This is not an exhaustive list of options, only the top few options requiring the shortest closure duration for each state configuration are shown. A more comprehensive list of different state and Wave combinations can be found in Appendix 3.

Note: PRFC and DC can each choose whether to implement their closure during the same wave as Maryland or the same Wave as Virginia.

Chesapeake Bay seasonal closures to achieve 14% recreational reduction (corresponding to equal commercial reduction)			
Chesapeake Bay State/Wave	**# days for 14% reduction with NO-TARGETING closure assuming Striped Bass-Only Trips Eliminated [reduction by state]**	**# days for 14% reduction with NO-TARGETING closure assuming All Striped Bass Trips Occur with New Target [reduction by state]**	**# days for 14% reduction with NO-HARVEST closure [reduction by state]**
MD and VA Wave 3	32 days *[MD -12%]* *[VA -28%]*	40 days *[MD -11%]* *[VA -33%]*	43 days *[MD -12%]* *[VA -32%]*
MD and VA Wave 5	32 days *[MD -14%]* *[VA -6%]*	35 days *[MD -14%]* *[VA -6%]*	46 days *[MD -14%]* *[VA -6%]*
MD Wave 4; VA Wave 3	31 days *[MD -12%]* *[VA -27%]*	34 days *[MD -12%]* *[VA -28%]*	39 days *[MD -12%]* *[VA -29%]*
MD Wave 4; VA Wave 6	31 days *[MD -12%]* *[VA -25%]*	36 days *[MD -13%]* *[VA -25%]*	42 days *[MD -13%]* *[VA -20%]*
MD Wave 5; VA Wave 3	28 days *[MD -13%]* *[VA -24%]*	30 days *[MD -12%]* *[VA -25%]*	38 days *[MD -12%]* *[VA -29%]*
MD Wave 5; VA Wave 6	28 days *[MD -13%]* *[VA -22%]*	31 days *[MD -13%]* *[VA -21%]*	41 days *[MD -13%]* *[VA -20%]*
MD Wave 6; VA Wave 3	32 days *[MD -12%]* *[VA -28%]*	34 days *[MD -12%]* *[VA -28%]*	46 days *[MD -11%]* *[VA -35%]*

Chesapeake Bay seasonal closures to achieve 16% recreational reduction (corresponding to no commercial reduction)			
Chesapeake Bay State/Wave	**# days for 16% reduction with NO-TARGETING closure assuming Striped Bass-Only Trips Eliminated [reduction by state]**	**# days for 16% reduction with NO-TARGETING closure assuming All Striped Bass Trips Occur with New Target [reduction by state]**	**# days for 16% reduction with NO-HARVEST closure [reduction by state]**
MD and VA Wave 3	37 days *[MD -14%] [VA -32%]*	46 days *[MD -13 %] [VA -38%]*	50 days *[MD -13%] [VA -38%]*
MD and VA Wave 5	37 days *[MD -16%] [VA -7%]*	40 days *[MD -16%] [VA -7%]*	53 days *[MD -17%] [VA -7%]*
MD Wave 4; VA Wave 3	35 days *[MD -14%] [VA -30%]*	39 days *[MD -14%] [VA -33%]*	45 days *[MD -14%] [VA -34%]*
MD Wave 4; VA Wave 6	36 days *[MD -14%] [VA -29%]*	41 days *[MD -14%] [VA -28%]*	48 days *[MD -15%] [VA -23%]*
MD Wave 5; VA Wave 3	32 days *[MD -14%] [VA -28%]*	35 days *[MD -14%] [VA -29%]*	44 days *[MD -14%] [VA -33%]*
MD Wave 5; VA Wave 6	32 days *[MD -14%] [VA -26%]*	36 days *[MD -15%] [VA -25%]*	47 days *[MD -15%] [VA -22%]*
MD Wave 6; VA Wave 3	37 days *[MD -14%] [VA -32%]*	39 days *[MD -14%] [VA -33%]*	53 days *[MD -13%] [VA -40%]*

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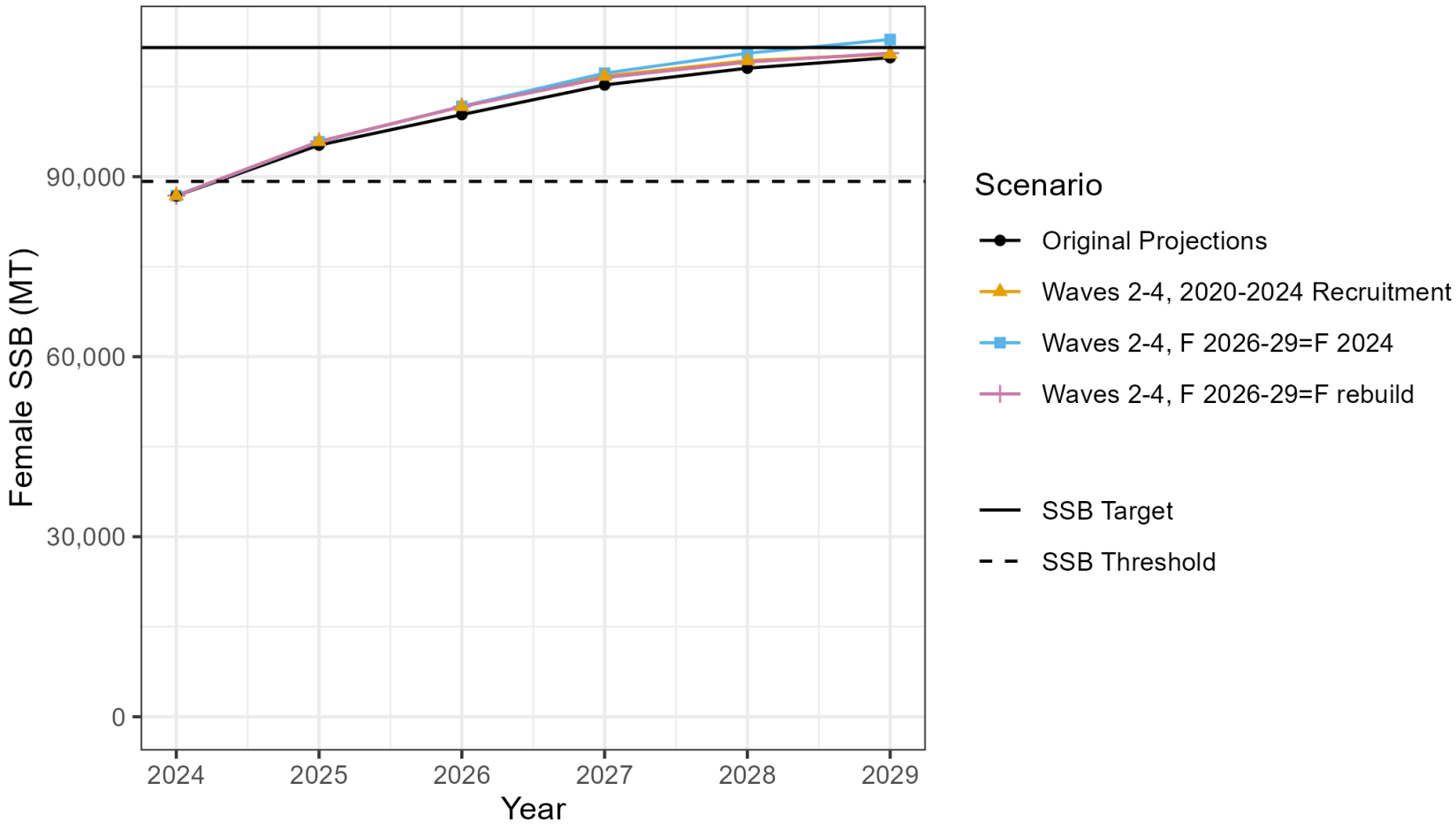


Figure 1. Rebuilding trajectories for female spawning stock biomass (SSB) under different projection scenarios.

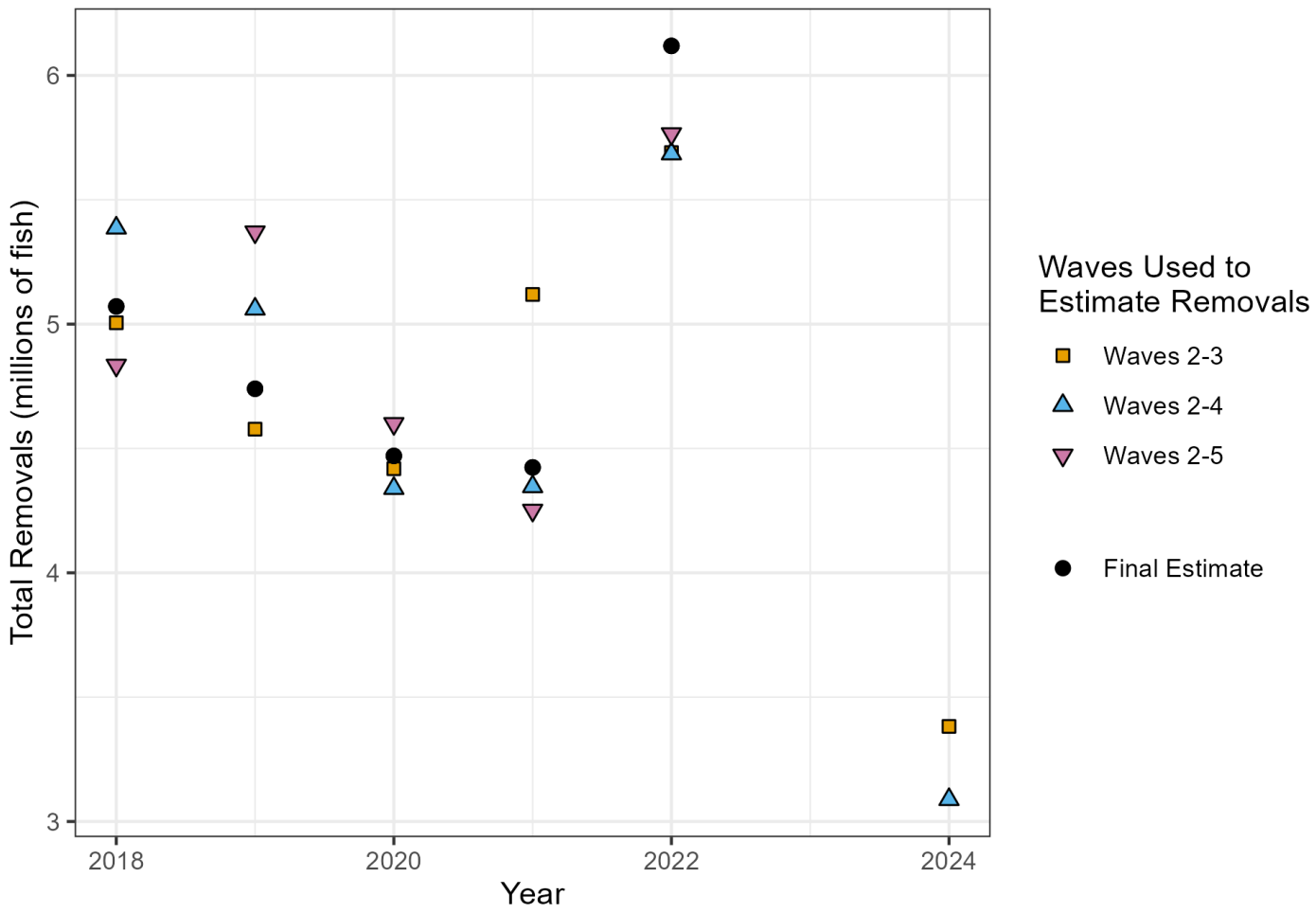
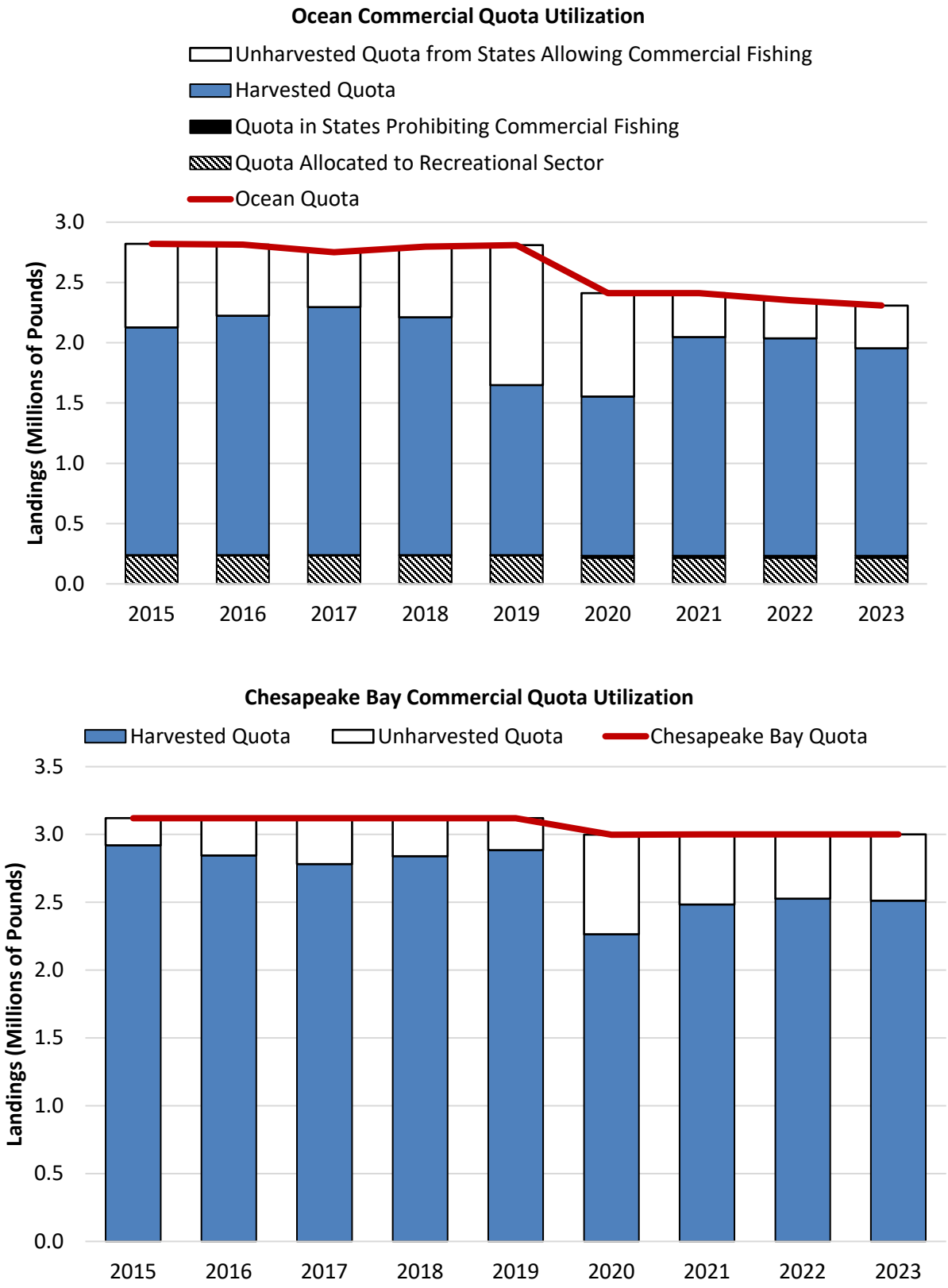


Figure 2. Estimated striped bass removals using different Waves of MRIP data compared to the final estimate of removals for 2018-2023. Note 2023 is not shown since it is not directly comparable to other years due to the mid-season management change (2023 emergency action), and was not used to calculate the predicted removals for other years.



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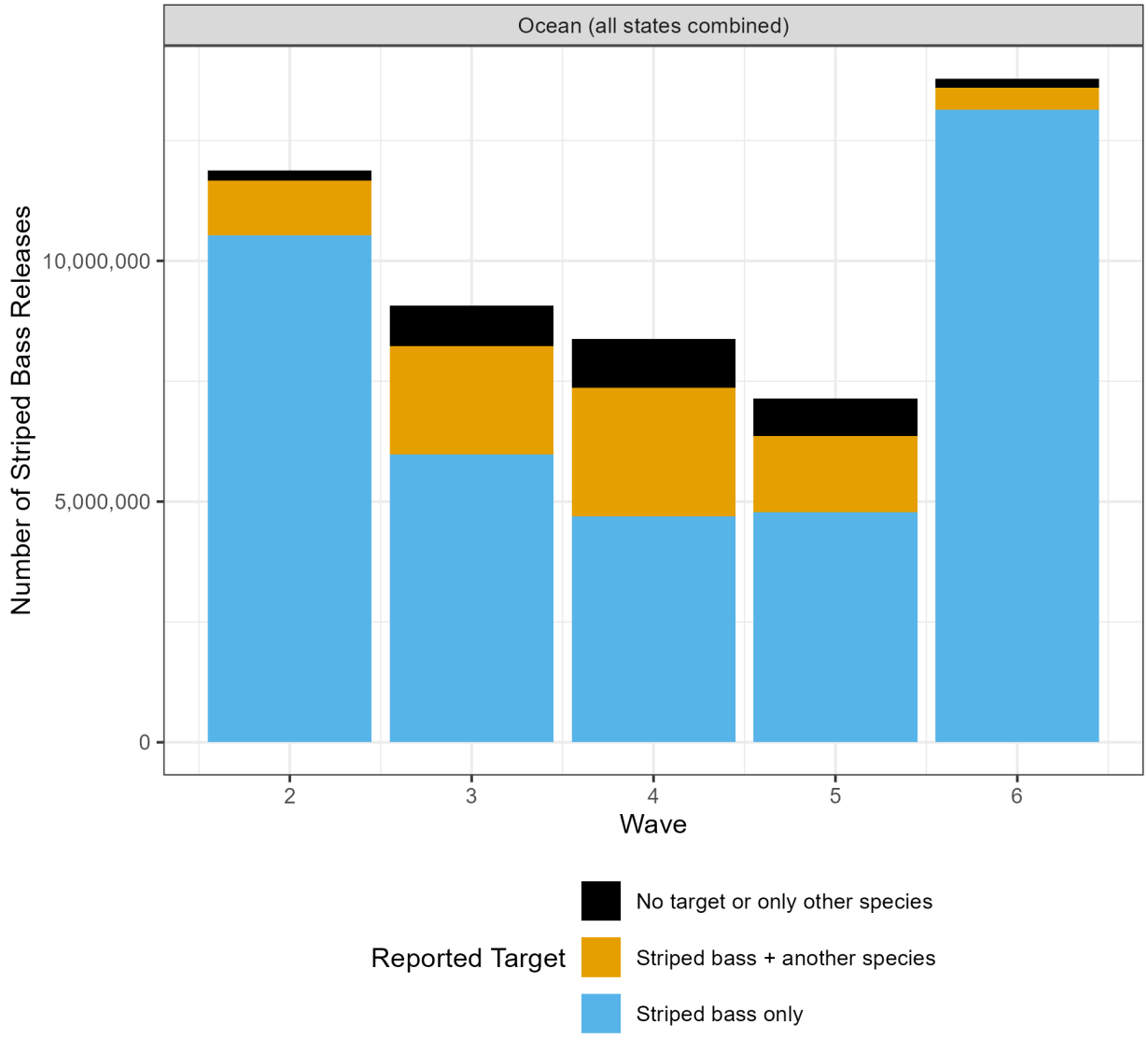

Figure 4. Ocean (all states combined) number of striped bass releases by trip type for 2021-2022. Data Source: MRIP.

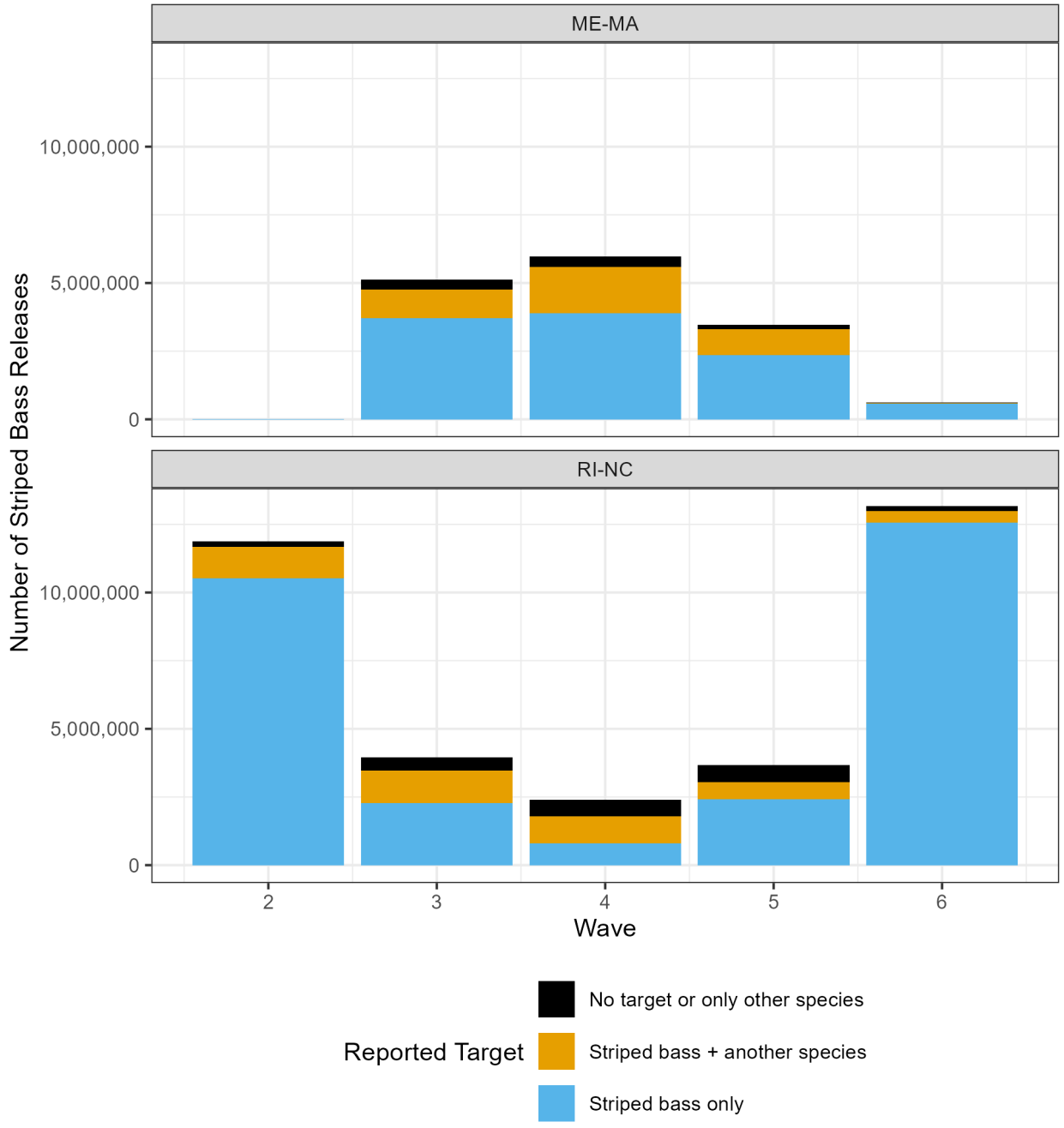

Figure 5. Ocean ME-MA and RI-NC regional number of striped bass releases by trip type for 2021-2022. Data Source: MRIP.

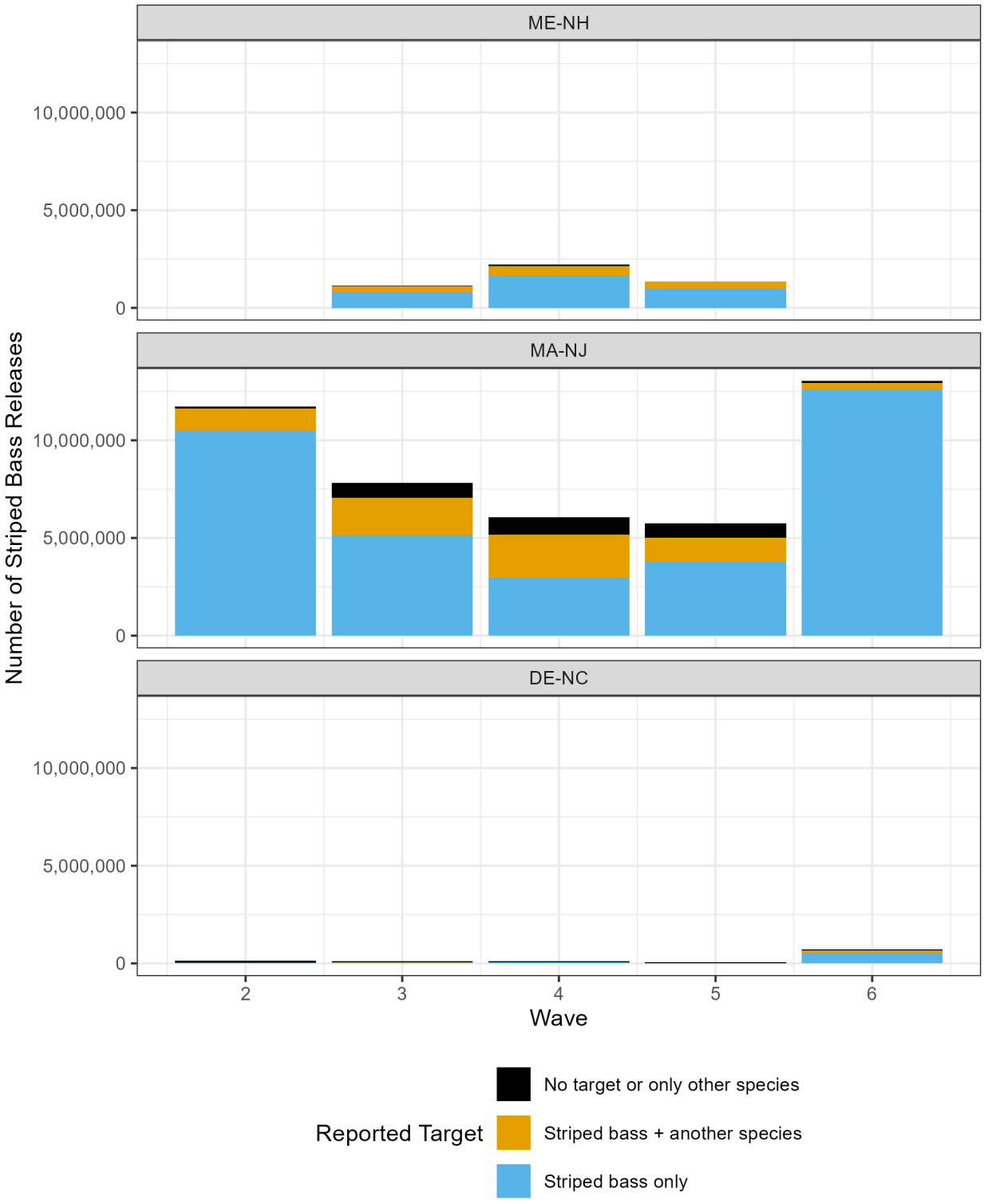

Figure 6. Ocean ME-NH, MA-NJ, and DE-NC regional number of striped bass releases by trip type for 2021-2022. Data Source: MRIP.

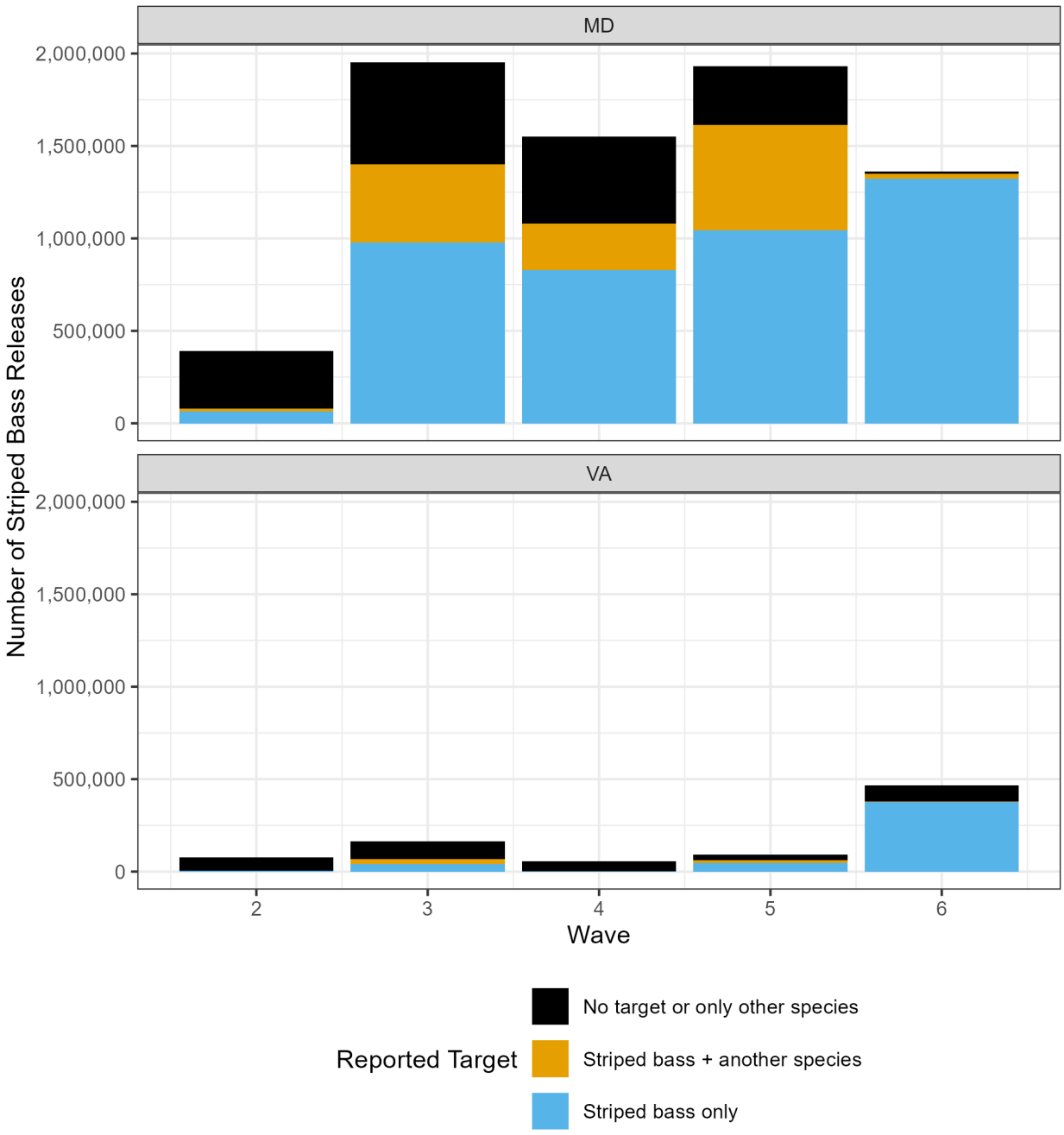

Figure 7. Chesapeake Bay (Maryland and Virginia) number of striped bass releases by trip type for 2021-2022. Data Source: MRIP.

Appendix 1. Methods for Developing Recreational Management Options

For size limit analysis, the TC-SAS used MRIP length frequency data from 2018 and 2011 for the ocean and Chesapeake Bay, respectively, to represent fish availability in 2025 when the above-average 2018 year-class will be age-7. 2018 data were used for the ocean since the 2011 year-class was age-7 that year. Additionally, there was no slot limit in place in 2018, so the length frequency data includes legal harvest of fish above 35", which allows for analysis of slot limits or minimum sizes higher than the current regulations. However, because catch of fish shorter than the minimum length in 2018 was not legal in most areas of the ocean fishery, the 2018 length frequency data does not provide the data necessary to analyze slot limits with a minimum lower than the current regulation. Therefore, no reductions for slots of smaller fish are presented for the ocean. 2011 data were used for the Chesapeake Bay since there was not a prominent, strong year class available in the Bay fishery at that time, which will be the case in 2025.

For seasonal closure analysis, 2021-2022 MRIP data were pooled to capture years under recent management measures, including the ocean slot limit and Chesapeake Bay closures implemented through Addendum VI. The 2021-2022 analysis years include a lower removals year (2021) and a higher removals year (2022).

Data were pooled by Wave for each region of interest in the ocean, and for Maryland and Virginia in the Chesapeake Bay. Waves 2-6 were analyzed since MRIP surveys are not administered during Wave 1 in any states north of North Carolina. For the ocean analysis, North Carolina MRIP data were not included. North Carolina only attributes Waves 1 and 6 ocean recreational catch to the ocean stock, and that catch has been minimal (zero recreational harvest for several years and 2021-2022 releases were 0.1% of total ocean releases).

For no-harvest closures, a constant daily harvest rate was calculated for each region of interest to determine the reduction in harvest, although the TC-SAS recognizes harvest is not likely to be constant especially between weekdays and weekends/holidays (i.e., weekends/holidays tend to have higher effort and catch). Fish no longer harvested were added to the number of live releases during the no-harvest closure. When calculating the daily harvest rate for the ocean region, harvest was assumed to occur during the entire Wave (e.g., 61 days during Wave 3). Most states in the ocean region are open year-round except for some spawning closures, and ocean waters closures in New York (closed until April 15 and closed after Dec 15) and Virginia ocean (closed April 1 through May 15). Since most ocean states are open year-round and the ocean closures would be at a regional level across multiple states, the analysis does not account for these few exceptions. For the Chesapeake Bay, the daily harvest rate does account for the very different seasons in Maryland and Virginia (e.g., during Wave 4 Maryland is open for harvest for 46 days and Virginia for 0 days).

For no-targeting closures, the constant daily harvest rate was used to determine the reduction in harvest. To determine the reduction in releases, the same set of assumptions used by MDDNR for their Addendum VI analysis was applied (Eliminate Striped Bass-Only Trips). To

address Board concern about shifting effort during no-targeting closures, particularly in the ocean, the reduction in releases was also calculated using a different set of assumptions for reference (referred to as All Striped Bass Trips Occur With New Target Species).

- Eliminate Striped Bass-Only Trips: Trips only targeting striped bass (e.g. no other species were targeted) were assumed to no longer release any striped bass. If striped bass were targeted with a second species, those trips would still release striped bass but at a lower non-targeted rate. All striped bass releases from non-targeted trips (i.e., incidental catch) would still occur.
- All Striped Bass Trips Occur With New Target Species (less optimistic): All trips targeting striped bass (even those targeting only striped bass) still occur and shift to targeting other species where they release striped bass at a lower non-targeted rate. All striped bass releases from non-targeted trips (i.e., incidental catch) would still occur.

These assumptions sort catch into three categories: 1) trips only targeting striped bass; 2) trips targeting striped bass and another species; 3) trips not targeting striped bass but still encountering/releasing striped bass. Figures 4-7 show the number of striped bass releases by trip type for each region of interest.

For seasonal closures, the TC-SAS recognizes Maryland and the Potomac River Fisheries Commission (PRFC) changed their recreational season in 2024 as compared to the reference years 2021-2022. Both Maryland and the PRFC eliminated their May 1-15 trophy season in 2024. Maryland changed those May 1-15 dates to a no-targeting closure, while the PRFC changed those dates to a no-harvest closure. This closure of the trophy season is incorporated through the use of the 2024 removals data, which are projected to be lower than 2021-2023, meaning a lower reduction is needed. The reductions being considered are based on changes from 2024 measures as the status quo, and represent the number of additional days needed to achieve the target percent reduction.

To combine reductions from multiple management changes (e.g., changing the size limit and season), the TC-SAS used the following equation A + B + (A*B) where A = -% reduction from changing the size limit and B = -% reduction from implementing a closure. This equation has been used to calculate cumulative reductions for striped bass in the past, as well as for other species.

Appendix 2. Simulation Analysis for Ocean Size Limits Less Than 28"

Prepared by Nicole Lengyel Costa (RIDEM), Striped Bass Technical Committee Member

Data Used: 2018 removals

For all slot limit analyses, 2018 removals data were used (Table 1) as a proxy for 2025 to reflect the availability of the strong 2018 year class that will be age 7 in 2025 just as the strong 2011 year class was age 7 in 2018 (Table 2). The 2018 removals data and quarter-inch bin harvest data were the same as those used in the other Ocean recreational fishery size limit options.

The Ocean recreational fishery has a current minimum size of 28" therefore release data were needed to inform the analysis on the availability of fish <28". MRIP Type 9 data for 2018 were very limited for most states and therefore not viable for this analysis (Table 3). Alternative datasets include the American Littoral Society (ALS) release data and release data supplied by the states in their annual compliance workbooks. Annual compliance workbook data was chosen to be the most reflective of each state's releases. State compliance workbook length frequency (LF) data was for dead releases with a 9% mortality rate applied to total releases. This LF data had to be expanded out to get the LF of all releases (Figure 1).

Table 1. 2018 Removals data for the Coastal recreational fishery.

	Year	Harvest (# of fish)	Releases (# of fish)	Total Removals
Observed under 28" min (Addendum IV)	2018	1,194,640	22,738,662	3,241,120
Predicted under 28-31" slot (Addendum II)	2018	1,118,197	22,745,332	3,165,277

Table 2. Mean striped bass total length at age.

Age	Estimated Mean Total Length (in)	
0	3.8	
1	6.4	
2	12.7	
3	17.0	
4	20.9	
5	**24.1**	
6	**26.4**	
7	28.7	← 2011 year class in 2018; 2018 year class in 2025
8	**31.6**	
9	33.8	
10	35.5	
11	37.2	
12	39.1	
13	41.0	
14	42.2	
15+	44.0	

Table 3. 2018 MRIP Type 9 data for all states in 2018.

State	Number of Fish
CT	17
MA	1
ME	3
NJ	58
NY	278
RI	6
Grand Total	363

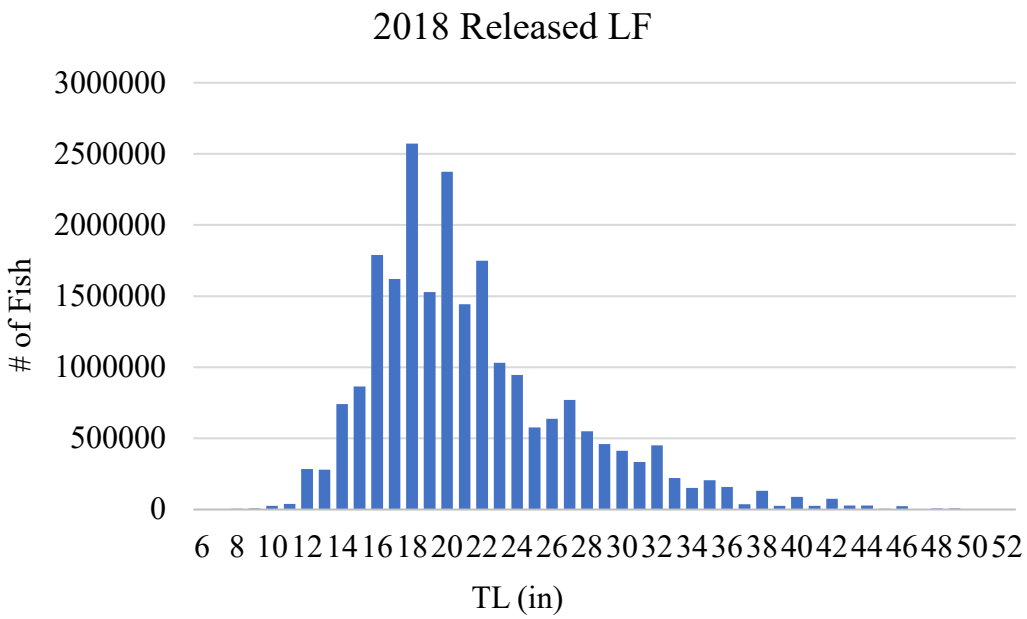

Figure 1. 2018 LF data for released fish compiled from annual state compliance workbooks.

Analysis: 27.0 – 29.0" (2" slot)

- Current Ocean slot: 28.0 – 31.0" (3" slot)
- This option shifts the slot down 1" and removes the upper 1" so a 3" slot becomes a 2" slot with a minimum of 27".
- *Simulation approach:*
    - Used G. Nelson's extintercepts.R code to get per trip per angler catch data (includes # harvested and released per angler for 2018)
        - All modes, all waves, all areas, all trips, all coastal states (ME, NH, MA, RI, CT, DE, NY, NJ), "common" = STRIPED BASS
        - Test to ensure all trips include:
            - ∑ (harvest.A.B1 * wp_int) = 1,194,640
            - Same # as cell J3 in OceanSizeLimits_ForTCSAS

- Probability that a harvested fish is a given length derived from proportion at length of all harvested fish
- Probability that a released fish is a given length derived from proportion at length of all released fish
- Run a loop that says harvest from 29-31" that will now become releases = dat$remove[i]<-sum(rbinom(n=dat$harvest.A.B1[i],size=1,prob=prob29_31))
- Remove those fish from the harvest and add to the releases
- Run a loop that says if harvest < 1, and releases > 0, new harvest = sum(rbinom(n=dat$release.B2[i],size=1,prob=prob27_28))
- Multiply new harvest by weights and sum to get expanded new harvest
- Run this 100x to get mean new harvest
- % change in removal calculations:
    a. **New harvest** = # of fish harvested up to 29" TL Bin + mean new harvest at 27" from simulation 2
    b. **New non-compliance harvest** = # of fish harvested from 29.25" up to 58.25" TL Bin * non-compliance rate (0.079)
    i. Non-compliance rate calculated from 2021-2022 data
    c. **New dead discards** = 0.09 * (# of fish harvested from 29.25" up to 58.25" TL) * (1- non-compliance rate (0.079))
    d. **Old dead releases** = (2018 B2 – mean new harvest at 27" from simulation 2) * 0.09
    e. **New removals** = Sum of above
    f. **Percent change** = (New removals – Add II predicted removals)/ Add II predicted removals
    g. **Increase of 6.43%**

24 – 26" slot:

- The methods outlined above were repeated for the 24-26" slot limit option and resulted in an increase in removals of 15.37% respectively.
- Given the mean total length at age in Table 2, this option would protect the majority of the 2018 year class but still results in an increase in removals.

Conclusions:

Methods used to analyze slot limits below the current 28" minimum size in the Ocean recreational fishery result in an increase in total removals. Had a reduction been estimated in any of these options, the next step in the analysis would have been to perform a spawning potential analysis to determine the loss of spawning potential from the proposed new slot option.

Appendix 3. Seasonal Closure Combinations

Appendix 3 Table 1. Ocean seasonal closure options to achieve a 14% recreational reduction. Slightly longer closures would be needed if the Board chose to take a 16% recreational reduction and a corresponding 0% commercial reduction. All Region/Wave combinations are shown except for combinations requiring more than a 45-day no-targeting closure under the 'striped bass-only trips eliminated' assumption.

Ocean seasonal closures to achieve 14% recreational reduction [Regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
All States	2	43	-14%	-12%	-5%
All States	2	49	-16%	-14%	-5%
All States	2	61^	-19%	-17%	-7%
All States	6	29	-14%	-11%	-6%
All States	6	36	-17%	-14%	-8%
All States	6	61^	-29%	-23%	-13%
			-14%	-11%	-7%
ME-MA	2	30	*[ME-MA: 0%]*	*[ME-MA: 0%]*	*[ME-MA: 0%]*
RI-NC	6	30	*[RI-NC: -19%]*	*[RI-NC: -15%]*	*[RI-NC: -9%]*
			-17%	-14%	-8%
ME-MA	2	37	*[ME-MA: 0%]*	*[ME-MA: 0%]*	*[ME-MA: 0%]*
RI-NC	6	37	*[RI-NC: -23%]*	*[RI-NC: -18%]*	*[RI-NC: -11%]*
			-28%	-23%	-13%
ME-MA	2	61^	*[ME-MA: 0%]*	*[ME-MA: 0%]*	*[ME-MA: 0%]*
RI-NC	6	61^	*[RI-NC: -38%]*	*[RI-NC: -30%]*	*[RI-NC: -18%]*
			-14%	-10%	-5%
ME-MA	3	33	*[ME-MA: -12%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	2	33	*[RI-NC: -14%]*	*[RI-NC: -12%]*	*[RI-NC: -5%]*
			-18%	-14%	-6%
ME-MA	3	44	*[ME-MA: -16%]*	*[ME-MA: -6%]*	*[ME-MA: -5%]*
RI-NC	2	44	*[RI-NC: -19%]*	*[RI-NC: -16%]*	*[RI-NC: -6%]*
			-25%	-19%	-8%
ME-MA	3	61^	*[ME-MA: -23%]*	*[ME-MA: -8%]*	*[ME-MA: -7%]*
RI-NC	2	61^	*[RI-NC: -26%]*	*[RI-NC: -22%]*	*[RI-NC: -9%]*
			-14%	-10%	-6%
ME-MA	3	25	*[ME-MA: -9%]*	*[ME-MA: -3%]*	*[ME-MA: -3%]*
RI-NC	6	25	*[RI-NC: -15%]*	*[RI-NC: -12%]*	*[RI-NC: -7%]*
			-19%	-14%	-8%
ME-MA	3	34	*[ME-MA: -13%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	6	34	*[RI-NC: -21%]*	*[RI-NC: -17%]*	*[RI-NC: -10%]*

Ocean seasonal closures to achieve 14% recreational reduction [Regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-31%	-22%	-14%
ME-MA	3	55	*[ME-MA: -20%]*	*[ME-MA: -7%]*	*[ME-MA: -6%]*
RI-NC	6	55	*[RI-NC: -34%]*	*[RI-NC: -27%]*	*[RI-NC: -16%]*
			-14%	-10%	-5%
ME-MA	4	30	*[ME-MA: -17%]*	*[ME-MA: -9%]*	*[ME-MA: -9%]*
RI-NC	2	30	*[RI-NC: -13%]*	*[RI-NC: -11%]*	*[RI-NC: -4%]*
			-18%	-14%	-7%
ME-MA	4	39	*[ME-MA: -22%]*	*[ME-MA: -11%]*	*[ME-MA: -11%]*
RI-NC	2	39	*[RI-NC: -17%]*	*[RI-NC: -14%]*	*[RI-NC: -6%]*
			-28%	-21%	-11%
ME-MA	4	61^	*[ME-MA: -34%]*	*[ME-MA: -17%]*	*[ME-MA: -17%]*
RI-NC	2	61^	*[RI-NC: -26%]*	*[RI-NC: -22%]*	*[RI-NC: -9%]*
			-14%	-10%	-7%
ME-MA	4	23	*[ME-MA: -13%]*	*[ME-MA: -7%]*	*[ME-MA: -7%]*
RI-NC	6	23	*[RI-NC: -14%]*	*[RI-NC: -11%]*	*[RI-NC: -7%]*
			-19%	-14%	-9%
ME-MA	4	31	*[ME-MA: -17%]*	*[ME-MA: -9%]*	*[ME-MA: -9%]*
RI-NC	6	31	*[RI-NC: -19%]*	*[RI-NC: -15%]*	*[RI-NC: -9%]*
			-28%	-21%	-14%
ME-MA	4	47	*[ME-MA: -26%]*	*[ME-MA: -13%]*	*[ME-MA: -13%]*
RI-NC	6	47	*[RI-NC: -29%]*	*[RI-NC: -23%]*	*[RI-NC: -14%]*
			-14%	-11%	-5%
ME-MA	5	34	*[ME-MA: -11%]*	*[ME-MA: -8%]*	*[ME-MA: -4%]*
RI-NC	2	34	*[RI-NC: -14%]*	*[RI-NC: -13%]*	*[RI-NC: -5%]*
			-16%	-14%	-6%
ME-MA	5	40	*[ME-MA: -14%]*	*[ME-MA: -10%]*	*[ME-MA: -5%]*
RI-NC	2	40	*[RI-NC: -17%]*	*[RI-NC: -15%]*	*[RI-NC: -6%]*
			-25%	-21%	-9%
ME-MA	5	61^	*[ME-MA: -21%]*	*[ME-MA: -15%]*	*[ME-MA: -8%]*
RI-NC	2	61^	*[RI-NC: -26%]*	*[RI-NC: -22%]*	*[RI-NC: -9%]*
			-14%	-11%	-6%
ME-MA	5	25	*[ME-MA: -8%]*	*[ME-MA: -6%]*	*[ME-MA: -3%]*
RI-NC	6	25	*[RI-NC: -15%]*	*[RI-NC: -12%]*	*[RI-NC: -7%]*
			-18%	-14%	-8%
ME-MA	5	32	*[ME-MA: -11%]*	*[ME-MA: -8%]*	*[ME-MA: -4%]*
RI-NC	6	32	*[RI-NC: -20%]*	*[RI-NC: -16%]*	*[RI-NC: -9%]*

Ocean seasonal closures to achieve 14% recreational reduction [Regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-30%	-23%	-14%
ME-MA	5	54	*[ME-MA: -18%]*	*[ME-MA: -13%]*	*[ME-MA: -7%]*
RI-NC	6	54	*[RI-NC: -33%]*	*[RI-NC: -27%]*	*[RI-NC: -16%]*
			-14%	-12%	-5%
ME-MA	6	42	*[ME-MA: -2%]*	*[ME-MA: -1%]*	*[ME-MA: 0%]*
RI-NC	2	42	*[RI-NC: -18%]*	*[RI-NC: -15%]*	*[RI-NC: -6%]*
			-16%	-14%	-5%
ME-MA	6	48	*[ME-MA: -2%]*	*[ME-MA: -2%]*	*[ME-MA: 0%]*
RI-NC	2	48	*[RI-NC: -20%]*	*[RI-NC: -18%]*	*[RI-NC: -7%]*
			-20%	-17%	-7%
ME-MA	6	61^	*[ME-MA: -2%]*	*[ME-MA: -2%]*	*[ME-MA: 0%]*
RI-NC	2	61^	*[RI-NC: -26%]*	*[RI-NC: -22%]*	*[RI-NC: -9%]*
			-14%	-12%	-5%
ME-NH	2	41	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	41	*[MA-NJ: -14%]*	*[MA-NJ: -13%]*	*[MA-NJ: -5%]*
DE-NC*	6	41	*[DE-NC: -36%]*	*[DE-NC: -29%]*	*[DE-NC: -4%]*
			-15%	-14%	-5%
ME-NH	2	45	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	45	*[MA-NJ: -16%]*	*[MA-NJ: -14%]*	*[MA-NJ: -5%]*
DE-NC*	6	45	*[DE-NC: -39%]*	*[DE-NC: -32%]*	*[DE-NC: -4%]*
			-20%	-18%	-7%
ME-NH	2	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-14%	-11%	-6%
ME-NH	2	29	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	29	*[MA-NJ: -14%]*	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*
DE-NC*	6	29	*[DE-NC: -25%]*	*[DE-NC: -20%]*	*[DE-NC: -3%]*
			-18%	-14%	-8%
ME-NH	2	37	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	37	*[MA-NJ: -18%]*	*[MA-NJ: -15%]*	*[MA-NJ: -9%]*
DE-NC*	6	37	*[DE-NC: -32%]*	*[DE-NC: -26%]*	*[DE-NC: -4%]*
			-29%	-23%	-13%
ME-NH	2	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	61^	*[MA-NJ: -30%]*	*[MA-NJ: -24%]*	*[MA-NJ: -14%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*

Ocean seasonal closures to achieve 14% recreational reduction [Regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-14%	-12%	-4%
ME-NH	3	39	*[ME-NH: -12%]*	*[ME-NH: -5%]*	*[ME-NH: -2%]*
MA-NJ	2	39	*[MA-NJ: -13%]*	*[MA-NJ: -12%]*	*[MA-NJ: -5%]*
DE-NC*	6	39	*[DE-NC: -34%]*	*[DE-NC: -28%]*	*[DE-NC: -4%]*
			-15%	-14%	-5%
ME-NH	3	44	*[ME-NH: -14%]*	*[ME-NH: -6%]*	*[ME-NH: -2%]*
MA-NJ	2	44	*[MA-NJ: -15%]*	*[MA-NJ: -14%]*	*[MA-NJ: -5%]*
DE-NC*	6	44	*[DE-NC: -38%]*	*[DE-NC: -31%]*	*[DE-NC: -4%]*
			-21%	-19%	-7%
ME-NH	3	61^	*[ME-NH: -19%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-14%	-11%	-6%
ME-NH	3	28	*[ME-NH: -9%]*	*[ME-NH: -4%]*	*[ME-NH: -1%]*
MA-NJ	6	28	*[MA-NJ: -14%]*	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*
DE-NC*	6	28	*[DE-NC: -24%]*	*[DE-NC: -20%]*	*[DE-NC: -3%]*
			-18%	-14%	-8%
ME-NH	3	36	*[ME-NH: -11%]*	*[ME-NH: -5%]*	*[ME-NH: -2%]*
MA-NJ	6	36	*[MA-NJ: -18%]*	*[MA-NJ: -14%]*	*[MA-NJ: -9%]*
DE-NC*	6	36	*[DE-NC: -31%]*	*[DE-NC: -25%]*	*[DE-NC: -3%]*
			-30%	-23%	-14%
ME-NH	3	61	*[ME-NH: -19%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	6	61	*[MA-NJ: -30%]*	*[MA-NJ: -24%]*	*[MA-NJ: -14%]*
DE-NC*	6	61	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-14%	-12%	-4%
ME-NH	4	37	*[ME-NH: -25%]*	*[ME-NH: -15%]*	*[ME-NH: -5%]*
MA-NJ	2	37	*[MA-NJ: -13%]*	*[MA-NJ: -12%]*	*[MA-NJ: -4%]*
DE-NC*	6	37	*[DE-NC: -32%]*	*[DE-NC: -26%]*	*[DE-NC: -4%]*
			-16%	-14%	-5%
ME-NH	4	42	*[ME-NH: -28%]*	*[ME-NH: -17%]*	*[ME-NH: -6%]*
MA-NJ	2	42	*[MA-NJ: -15%]*	*[MA-NJ: -13%]*	*[MA-NJ: -5%]*
DE-NC*	6	42	*[DE-NC: -36%]*	*[DE-NC: -30%]*	*[DE-NC: -4%]*
			-23%	-20%	-7%
ME-NH	4	61^	*[ME-NH: -41%]*	*[ME-NH: -25%]*	*[ME-NH: -9%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*

Ocean seasonal closures to achieve 14% recreational reduction [Regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-14%	-11%	-6%
ME-NH	4	27	*[ME-NH: -18%]*	*[ME-NH: -11%]*	*[ME-NH: -4%]*
MA-NJ	6	27	*[MA-NJ: -13%]*	*[MA-NJ: -11%]*	*[MA-NJ: -6%]*
DE-NC*	6	27	*[DE-NC: -23%]*	*[DE-NC: -19%]*	*[DE-NC: -3%]*
			-17%	-14%	-8%
ME-NH	4	34	*[ME-NH: -23%]*	*[ME-NH: -14%]*	*[ME-NH: -5%]*
MA-NJ	6	34	*[MA-NJ: -17%]*	*[MA-NJ: -13%]*	*[MA-NJ: -8%]*
DE-NC*	6	34	*[DE-NC: -29%]*	*[DE-NC: -24%]*	*[DE-NC: -3%]*
			-30%	-23%	-14%
ME-NH	4	59	*[ME-NH: -39%]*	*[ME-NH: -25%]*	*[ME-NH: -8%]*
MA-NJ	6	59	*[MA-NJ: -29%]*	*[MA-NJ: -23%]*	*[MA-NJ: -14%]*
DE-NC*	6	59	*[DE-NC: -51%]*	*[DE-NC: -42%]*	*[DE-NC: -6%]*
			-14%	-12%	-4%
ME-NH	5	38	*[ME-NH: -17%]*	*[ME-NH: -15%]*	*[ME-NH: -4%]*
MA-NJ	2	38	*[MA-NJ: -13%]*	*[MA-NJ: -12%]*	*[MA-NJ: -5%]*
DE-NC*	6	38	*[DE-NC: -33%]*	*[DE-NC: -27%]*	*[DE-NC: -4%]*
			-15%	-14%	-5%
ME-NH	5	42	*[ME-NH: -19%]*	*[ME-NH: -16%]*	*[ME-NH: -4%]*
MA-NJ	2	42	*[MA-NJ: -15%]*	*[MA-NJ: -13%]*	*[MA-NJ: -5%]*
DE-NC*	6	42	*[DE-NC: -36%]*	*[DE-NC: -30%]*	*[DE-NC: -4%]*
			-22%	-20%	-7%
ME-NH	5	61^	*[ME-NH: -28%]*	*[ME-NH: -24%]*	*[ME-NH: -6%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-14%	-11%	-6%
ME-NH	5	27	*[ME-NH: -12%]*	*[ME-NH: -10%]*	*[ME-NH: -3%]*
MA-NJ	6	27	*[MA-NJ: -13%]*	*[MA-NJ: -11%]*	*[MA-NJ: -6%]*
DE-NC*	6	27	*[DE-NC: -23%]*	*[DE-NC: -19%]*	*[DE-NC: -3%]*
			-18%	-14%	-8%
ME-NH	5	35	*[ME-NH: -16%]*	*[ME-NH: -14%]*	*[ME-NH: -3%]*
MA-NJ	6	35	*[MA-NJ: -17%]*	*[MA-NJ: -14%]*	*[MA-NJ: -8%]*
DE-NC*	6	35	*[DE-NC: -30%]*	*[DE-NC: -25%]*	*[DE-NC: -3%]*
			-30%	-24%	-14%
ME-NH	5	60	*[ME-NH: -27%]*	*[ME-NH: -23%]*	*[ME-NH: -6%]*
MA-NJ	6	60	*[MA-NJ: -30%]*	*[MA-NJ: -24%]*	*[MA-NJ: -14%]*
DE-NC*	6	60	*[DE-NC: -52%]*	*[DE-NC: -42%]*	*[DE-NC: -6%]*

Ocean seasonal closures to achieve 14% recreational reduction [Regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-14%	-12%	-5%
ME-NH	6	41	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	41	*[MA-NJ: -14%]*	*[MA-NJ: -13%]*	*[MA-NJ: -5%]*
DE-NC*	6	41	*[DE-NC: -36%]*	*[DE-NC: -29%]*	*[DE-NC: -4%]*
			-15%	-14%	-5%
ME-NH	6	45	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	45	*[MA-NJ: -16%]*	*[MA-NJ: -14%]*	*[MA-NJ: -5%]*
DE-NC*	6	45	*[DE-NC: -39%]*	*[DE-NC: -32%]*	*[DE-NC: -4%]*
			-20%	-18%	-7%
ME-NH	6	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-14%	-11%	-7%
ME-NH	6	30	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	30	*[MA-NJ: -15%]*	*[MA-NJ: -12%]*	*[MA-NJ: -7%]*
DE-NC**	4	30	*[DE-NC: -4%]*	*[DE-NC: -3%]*	*[DE-NC: -1%]*
			-18%	-14%	-8%
ME-NH	6	38	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	38	*[MA-NJ: -19%]*	*[MA-NJ: -15%]*	*[MA-NJ: -9%]*
DE-NC**	4	38	*[DE-NC: -5%]*	*[DE-NC: -4%]*	*[DE-NC: -2%]*
			-28%	-22%	-13%
ME-NH	6	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	61^	*[MA-NJ: -30%]*	*[MA-NJ: -24%]*	*[MA-NJ: -14%]*
DE-NC**	4	61^	*[DE-NC: -8%]*	*[DE-NC: -6%]*	*[DE-NC: -3%]*

* For the DE-NC region in the three-region configuration, DE-NC could choose Wave 2, 3, 4, or 5 instead of Wave 6 and this would result in either the same closure length or 1-2 additional days required for all regions. **For last option in table, DE-NC can choose Wave 2, 3, 4, or 5 for the same number of days.

^Option cannot achieve 14% reduction by closing the entire Wave.

Appendix 3 Table 2. Chesapeake Bay seasonal closure options to achieve a 14% recreational reduction. Slightly longer closures would be needed if the Board chose to take a 16% recreational reduction and a corresponding 0% commercial reduction. All Region/Wave combinations are shown except for combinations requiring more than a 45-day no-targeting closure under the 'striped bass-only trips eliminated' assumption, and excluding any combinations with Wave 2 (both MD and VA are closed to harvest and have few releases in Wave 2). Note: PRFC and DC can each choose whether to implement their closure during the same wave as Maryland or the same Wave as Virginia.

Chesapeake Bay seasonal closures to achieve 14% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-14%	-11%	-10%
MD	3	32	*[MD: -12%]*	*[MD: -9%]*	*[MD: -9%]*
VA	3	32	*[VA: -28%]*	*[VA: -27%]*	*[VA: -24%]*
			-17%	-14%	-13%
MD	3	40	*[MD: -15%]*	*[MD: -11%]*	*[MD: -11%]*
VA	3	40	*[VA: -34%]*	*[VA: -33%]*	*[VA: -30%]*
			-18%	-15%	-14%
MD	3	43	*[MD: -16%]*	*[MD: -12%]*	*[MD: -12%]*
VA	3	43	*[VA: -37%]*	*[VA: -36%]*	*[VA: -32%]*
			-14%	-12%	-11%
MD	4	38	*[MD: -15%]*	*[MD: -13%]*	*[MD: -12%]*
VA	4	38	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-16%	-14%	-12%
MD	4	43	*[MD: -17%]*	*[MD: -15%]*	*[MD: -13%]*
VA	4	43	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-18%	-16%	-14%
MD	4	49	*[MD: -20%]*	*[MD: -17%]*	*[MD: -15%]*
VA	4	49	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-14%	-12%	-10%
MD	5	32	*[MD: -14%]*	*[MD: -13%]*	*[MD: -10%]*
VA	5	32	*[VA: -6%]*	*[VA: -5%]*	*[VA: -4%]*
			-15%	-14%	-10%
MD	5	35	*[MD: -16%]*	*[MD: -14%]*	*[MD: -11%]*
VA	5	35	*[VA: -7%]*	*[VA: -6%]*	*[VA: -5%]*
			-20%	-18%	-14%
MD	5	46	*[MD: -21%]*	*[MD: -19%]*	*[MD: -14%]*
VA	5	46	*[VA: -9%]*	*[VA: -8%]*	*[VA: -6%]*
			-14%	-13%	-9%
MD	6	33	*[MD: -12%]*	*[MD: -12%]*	*[MD: -8%]*
VA	6	33	*[VA: -26%]*	*[VA: -23%]*	*[VA: -16%]*

Chesapeake Bay seasonal closures to achieve 14% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-15%	-14%	-9%
MD	6	35	*[MD: -13%]*	*[MD: -12%]*	*[MD: -9%]*
VA	6	35	*[VA: -28%]*	*[VA: -24%]*	*[VA: -17%]*
			-21%	-20%	-14%
MD	6	51	*[MD: -19%]*	*[MD: -18%]*	*[MD: -13%]*
VA	6	51	*[VA: -41%]*	*[VA: -35%]*	*[VA: -24%]*
			-14%	-10%	-10%
MD	3	40	*[MD: -15%]*	*[MD: -11%]*	*[MD: -11%]*
VA	4	40	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-18%	-14%	-13%
MD	3	53	*[MD: -20%]*	*[MD: -15%]*	*[MD: -14%]*
VA	4	53	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-19%	-14%	-14%
MD	3	56	*[MD: -21%]*	*[MD: -16%]*	*[MD: -15%]*
VA	4	56	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-14%	-10%	-10%
MD	3	38	*[MD: -14%]*	*[MD: -11%]*	*[MD: -10%]*
VA	5	38	*[VA: -7%]*	*[VA: -6%]*	*[VA: -5%]*
			-18%	-14%	-13%
MD	3	50	*[MD: -19%]*	*[MD: -14%]*	*[MD: -13%]*
VA	5	50	*[VA: -9%]*	*[VA: -8%]*	*[VA: -7%]*
			-19%	-15%	-14%
MD	3	53	*[MD: -20%]*	*[MD: -15%]*	*[MD: -14%]*
VA	5	53	*[VA: -10%]*	*[VA: -9%]*	*[VA: -7%]*
			-14%	-11%	-10%
MD	3	33	*[MD: -12%]*	*[MD: -9%]*	*[MD: -9%]*
VA	6	33	*[VA: -26%]*	*[VA: -23%]*	*[VA: -16%]*
			-17%	-14%	-12%
MD	3	42	*[MD: -16%]*	*[MD: -12%]*	*[MD: -11%]*
VA	6	42	*[VA: -34%]*	*[VA: -29%]*	*[VA: -20%]*
			-20%	-15%	-14%
MD	3	47	*[MD: -18%]*	*[MD: -13%]*	*[MD: -13%]*
VA	6	47	*[VA: -38%]*	*[VA: -32%]*	*[VA: -22%]*
			-14%	-12%	-11%
MD	4	31	*[MD: -12%]*	*[MD: -11%]*	*[MD: -10%]*
VA	3	31	*[VA: -27%]*	*[VA: -26%]*	*[VA: -23%]*

Chesapeake Bay seasonal closures to achieve 14% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-15%	-14%	-12%
MD	4	34	*[MD: -14%]*	*[MD: -12%]*	*[MD: -10%]*
VA	3	34	*[VA: -29%]*	*[VA: -28%]*	*[VA: -26%]*
			-17%	-16%	-14%
MD	4	39	*[MD: -16%]*	*[MD: -14%]*	*[MD: -12%]*
VA	3	39	*[VA: -34%]*	*[VA: -33%]*	*[VA: -29%]*
			-14%	-12%	-10%
MD	4	36	*[MD: -14%]*	*[MD: -13%]*	*[MD: -11%]*
VA	5	36	*[VA: -7%]*	*[VA: -6%]*	*[VA: -5%]*
			-16%	-14%	-12%
MD	4	41	*[MD: -16%]*	*[MD: -14%]*	*[MD: -13%]*
VA	5	41	*[VA: -8%]*	*[VA: -7%]*	*[VA: -6%]*
			-18%	-16%	-14%
MD	4	47	*[MD: -19%]*	*[MD: -17%]*	*[MD: -14%]*
VA	5	47	*[VA: -9%]*	*[VA: -8%]*	*[VA: -6%]*
			-14%	-12%	-10%
MD	4	31	*[MD: -12%]*	*[MD: -11%]*	*[MD: -10%]*
VA	6	31	*[VA: -25%]*	*[VA: -21%]*	*[VA: -15%]*
			-16%	-14%	-12%
MD	4	36	*[MD: -14%]*	*[MD: -13%]*	*[MD: -11%]*
VA	6	36	*[VA: -29%]*	*[VA: -25%]*	*[VA: -17%]*
			-19%	-16%	-14%
MD	4	42	*[MD: -17%]*	*[MD: -15%]*	*[MD: -13%]*
VA	6	42	*[VA: -34%]*	*[VA: -29%]*	*[VA: -20%]*
			-14%	-13%	-10%
MD	5	28	*[MD: -13%]*	*[MD: -12%]*	*[MD: -9%]*
VA	3	28	*[VA: -24%]*	*[VA: -23%]*	*[VA: -21%]*
			-15%	-14%	-11%
MD	5	30	*[MD: -14%]*	*[MD: -12%]*	*[MD: -9%]*
VA	3	30	*[VA: -26%]*	*[VA: -25%]*	*[VA: -23%]*
			-19%	-17%	-14%
MD	5	38	*[MD: -17%]*	*[MD: -16%]*	*[MD: -12%]*
VA	3	38	*[VA: -33%]*	*[VA: -32%]*	*[VA: -29%]*
			-14%	-13%	-10%
MD	5	34	*[MD: -15%]*	*[MD: -14%]*	*[MD: -11%]*
VA	4	34	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*

Chesapeake Bay seasonal closures to achieve 14% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
MD	5	37	-15% *[MD: -17%]*	-14% *[MD: -15%]*	-11% *[MD: -12%]*
VA	4	37	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
MD	5	48	-20% *[MD: -22%]*	-18% *[MD: -20%]*	-14% *[MD: -15%]*
VA	4	48	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
MD	5	28	-14% *[MD: -13%]*	-12% *[MD: -12%]*	-9% *[MD: -9%]*
VA	6	28	*[VA: -22%]*	*[VA: -19%]*	*[VA: -13%]*
MD	5	31	-15% *[MD: -14%]*	-14% *[MD: -13%]*	-10% *[MD: -10%]*
VA	6	31	*[VA: -25%]*	*[VA: -21%]*	*[VA: -15%]*
MD	5	41	-20% *[MD: -19%]*	-18% *[MD: -17%]*	-14% *[MD: -13%]*
VA	6	41	*[VA: -33%]*	*[VA: -28%]*	*[VA: -20%]*
MD	6	32	-14% *[MD: -12%]*	-13% *[MD: -11%]*	-9% *[MD: -8%]*
VA	3	32	*[VA: -28%]*	*[VA: -27%]*	*[VA: -24%]*
MD	6	34	-14% *[MD: -13%]*	-14% *[MD: -12%]*	-10% *[MD: -8%]*
VA	3	34	*[VA: -29%]*	*[VA: -28%]*	*[VA: -26%]*
MD	6	46	-19% *[MD: -17%]*	-19% *[MD: -16%]*	-14% *[MD: -11%]*
VA	3	46	*[VA: -40%]*	*[VA: -38%]*	*[VA: -35%]*
MD	6	40	-14% *[MD: -15%]*	-13% *[MD: -14%]*	-9% *[MD: -10%]*
VA	4	40	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
MD	6	42	-14% *[MD: -16%]*	-14% *[MD: -15%]*	-9% *[MD: -10%]*
VA	4	42	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
MD	6	61	-21% *[MD: -23%]*	-20% *[MD: -22%]*	-14% *[MD: -15%]*
VA	4	61	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
MD	6	38	-14% *[MD: -14%]*	-13% *[MD: -14%]*	-9% *[MD: -9%]*
VA	5	38	*[VA: -7%]*	*[VA: -6%]*	*[VA: -5%]*

Chesapeake Bay seasonal closures to achieve 14% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-14%	-14%	-9%
MD	6	40	*[MD: -15%]*	*[MD: -14%]*	*[MD: -10%]*
VA	5	40	*[VA: -8%]*	*[VA: -7%]*	*[VA: -5%]*
			-21%	-20%	-14%
MD	6	58	*[MD: -22%]*	*[MD: -21%]*	*[MD: -14%]*
VA	5	58	*[VA: -11%]*	*[VA: -10%]*	*[VA: -8%]*

Appendix 3 Table 3. Ocean seasonal closure options to achieve an 8% recreational reduction. Slightly longer closures would be needed if the Board chose to take a 9% recreational reduction and a corresponding 0% commercial reduction. All Region/Wave combinations are shown except for combinations requiring more than a 45-day no-targeting closure under the 'striped bass-only trips eliminated' assumption.

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
All States	2	24	-8%	-7%	-3%
All States	2	28	-9%	-8%	-3%
All States	2	61^	-19%	-17%	-7%
All States	3	31	-8%	-5%	-4%
All States	3	43	-11%	-8%	-6%
All States	3	58	-14%	-10%	-8%
All States	4	36	-8%	-5%	-4%
All States	4	56	-12%	-8%	-7%
All States	4	62^	-13%	-8%	-7%
All States	5	36	-8%	-5%	-4%
All States	5	51	-11%	-8%	-6%
All States	5	61^	-13%	-9%	-7%
All States	6	16	-8%	-6%	-4%
All States	6	20	-9%	-8%	-4%
All States	6	34	-16%	-13%	-8%

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-6%	-4%
ME-MA	2	17	*[ME-MA: 0%]*	*[ME-MA: 0%]*	*[ME-MA: 0%]*
RI-NC	6	17	*[RI-NC: -11%]*	*[RI-NC: -8%]*	*[RI-NC: -5%]*
			-10%	-8%	-5%
ME-MA	2	21	*[ME-MA: 0%]*	*[ME-MA: 0%]*	*[ME-MA: 0%]*
RI-NC	6	21	*[RI-NC: -13%]*	*[RI-NC: -10%]*	*[RI-NC: -6%]*
			-16%	-13%	-8%
ME-MA	2	34	*[ME-MA: 0%]*	*[ME-MA: 0%]*	*[ME-MA: 0%]*
RI-NC	6	34	*[RI-NC: -21%]*	*[RI-NC: -17%]*	*[RI-NC: -10%]*
			-8%	-6%	-3%
ME-MA	3	19	*[ME-MA: -7%]*	*[ME-MA: -2%]*	*[ME-MA: -2%]*
RI-NC	2	19	*[RI-NC: -8%]*	*[RI-NC: -7%]*	*[RI-NC: -3%]*
			-10%	-8%	-3%
ME-MA	3	25	*[ME-MA: -9%]*	*[ME-MA: -3%]*	*[ME-MA: -3%]*
RI-NC	2	25	*[RI-NC: -11%]*	*[RI-NC: -9%]*	*[RI-NC: -4%]*
			-23%	-17%	-8%
ME-MA	3	55	*[ME-MA: -20%]*	*[ME-MA: -7%]*	*[ME-MA: -6%]*
RI-NC	2	55	*[RI-NC: -23%]*	*[RI-NC: -20%]*	*[RI-NC: -8%]*
			-8%	-4%	-4%
ME-MA	3	35	*[ME-MA: -13%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	5	35	*[RI-NC: -6%]*	*[RI-NC: -4%]*	*[RI-NC: -4%]*
			-13%	-8%	-6%
ME-MA	3	60	*[ME-MA: -22%]*	*[ME-MA: -8%]*	*[ME-MA: -7%]*
RI-NC	5	60	*[RI-NC: -10%]*	*[RI-NC: -8%]*	*[RI-NC: -6%]*
			-13%	-8%	-7%
ME-MA	3	61^	*[ME-MA: -23%]*	*[ME-MA: -8%]*	*[ME-MA: -7%]*
RI-NC	5	61^	*[RI-NC: -10%]*	*[RI-NC: -8%]*	*[RI-NC: -6%]*
			-8%	-6%	-3%
ME-MA	3	14	*[ME-MA: -5%]*	*[ME-MA: -2%]*	*[ME-MA: -2%]*
RI-NC	6	14	*[RI-NC: -9%]*	*[RI-NC: -7%]*	*[RI-NC: -4%]*
			-11%	-8%	-5%
ME-MA	3	19	*[ME-MA: -7%]*	*[ME-MA: -2%]*	*[ME-MA: -2%]*
RI-NC	6	19	*[RI-NC: -12%]*	*[RI-NC: -9%]*	*[RI-NC: -6%]*
			-17%	-13%	-8%
ME-MA	3	31	*[ME-MA: -11%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	6	31	*[RI-NC: -19%]*	*[RI-NC: -15%]*	*[RI-NC: -9%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-6%	-3%
ME-MA	4	17	*[ME-MA: -10%]*	*[ME-MA: -5%]*	*[ME-MA: -5%]*
RI-NC	2	17	*[RI-NC: -7%]*	*[RI-NC: -6%]*	*[RI-NC: -3%]*
			-10%	-8%	-4%
ME-MA	4	22	*[ME-MA: -12%]*	*[ME-MA: -6%]*	*[ME-MA: -6%]*
RI-NC	2	22	*[RI-NC: -9%]*	*[RI-NC: -8%]*	*[RI-NC: -3%]*
			-19%	-15%	-8%
ME-MA	4	42	*[ME-MA: -24%]*	*[ME-MA: -12%]*	*[ME-MA: -12%]*
RI-NC	2	42	*[RI-NC: -18%]*	*[RI-NC: -15%]*	*[RI-NC: -6%]*
			-8%	-5%	-5%
ME-MA	4	26	*[ME-MA: -15%]*	*[ME-MA: -7%]*	*[ME-MA: -7%]*
RI-NC	3	26	*[RI-NC: -5%]*	*[RI-NC: -4%]*	*[RI-NC: -4%]*
			-11%	-8%	-7%
ME-MA	4	38	*[ME-MA: -21%]*	*[ME-MA: -11%]*	*[ME-MA: -11%]*
RI-NC	3	38	*[RI-NC: -8%]*	*[RI-NC: -6%]*	*[RI-NC: -5%]*
			-13%	-9%	-8%
ME-MA	4	44	*[ME-MA: -25%]*	*[ME-MA: -13%]*	*[ME-MA: -13%]*
RI-NC	3	44	*[RI-NC: -9%]*	*[RI-NC: -7%]*	*[RI-NC: -6%]*
			-8%	-5%	-4%
ME-MA	4	28	*[ME-MA: -16%]*	*[ME-MA: -8%]*	*[ME-MA: -8%]*
RI-NC	5	28	*[RI-NC: -5%]*	*[RI-NC: -4%]*	*[RI-NC: -3%]*
			-12%	-8%	-7%
ME-MA	4	46	*[ME-MA: -26%]*	*[ME-MA: -13%]*	*[ME-MA: -13%]*
RI-NC	5	46	*[RI-NC: -8%]*	*[RI-NC: -6%]*	*[RI-NC: -5%]*
			-14%	-8%	-8%
ME-MA	4	51	*[ME-MA: -29%]*	*[ME-MA: -15%]*	*[ME-MA: -14%]*
RI-NC	5	51	*[RI-NC: -9%]*	*[RI-NC: -6%]*	*[RI-NC: -5%]*
			-8%	-6%	-4%
ME-MA	4	13	*[ME-MA: -7%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	6	13	*[RI-NC: -8%]*	*[RI-NC: -6%]*	*[RI-NC: -4%]*
			-10%	-8%	-5%
ME-MA	4	17	*[ME-MA: -10%]*	*[ME-MA: -5%]*	*[ME-MA: -5%]*
RI-NC	6	17	*[RI-NC: -11%]*	*[RI-NC: -8%]*	*[RI-NC: -5%]*
			-16%	-12%	-8%
ME-MA	4	26	*[ME-MA: -15%]*	*[ME-MA: -7%]*	*[ME-MA: -7%]*
RI-NC	6	26	*[RI-NC: -16%]*	*[RI-NC: -13%]*	*[RI-NC: -8%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-6%	-3%
ME-MA	5	19	*[ME-MA: -6%]*	*[ME-MA: -5%]*	*[ME-MA: -2%]*
RI-NC	2	19	*[RI-NC: -8%]*	*[RI-NC: -7%]*	*[RI-NC: -3%]*
			-9%	-8%	-3%
ME-MA	5	23	*[ME-MA: -8%]*	*[ME-MA: -6%]*	*[ME-MA: -3%]*
RI-NC	2	23	*[RI-NC: -10%]*	*[RI-NC: -8%]*	*[RI-NC: -3%]*
			-21%	-18%	-8%
ME-MA	5	53	*[ME-MA: -18%]*	*[ME-MA: -13%]*	*[ME-MA: -7%]*
RI-NC	2	53	*[RI-NC: -22%]*	*[RI-NC: -20%]*	*[RI-NC: -8%]*
			-8%	-6%	-4%
ME-MA	5	32	*[ME-MA: -11%]*	*[ME-MA: -8%]*	*[ME-MA: -4%]*
RI-NC	3	32	*[RI-NC: -7%]*	*[RI-NC: -5%]*	*[RI-NC: -4%]*
			-10%	-8%	-5%
ME-MA	5	40	*[ME-MA: -14%]*	*[ME-MA: -10%]*	*[ME-MA: -5%]*
RI-NC	3	40	*[RI-NC: -8%]*	*[RI-NC: -7%]*	*[RI-NC: -6%]*
			-13%	-11%	-8%
ME-MA	5	56	*[ME-MA: -19%]*	*[ME-MA: -14%]*	*[ME-MA: -7%]*
RI-NC	3	56	*[RI-NC: -12%]*	*[RI-NC: -9%]*	*[RI-NC: -8%]*
			-8%	-6%	-4%
ME-MA	5	14	*[ME-MA: -5%]*	*[ME-MA: -3%]*	*[ME-MA: -2%]*
RI-NC	6	14	*[RI-NC: -9%]*	*[RI-NC: -7%]*	*[RI-NC: -4%]*
			-10%	-8%	-5%
ME-MA	5	18	*[ME-MA: -6%]*	*[ME-MA: -4%]*	*[ME-MA: -2%]*
RI-NC	6	18	*[RI-NC: -11%]*	*[RI-NC: -9%]*	*[RI-NC: -5%]*
			-16%	-13%	-8%
ME-MA	5	30	*[ME-MA: -10%]*	*[ME-MA: -7%]*	*[ME-MA: -4%]*
RI-NC	6	30	*[RI-NC: -19%]*	*[RI-NC: -15%]*	*[RI-NC: -9%]*
			-8%	-7%	-3%
ME-MA	6	23	*[ME-MA: -1%]*	*[ME-MA: -1%]*	*[ME-MA: 0%]*
RI-NC	2	23	*[RI-NC: -10%]*	*[RI-NC: -8%]*	*[RI-NC: -3%]*
			-9%	-8%	-3%
ME-MA	6	27	*[ME-MA: -1%]*	*[ME-MA: -1%]*	*[ME-MA: 0%]*
RI-NC	2	27	*[RI-NC: -11%]*	*[RI-NC: -10%]*	*[RI-NC: -4%]*
			-20%	-17%	-7%
ME-MA	6	61^	*[ME-MA: -2%]*	*[ME-MA: -2%]*	*[ME-MA: 0%]*
RI-NC	2	61^	*[RI-NC: -26%]*	*[RI-NC: -22%]*	*[RI-NC: -9%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-7%	-3%
ME-NH	2	23	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	23	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -3%]*
DE-NC*	6	23	*[DE-NC: -20%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-8%	-8%	-3%
ME-NH	2	25	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	25	*[MA-NJ: -9%]*	*[MA-NJ: -8%]*	*[MA-NJ: -3%]*
DE-NC*	6	25	*[DE-NC: -22%]*	*[DE-NC: -18%]*	*[DE-NC: -2%]*
			-20%	-18%	-7%
ME-NH	2	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	2	31	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	3	31	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*
DE-NC*	6	31	*[DE-NC: -27%]*	*[DE-NC: -22%]*	*[DE-NC: -3%]*
			-10%	-8%	-5%
ME-NH	2	42	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	3	42	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*
DE-NC*	6	42	*[DE-NC: -36%]*	*[DE-NC: -30%]*	*[DE-NC: -4%]*
			-14%	-10%	-8%
ME-NH	2	58	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	3	58	*[MA-NJ: -14%]*	*[MA-NJ: -11%]*	*[MA-NJ: -8%]*
DE-NC*	6	58	*[DE-NC: -50%]*	*[DE-NC: -41%]*	*[DE-NC: -6%]*
			-8%	-5%	-5%
ME-NH	2	42	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	4	42	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*	*[MA-NJ: -5%]*
DE-NC*	6	42	*[DE-NC: -36%]*	*[DE-NC: -30%]*	*[DE-NC: -4%]*
			-11%	-7%	-7%
ME-NH	2	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	4	61^	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-5%	-4%
ME-NH	2	39	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	5	39	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	39	*[DE-NC: -34%]*	*[DE-NC: -28%]*	*[DE-NC: -4%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-11%	-8%	-6%
ME-NH	2	55	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	5	55	*[MA-NJ: -11%]*	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*
DE-NC*	6	55	*[DE-NC: -48%]*	*[DE-NC: -39%]*	*[DE-NC: -5%]*
			-12%	-8%	-6%
ME-NH	2	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	5	61^	*[MA-NJ: -12%]*	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	2	16	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	16	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*
DE-NC*	6	16	*[DE-NC: -14%]*	*[DE-NC: -11%]*	*[DE-NC: -2%]*
			-10%	-8%	-5%
ME-NH	2	21	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	21	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*
DE-NC*	6	21	*[DE-NC: -18%]*	*[DE-NC: -15%]*	*[DE-NC: -2%]*
			-16%	-13%	-8%
ME-NH	2	34	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	34	*[MA-NJ: -17%]*	*[MA-NJ: -13%]*	*[MA-NJ: -8%]*
DE-NC*	6	34	*[DE-NC: -29%]*	*[DE-NC: -24%]*	*[DE-NC: -3%]*
			-8%	-7%	-3%
ME-NH	3	22	*[ME-NH: -7%]*	*[ME-NH: -3%]*	*[ME-NH: -1%]*
MA-NJ	2	22	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -3%]*
DE-NC*	6	22	*[DE-NC: -19%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-9%	-8%	-3%
ME-NH	3	25	*[ME-NH: -8%]*	*[ME-NH: -3%]*	*[ME-NH: -1%]*
MA-NJ	2	25	*[MA-NJ: -9%]*	*[MA-NJ: -8%]*	*[MA-NJ: -3%]*
DE-NC*	6	25	*[DE-NC: -22%]*	*[DE-NC: -18%]*	*[DE-NC: -2%]*
			-21%	-19%	-7%
ME-NH	3	61^	*[ME-NH: -19%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-5%	-4%
ME-NH	3	29	*[ME-NH: -9%]*	*[ME-NH: -4%]*	*[ME-NH: -1%]*
MA-NJ	3	29	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	29	*[DE-NC: -25%]*	*[DE-NC: -20%]*	*[DE-NC: -3%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-11%	-8%	-5%
ME-NH	3	41	*[ME-NH: -13%]*	*[ME-NH: -6%]*	*[ME-NH: -2%]*
MA-NJ	3	41	*[MA-NJ: -10%]*	*[MA-NJ: -7%]*	*[MA-NJ: -6%]*
DE-NC*	6	41	*[DE-NC: -36%]*	*[DE-NC: -29%]*	*[DE-NC: -4%]*
			-15%	-11%	-8%
ME-NH	3	57	*[ME-NH: -18%]*	*[ME-NH: -8%]*	*[ME-NH: -2%]*
MA-NJ	3	57	*[MA-NJ: -14%]*	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*
DE-NC*	6	57	*[DE-NC: -49%]*	*[DE-NC: -40%]*	*[DE-NC: -5%]*
			-8%	-5%	-4%
ME-NH	3	38	*[ME-NH: -12%]*	*[ME-NH: -5%]*	*[ME-NH: -2%]*
MA-NJ	4	38	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*	*[MA-NJ: -5%]*
DE-NC*	6	38	*[DE-NC: -33%]*	*[DE-NC: -27%]*	*[DE-NC: -4%]*
			-12%	-8%	-7%
ME-NH	3	58	*[ME-NH: -18%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	4	58	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*
DE-NC*	6	58	*[DE-NC: -50%]*	*[DE-NC: -41%]*	*[DE-NC: -6%]*
			-12%	-8%	-7%
ME-NH	3	61^	*[ME-NH: -19%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	4	61^	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-5%	-4%
ME-NH	3	35	*[ME-NH: -11%]*	*[ME-NH: -5%]*	*[ME-NH: -2%]*
MA-NJ	5	35	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	35	*[DE-NC: -30%]*	*[DE-NC: -25%]*	*[DE-NC: -3%]*
			-11%	-8%	-6%
ME-NH	3	52	*[ME-NH: -16%]*	*[ME-NH: -7%]*	*[ME-NH: -2%]*
MA-NJ	5	52	*[MA-NJ: -10%]*	*[MA-NJ: -7%]*	*[MA-NJ: -6%]*
DE-NC*	6	52	*[DE-NC: -45%]*	*[DE-NC: -37%]*	*[DE-NC: -5%]*
			-13%	-9%	-7%
ME-NH	3	61^	*[ME-NH: -19%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	5	61^	*[MA-NJ: -12%]*	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	3	16	*[ME-NH: -5%]*	*[ME-NH: -2%]*	*[ME-NH: -1%]*
MA-NJ	6	16	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*
DE-NC*	6	16	*[DE-NC: -14%]*	*[DE-NC: -11%]*	*[DE-NC: -2%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-10%	-8%	-4%
ME-NH	3	20	*[ME-NH: -6%]*	*[ME-NH: -3%]*	*[ME-NH: -1%]*
MA-NJ	6	20	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*
DE-NC*	6	20	*[DE-NC: -17%]*	*[DE-NC: -14%]*	*[DE-NC: -2%]*
			-17%	-13%	-8%
ME-NH	3	34	*[ME-NH: -11%]*	*[ME-NH: -5%]*	*[ME-NH: -1%]*
MA-NJ	6	34	*[MA-NJ: -17%]*	*[MA-NJ: -13%]*	*[MA-NJ: -8%]*
DE-NC*	6	34	*[DE-NC: -29%]*	*[DE-NC: -24%]*	*[DE-NC: -3%]*
			-8%	-7%	-3%
ME-NH	4	21	*[ME-NH: -14%]*	*[ME-NH: -9%]*	*[ME-NH: -3%]*
MA-NJ	2	21	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*	*[MA-NJ: -2%]*
DE-NC*	6	21	*[DE-NC: -18%]*	*[DE-NC: -15%]*	*[DE-NC: -2%]*
			-9%	-8%	-3%
ME-NH	4	23	*[ME-NH: -15%]*	*[ME-NH: -10%]*	*[ME-NH: -3%]*
MA-NJ	2	23	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -3%]*
DE-NC*	6	23	*[DE-NC: -20%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-23%	-20%	-7%
ME-NH	4	61^	*[ME-NH: -41%]*	*[ME-NH: -25%]*	*[ME-NH: -9%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	4	27	*[ME-NH: -18%]*	*[ME-NH: -11%]*	*[ME-NH: -4%]*
MA-NJ	3	27	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	27	*[DE-NC: -23%]*	*[DE-NC: -19%]*	*[DE-NC: -3%]*
			-10%	-8%	-5%
ME-NH	4	37	*[ME-NH: -25%]*	*[ME-NH: -15%]*	*[ME-NH: -5%]*
MA-NJ	3	37	*[MA-NJ: -9%]*	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*
DE-NC*	6	37	*[DE-NC: -32%]*	*[DE-NC: -26%]*	*[DE-NC: -4%]*
			-16%	-11%	-8%
ME-NH	4	55	*[ME-NH: -37%]*	*[ME-NH: -23%]*	*[ME-NH: -8%]*
MA-NJ	3	55	*[MA-NJ: -14%]*	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*
DE-NC*	6	55	*[DE-NC: -48%]*	*[DE-NC: -39%]*	*[DE-NC: -5%]*
			-8%	-5%	-4%
ME-NH	4	34	*[ME-NH: -23%]*	*[ME-NH: -14%]*	*[ME-NH: -5%]*
MA-NJ	4	34	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*	*[MA-NJ: -4%]*
DE-NC*	6	34	*[DE-NC: -29%]*	*[DE-NC: -24%]*	*[DE-NC: -3%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-11%	-8%	-6%
ME-NH	4	51	*[ME-NH: -34%]*	*[ME-NH: -21%]*	*[ME-NH: -7%]*
MA-NJ	4	51	*[MA-NJ: -9%]*	*[MA-NJ: -6%]*	*[MA-NJ: -6%]*
DE-NC*	6	51	*[DE-NC: -44%]*	*[DE-NC: -36%]*	*[DE-NC: -5%]*
			-14%	-9%	-7%
ME-NH	4	61^	*[ME-NH: -41%]*	*[ME-NH: -25%]*	*[ME-NH: -9%]*
MA-NJ	4	61^	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-5%	-4%
ME-NH	4	32	*[ME-NH: -21%]*	*[ME-NH: -13%]*	*[ME-NH: -4%]*
MA-NJ	5	32	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*	*[MA-NJ: -4%]*
DE-NC*	6	32	*[DE-NC: -28%]*	*[DE-NC: -23%]*	*[DE-NC: -3%]*
			-11%	-8%	-5%
ME-NH	4	46	*[ME-NH: -31%]*	*[ME-NH: -19%]*	*[ME-NH: -6%]*
MA-NJ	5	46	*[MA-NJ: -9%]*	*[MA-NJ: -6%]*	*[MA-NJ: -5%]*
DE-NC*	6	46	*[DE-NC: -40%]*	*[DE-NC: -33%]*	*[DE-NC: -4%]*
			-14%	-10%	-7%
ME-NH	4	61^	*[ME-NH: -41%]*	*[ME-NH: -25%]*	*[ME-NH: -9%]*
MA-NJ	5	61^	*[MA-NJ: -12%]*	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-3%
ME-NH	4	15	*[ME-NH: -10%]*	*[ME-NH: -6%]*	*[ME-NH: -2%]*
MA-NJ	6	15	*[MA-NJ: -7%]*	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*
DE-NC*	6	15	*[DE-NC: -13%]*	*[DE-NC: -11%]*	*[DE-NC: -1%]*
			-10%	-8%	-4%
ME-NH	4	19	*[ME-NH: -13%]*	*[ME-NH: -8%]*	*[ME-NH: -3%]*
MA-NJ	6	19	*[MA-NJ: -9%]*	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*
DE-NC*	6	19	*[DE-NC: -16%]*	*[DE-NC: -13%]*	*[DE-NC: -2%]*
			-17%	-13%	-8%
ME-NH	4	33	*[ME-NH: -22%]*	*[ME-NH: -14%]*	*[ME-NH: -5%]*
MA-NJ	6	33	*[MA-NJ: -16%]*	*[MA-NJ: -13%]*	*[MA-NJ: -8%]*
DE-NC*	6	33	*[DE-NC: -29%]*	*[DE-NC: -23%]*	*[DE-NC: -3%]*
			-8%	-7%	-2%
ME-NH	5	21	*[ME-NH: -10%]*	*[ME-NH: -8%]*	*[ME-NH: -2%]*
MA-NJ	2	21	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*	*[MA-NJ: -2%]*
DE-NC*	6	21	*[DE-NC: -18%]*	*[DE-NC: -15%]*	*[DE-NC: -2%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-8%	-3%
ME-NH	5	23	*[ME-NH: -10%]*	*[ME-NH: -9%]*	*[ME-NH: -2%]*
MA-NJ	2	23	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -3%]*
DE-NC*	6	23	*[DE-NC: -20%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-22%	-20%	-7%
ME-NH	5	61^	*[ME-NH: -28%]*	*[ME-NH: -24%]*	*[ME-NH: -6%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	5	28	*[ME-NH: -13%]*	*[ME-NH: -11%]*	*[ME-NH: -3%]*
MA-NJ	3	28	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	28	*[DE-NC: -24%]*	*[DE-NC: -20%]*	*[DE-NC: -3%]*
			-10%	-8%	-5%
ME-NH	5	37	*[ME-NH: -17%]*	*[ME-NH: -14%]*	*[ME-NH: -3%]*
MA-NJ	3	37	*[MA-NJ: -9%]*	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*
DE-NC*	6	37	*[DE-NC: -32%]*	*[DE-NC: -26%]*	*[DE-NC: -4%]*
			-15%	-11%	-8%
ME-NH	5	56	*[ME-NH: -26%]*	*[ME-NH: -22%]*	*[ME-NH: -5%]*
MA-NJ	3	56	*[MA-NJ: -14%]*	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*
DE-NC*	6	56	*[DE-NC: -49%]*	*[DE-NC: -40%]*	*[DE-NC: -5%]*
			-8%	-5%	-4%
ME-NH	5	36	*[ME-NH: -16%]*	*[ME-NH: -14%]*	*[ME-NH: -3%]*
MA-NJ	4	36	*[MA-NJ: -7%]*	*[MA-NJ: -4%]*	*[MA-NJ: -4%]*
DE-NC*	6	36	*[DE-NC: -31%]*	*[DE-NC: -25%]*	*[DE-NC: -3%]*
			-11%	-8%	-6%
ME-NH	5	52	*[ME-NH: -24%]*	*[ME-NH: -20%]*	*[ME-NH: -5%]*
MA-NJ	4	52	*[MA-NJ: -10%]*	*[MA-NJ: -6%]*	*[MA-NJ: -6%]*
DE-NC*	6	52	*[DE-NC: -45%]*	*[DE-NC: -37%]*	*[DE-NC: -5%]*
			-13%	-9%	-7%
ME-NH	5	61^	*[ME-NH: -28%]*	*[ME-NH: -24%]*	*[ME-NH: -6%]*
MA-NJ	4	61^	*[MA-NJ: -11%]*	*[MA-NJ: -7%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-5%	-4%
ME-NH	5	34	*[ME-NH: -15%]*	*[ME-NH: -13%]*	*[ME-NH: -3%]*
MA-NJ	5	34	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	34	*[DE-NC: -29%]*	*[DE-NC: -24%]*	*[DE-NC: -3%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-10%	-8%	-5%
ME-NH	5	47	*[ME-NH: -21%]*	*[ME-NH: -18%]*	*[ME-NH: -4%]*
MA-NJ	5	47	*[MA-NJ: -9%]*	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*
DE-NC*	6	47	*[DE-NC: -41%]*	*[DE-NC: -33%]*	*[DE-NC: -4%]*
			-14%	-10%	-7%
ME-NH	5	61^	*[ME-NH: -28%]*	*[ME-NH: -24%]*	*[ME-NH: -6%]*
MA-NJ	5	61^	*[MA-NJ: -12%]*	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-3%
ME-NH	5	15	*[ME-NH: -7%]*	*[ME-NH: -6%]*	*[ME-NH: -1%]*
MA-NJ	6	15	*[MA-NJ: -7%]*	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*
DE-NC*	6	15	*[DE-NC: -13%]*	*[DE-NC: -11%]*	*[DE-NC: -1%]*
			-10%	-8%	-4%
ME-NH	5	19	*[ME-NH: -9%]*	*[ME-NH: -7%]*	*[ME-NH: -2%]*
MA-NJ	6	19	*[MA-NJ: -9%]*	*[MA-NJ: -7%]*	*[MA-NJ: -5%]*
DE-NC*	6	19	*[DE-NC: -16%]*	*[DE-NC: -13%]*	*[DE-NC: -2%]*
			-17%	-13%	-8%
ME-NH	5	34	*[ME-NH: -15%]*	*[ME-NH: -13%]*	*[ME-NH: -3%]*
MA-NJ	6	34	*[MA-NJ: -17%]*	*[MA-NJ: -13%]*	*[MA-NJ: -8%]*
DE-NC*	6	34	*[DE-NC: -29%]*	*[DE-NC: -24%]*	*[DE-NC: -3%]*
			-8%	-7%	-3%
ME-NH	6	23	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	23	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -3%]*
DE-NC*	6	23	*[DE-NC: -20%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-8%	-8%	-3%
ME-NH	6	25	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	25	*[MA-NJ: -9%]*	*[MA-NJ: -8%]*	*[MA-NJ: -3%]*
DE-NC*	6	25	*[DE-NC: -22%]*	*[DE-NC: -18%]*	*[DE-NC: -2%]*
			-20%	-18%	-7%
ME-NH	6	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	2	61^	*[MA-NJ: -21%]*	*[MA-NJ: -19%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	6	31	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	3	31	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*	*[MA-NJ: -4%]*
DE-NC*	6	31	*[DE-NC: -27%]*	*[DE-NC: -22%]*	*[DE-NC: -3%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-10%	-8%	-5%
ME-NH	6	42	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	3	42	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*
DE-NC*	6	42	*[DE-NC: -36%]*	*[DE-NC: -30%]*	*[DE-NC: -4%]*
			-14%	-10%	-8%
ME-NH	6	58	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	3	58	*[MA-NJ: -14%]*	*[MA-NJ: -11%]*	*[MA-NJ: -8%]*
DE-NC*	6	58	*[DE-NC: -50%]*	*[DE-NC: -41%]*	*[DE-NC: -6%]*
			-8%	-5%	-5%
ME-NH	6	42	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	4	42	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*	*[MA-NJ: -5%]*
DE-NC*	6	42	*[DE-NC: -36%]*	*[DE-NC: -30%]*	*[DE-NC: -4%]*
			-11%	-7%	-7%
ME-NH	6	61^	[ME-NH: 0%]	[ME-NH: 0%]	[ME-NH: 0%]
MA-NJ	4	61^	[MA-NJ: -11%]	[MA-NJ: -7%]	[MA-NJ: -7%]
DE-NC*	6	61^	[DE-NC: -53%]	[DE-NC: -43%]	[DE-NC: -6%]
			-8%	-5%	-4%
ME-NH	6	39	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	5	39	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*	*[MA-NJ: -4%]*
DE-NC*	6	39	*[DE-NC: -34%]*	*[DE-NC: -28%]*	*[DE-NC: -4%]*
			-11%	-8%	-6%
ME-NH	6	55	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	5	55	*[MA-NJ: -11%]*	*[MA-NJ: -8%]*	*[MA-NJ: -6%]*
DE-NC*	6	55	*[DE-NC: -48%]*	*[DE-NC: -39%]*	*[DE-NC: -5%]*
			-12%	-8%	-6%
ME-NH	6	61^	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	5	61^	*[MA-NJ: -12%]*	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*
DE-NC*	6	61^	*[DE-NC: -53%]*	*[DE-NC: -43%]*	*[DE-NC: -6%]*
			-8%	-6%	-4%
ME-NH	6	17	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	17	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -4%]*
DE-NC**	4	17	*[DE-NC: -2%]*	*[DE-NC: -2%]*	*[DE-NC: -1%]*
			-10%	-8%	-5%
ME-NH	6	21	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	21	*[MA-NJ: -10%]*	*[MA-NJ: -8%]*	*[MA-NJ: -5%]*
DE-NC**	4	21	*[DE-NC: -3%]*	*[DE-NC: -2%]*	*[DE-NC: -1%]*

Ocean seasonal closures to achieve 8% recreational reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-16%	-13%	-8%
ME-NH	6	35	*[ME-NH: 0%]*	*[ME-NH: 0%]*	*[ME-NH: 0%]*
MA-NJ	6	35	*[MA-NJ: -17%]*	*[MA-NJ: -14%]*	*[MA-NJ: -8%]*
DE-NC**	4	35	*[DE-NC: -5%]*	*[DE-NC: -3%]*	*[DE-NC: -1%]*

* For the DE-NC region in the three-region configuration, DE-NC could choose Wave 2, 3, 4, or 5 instead of Wave 6 and this would result in either the same closure length or 1-2 additional days required for all regions. **For last option in table, DE-NC can choose Wave 2, 3, 4, or 5 for the same number of days.

^Option cannot achieve 8% reduction by closing the entire Wave.

Appendix 3 Table 4. Chesapeake Bay seasonal closure options to achieve an 8% recreational reduction. Slightly longer closures would be needed if the Board chose to take a 9% recreational reduction and a corresponding 0% commercial reduction. All Region/Wave combinations are shown except for combinations requiring more than a 45-day no-targeting closure under the 'striped bass-only trips eliminated' assumption, and excluding any combinations with Wave 2 (both MD and VA are closed to harvest and have few releases in Wave 2). Note: PRFC and DC can each choose whether to implement their closure during the same wave as Maryland or the same Wave as Virginia.

Chesapeake Bay seasonal closures to achieve 8% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-6%	-6%
MD	3	18	*[MD: -7%]*	*[MD: -5%]*	*[MD: -5%]*
VA	3	18	*[VA: -15%]*	*[VA: -15%]*	*[VA: -14%]*
			-10%	-8%	-7%
MD	3	23	*[MD: -9%]*	*[MD: -7%]*	*[MD: -6%]*
VA	3	23	*[VA: -20%]*	*[VA: -19%]*	*[VA: -17%]*
			-10%	-8%	-8%
MD	3	24	*[MD: -9%]*	*[MD: -7%]*	*[MD: -6%]*
VA	3	24	*[VA: -21%]*	*[VA: -20%]*	*[VA: -18%]*
			-8%	-7%	-6%
MD	4	21	*[MD: -8%]*	*[MD: -7%]*	*[MD: -6%]*
VA	4	21	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-9%	-8%	-7%
MD	4	24	*[MD: -10%]*	*[MD: -8%]*	*[MD: -7%]*
VA	4	24	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-10%	-9%	-8%
MD	4	28	*[MD: -11%]*	*[MD: -10%]*	*[MD: -9%]*
VA	4	28	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-8%	-7%	-5%
MD	5	18	*[MD: -8%]*	*[MD: -7%]*	*[MD: -6%]*
VA	5	18	*[VA: -3%]*	*[VA: -3%]*	*[VA: -2%]*
			-9%	-8%	-6%
MD	5	20	*[MD: -9%]*	*[MD: -8%]*	*[MD: -6%]*
VA	5	20	*[VA: -4%]*	*[VA: -3%]*	*[VA: -3%]*
			-11%	-10%	-8%
MD	5	26	*[MD: -12%]*	*[MD: -11%]*	*[MD: -8%]*
VA	5	26	*[VA: -5%]*	*[VA: -4%]*	*[VA: -4%]*
			-8%	-7%	-5%
MD	6	19	*[MD: -7%]*	*[MD: -7%]*	*[MD: -5%]*
VA	6	19	*[VA: -15%]*	*[VA: -13%]*	*[VA: -9%]*

Chesapeake Bay seasonal closures to achieve 8% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-8%	-5%
MD	6	20	*[MD: -8%]*	*[MD: -7%]*	*[MD: -5%]*
VA	6	20	*[VA: -16%]*	*[VA: -14%]*	*[VA: -10%]*
			-12%	-11%	-8%
MD	6	28	*[MD: -11%]*	*[MD: -10%]*	*[MD: -7%]*
VA	6	28	*[VA: -22%]*	*[VA: -19%]*	*[VA: -13%]*
			-8%	-6%	-6%
MD	3	23	*[MD: -9%]*	*[MD: -7%]*	*[MD: -6%]*
VA	4	23	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-10%	-8%	-7%
MD	3	30	*[MD: -11%]*	*[MD: -9%]*	*[MD: -8%]*
VA	4	30	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-10%	-8%	-8%
MD	3	31	*[MD: -12%]*	*[MD: -9%]*	*[MD: -8%]*
VA	4	31	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-8%	-6%	-6%
MD	3	22	*[MD: -8%]*	*[MD: -6%]*	*[MD: -6%]*
VA	5	22	*[VA: -4%]*	*[VA: -4%]*	*[VA: -3%]*
			-10%	-8%	-7%
MD	3	28	*[MD: -10%]*	*[MD: -8%]*	*[MD: -8%]*
VA	5	28	*[VA: -5%]*	*[VA: -5%]*	*[VA: -4%]*
			-11%	-8%	-8%
MD	3	30	*[MD: -11%]*	*[MD: -9%]*	*[MD: -8%]*
VA	5	30	*[VA: -6%]*	*[VA: -5%]*	*[VA: -4%]*
			-8%	-6%	-5%
MD	3	19	*[MD: -7%]*	*[MD: -5%]*	*[MD: -5%]*
VA	6	19	*[VA: -15%]*	*[VA: -13%]*	*[VA: -9%]*
			-10%	-8%	-7%
MD	3	24	*[MD: -9%]*	*[MD: -7%]*	*[MD: -6%]*
VA	6	24	*[VA: -19%]*	*[VA: -17%]*	*[VA: -11%]*
			-11%	-8%	-8%
MD	3	26	*[MD: -10%]*	*[MD: -7%]*	*[MD: -7%]*
VA	6	26	*[VA: -21%]*	*[VA: -18%]*	*[VA: -12%]*
			-8%	-7%	-6%
MD	4	17	*[MD: -7%]*	*[MD: -6%]*	*[MD: -5%]*
VA	3	17	*[VA: -15%]*	*[VA: -14%]*	*[VA: -13%]*

Chesapeake Bay seasonal closures to achieve 8% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-8%	-7%
MD	4	19	*[MD: -8%]*	*[MD: -7%]*	*[MD: -6%]*
VA	3	19	*[VA: -16%]*	*[VA: -16%]*	*[VA: -14%]*
			-10%	-9%	-8%
MD	4	22	*[MD: -9%]*	*[MD: -8%]*	*[MD: -7%]*
VA	3	22	*[VA: -19%]*	*[VA: -18%]*	*[VA: -17%]*
			-8%	-7%	-6%
MD	4	20	*[MD: -8%]*	*[MD: -7%]*	*[MD: -6%]*
VA	5	20	*[VA: -4%]*	*[VA: -3%]*	*[VA: -3%]*
			-9%	-8%	-7%
MD	4	23	*[MD: -9%]*	*[MD: -8%]*	*[MD: -7%]*
VA	5	23	*[VA: -4%]*	*[VA: -4%]*	*[VA: -3%]*
			-10%	-9%	-8%
MD	4	26	*[MD: -10%]*	*[MD: -9%]*	*[MD: -8%]*
VA	5	26	*[VA: -5%]*	*[VA: -4%]*	*[VA: -4%]*
			-8%	-7%	-6%
MD	4	18	*[MD: -7%]*	*[MD: -6%]*	*[MD: -6%]*
VA	6	18	*[VA: -14%]*	*[VA: -12%]*	*[VA: -9%]*
			-9%	-8%	-6%
MD	4	20	*[MD: -8%]*	*[MD: -7%]*	*[MD: -6%]*
VA	6	20	*[VA: -16%]*	*[VA: -14%]*	*[VA: -10%]*
			-11%	-9%	-8%
MD	4	24	*[MD: -10%]*	*[MD: -8%]*	*[MD: -7%]*
VA	6	24	*[VA: -19%]*	*[VA: -17%]*	*[VA: -11%]*
			-8%	-7%	-6%
MD	5	16	*[MD: -7%]*	*[MD: -7%]*	*[MD: -5%]*
VA	3	16	*[VA: -14%]*	*[VA: -13%]*	*[VA: -12%]*
			-8%	-8%	-6%
MD	5	17	*[MD: -8%]*	*[MD: -7%]*	*[MD: -5%]*
VA	3	17	*[VA: -15%]*	*[VA: -14%]*	*[VA: -13%]*
			-11%	-10%	-8%
MD	5	22	*[MD: -10%]*	*[MD: -9%]*	*[MD: -7%]*
VA	3	22	*[VA: -19%]*	*[VA: -18%]*	*[VA: -17%]*
			-8%	-7%	-5%
MD	5	19	*[MD: -9%]*	*[MD: -8%]*	*[MD: -6%]*
VA	4	19	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*

Chesapeake Bay seasonal closures to achieve 8% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-9%	-8%	-6%
MD	5	21	*[MD: -9%]*	*[MD: -9%]*	*[MD: -7%]*
VA	4	21	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-11%	-10%	-8%
MD	5	27	*[MD: -12%]*	*[MD: -11%]*	*[MD: -8%]*
VA	4	27	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-8%	-7%	-5%
MD	5	16	*[MD: -7%]*	*[MD: -7%]*	*[MD: -5%]*
VA	6	16	*[VA: -13%]*	*[VA: -11%]*	*[VA: -8%]*
			-9%	-8%	-6%
MD	5	18	*[MD: -8%]*	*[MD: -7%]*	*[MD: -6%]*
VA	6	18	*[VA: -14%]*	*[VA: -12%]*	*[VA: -9%]*
			-11%	-10%	-8%
MD	5	23	*[MD: -10%]*	*[MD: -9%]*	*[MD: -7%]*
VA	6	23	*[VA: -18%]*	*[VA: -16%]*	*[VA: -11%]*
			-8%	-7%	-5%
MD	6	18	*[MD: -7%]*	*[MD: -6%]*	*[MD: -4%]*
VA	3	18	*[VA: -15%]*	*[VA: -15%]*	*[VA: -14%]*
			-8%	-8%	-6%
MD	6	19	*[MD: -7%]*	*[MD: -7%]*	*[MD: -5%]*
VA	3	19	*[VA: -16%]*	*[VA: -16%]*	*[VA: -14%]*
			-11%	-10%	-8%
MD	6	26	*[MD: -10%]*	*[MD: -9%]*	*[MD: -6%]*
VA	3	26	*[VA: -22%]*	*[VA: -22%]*	*[VA: -20%]*
			-8%	-7%	-5%
MD	6	23	*[MD: -9%]*	*[MD: -8%]*	*[MD: -6%]*
VA	4	23	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-8%	-8%	-5%
MD	6	24	*[MD: -9%]*	*[MD: -9%]*	*[MD: -6%]*
VA	4	24	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-12%	-11%	-8%
MD	6	34	*[MD: -13%]*	*[MD: -12%]*	*[MD: -8%]*
VA	4	34	*[VA: 0%]*	*[VA: 0%]*	*[VA: 0%]*
			-8%	-7%	-5%
MD	6	21	*[MD: -8%]*	*[MD: -7%]*	*[MD: -5%]*
VA	5	21	*[VA: -4%]*	*[VA: -4%]*	*[VA: -3%]*

Chesapeake Bay seasonal closures to achieve 8% recreational reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-8%	-8%	-5%
MD	6	23	*[MD: -9%]*	*[MD: -8%]*	*[MD: -6%]*
VA	5	23	*[VA: -4%]*	*[VA: -4%]*	*[VA: -3%]*
			-11%	-11%	-8%
MD	6	32	*[MD: -12%]*	*[MD: -11%]*	*[MD: -8%]*
VA	5	32	*[VA: -6%]*	*[VA: -5%]*	*[VA: -4%]*

Appendix 4. Combined Size Limit and Seasonal Closure Example

This is an example of a combining seasonal closures with a size limit option for the ocean and the Chesapeake Bay. For this example, the size limit options for the ocean and Bay that come closest to, but fall short of, achieving a total recreational reduction of 14%. Slightly longer closures would be needed if the Board chose to take a 16% recreational reduction and a corresponding 0% commercial reduction. This is not an exhaustive list of options; only the combinations resulting in the shortest closure durations are shown.

Appendix 4 Table 1. Ocean options combining a 40" minimum size limit (-6% reduction) with seasonal closures (-9% reduction) to achieve a cumulative -14% reduction. Slightly longer closures would be needed if the Board chose to take a 16% recreational reduction and a corresponding 0% commercial reduction. This is not an exhaustive list; only the combinations resulting in the shortest closure durations are shown.

Ocean seasonal closures (-9%) combined with 40" Minimum Size for Cumulative -14% Reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
All States	6	18	-9%	-7%	-4%
All States	6	23	-11%	-9%	-5%
All States	6	39	-18%	-15%	-9%
			-9%	-6%	-4%
ME-MA	3	16	*[ME-MA: -6%]*	*[ME-MA: -2%]*	*[ME-MA: -2%]*
RI-NC	6	16	*[RI-NC: -10%]*	*[RI-NC: -8%]*	*[RI-NC: -5%]*
			-12%	-9%	-5%
ME-MA	3	22	*[ME-MA: -8%]*	*[ME-MA: -3%]*	*[ME-MA: -2%]*
RI-NC	6	22	*[RI-NC: -14%]*	*[RI-NC: -11%]*	*[RI-NC: -6%]*
			-19%	-14%	-9%
ME-MA	3	35	*[ME-MA: -13%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	6	35	*[RI-NC: -22%]*	*[RI-NC: -17%]*	*[RI-NC: -10%]*
			-9%	-7%	-4%
ME-MA	4	15	*[ME-MA: -8%]*	*[ME-MA: -4%]*	*[ME-MA: -4%]*
RI-NC	6	15	*[RI-NC: -9%]*	*[RI-NC: -7%]*	*[RI-NC: -4%]*
			-12%	-9%	-6%
ME-MA	4	20	*[ME-MA: -11%]*	*[ME-MA: -6%]*	*[ME-MA: -6%]*
RI-NC	6	20	*[RI-NC: -12%]*	*[RI-NC: -10%]*	*[RI-NC: -6%]*
			-18%	-13%	-9%
ME-MA	4	30	*[ME-MA: -17%]*	*[ME-MA: -9%]*	*[ME-MA: -9%]*
RI-NC	6	30	*[RI-NC: -19%]*	*[RI-NC: -15%]*	*[RI-NC: -9%]*
			-9%	-7%	-4%
ME-MA	5	16	*[ME-MA: -5%]*	*[ME-MA: -4%]*	*[ME-MA: -2%]*
RI-NC	6	16	*[RI-NC: -10%]*	*[RI-NC: -8%]*	*[RI-NC: -5%]*

Ocean seasonal closures (-9%) combined with 40" Minimum Size for Cumulative -14% Reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-11%	-9%	-5%
ME-MA	5	20	*[ME-MA: -7%]*	*[ME-MA: -5%]*	*[ME-MA: -3%]*
RI-NC	6	20	*[RI-NC: -12%]*	*[RI-NC: -10%]*	*[RI-NC: -6%]*
			-19%	-15%	-9%
ME-MA	5	34	*[ME-MA: -11%]*	*[ME-MA: -8%]*	*[ME-MA: -4%]*
RI-NC	6	34	*[RI-NC: -21%]*	*[RI-NC: -17%]*	*[RI-NC: -10%]*
			-9%	-7%	-4%
ME-NH	3	18	*[ME-NH: -6%]*	*[ME-NH: -2%]*	*[ME-NH: -1%]*
MA-NJ	6	18	*[MA-NJ: -9%]*	*[MA-NJ: -7%]*	*[MA-NJ: -4%]*
DE-NC*	6	18	*[DE-NC: -16%]*	*[DE-NC: -13%]*	*[DE-NC: -2%]*
			-11%	-9%	-5%
ME-NH	3	23	*[ME-NH: -7%]*	*[ME-NH: -3%]*	*[ME-NH: -1%]*
MA-NJ	6	23	*[MA-NJ: -11%]*	*[MA-NJ: -9%]*	*[MA-NJ: -5%]*
DE-NC	6	23	*[DE-NC: -20%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-19%	-15%	-9%
ME-NH	3	39	*[ME-NH: -12%]*	*[ME-NH: -5%]*	*[ME-NH: -2%]*
MA-NJ	6	39	*[MA-NJ: -19%]*	*[MA-NJ: -15%]*	*[MA-NJ: -9%]*
DE-NC	6	39	*[DE-NC: -34%]*	*[DE-NC: -28%]*	*[DE-NC: -4%]*
			-9%	-7%	-4%
ME-NH	4	17	*[ME-NH: -11%]*	*[ME-NH: -7%]*	*[ME-NH: -2%]*
MA-NJ	6	17	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -4%]*
DE-NC*	6	17	*[DE-NC: -15%]*	*[DE-NC: -12%]*	*[DE-NC: -2%]*
			-11%	-9%	-5%
ME-NH	4	22	*[ME-NH: -15%]*	*[ME-NH: -9%]*	*[ME-NH: -3%]*
MA-NJ	6	22	*[MA-NJ: -11%]*	*[MA-NJ: -9%]*	*[MA-NJ: -5%]*
DE-NC*	6	22	*[DE-NC: -19%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*
			-20%	-15%	-9%
ME-NH	4	38	*[ME-NH: -25%]*	*[ME-NH: -16%]*	*[ME-NH: -5%]*
MA-NJ	6	38	*[MA-NJ: -19%]*	*[MA-NJ: -15%]*	*[MA-NJ: -9%]*
DE-NC*	6	38	*[DE-NC: -33%]*	*[DE-NC: -27%]*	*[DE-NC: -4%]*
			-9%	-7%	-4%
ME-NH	5	17	*[ME-NH: -8%]*	*[ME-NH: -7%]*	*[ME-NH: -2%]*
MA-NJ	6	17	*[MA-NJ: -8%]*	*[MA-NJ: -7%]*	*[MA-NJ: -4%]*
DE-NC*	6	17	*[DE-NC: -15%]*	*[DE-NC: -12%]*	*[DE-NC: -2%]*
			-11%	-9%	-5%
ME-NH	5	22	*[ME-NH: -10%]*	*[ME-NH: -9%]*	*[ME-NH: -2%]*
MA-NJ	6	22	*[MA-NJ: -11%]*	*[MA-NJ: -9%]*	*[MA-NJ: -5%]*
DE-NC*	6	22	*[DE-NC: -19%]*	*[DE-NC: -16%]*	*[DE-NC: -2%]*

Ocean seasonal closures (-9%) combined with 40" Minimum Size for Cumulative -14% Reduction [regional reduction also shown]					
Region	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-19%	-15%	-9%
ME-NH	5	38	*[ME-NH: -17%]*	*[ME-NH: -15%]*	*[ME-NH: -4%]*
MA-NJ	6	38	*[MA-NJ: -19%]*	*[MA-NJ: -15%]*	*[MA-NJ: -9%]*
DE-NC*	6	38	*[DE-NC: -33%]*	*[DE-NC: -27%]*	*[DE-NC: -4%]*

*Note: For the DE-NC region in the three-region configuration, DE-NC could choose Wave 2, 3, 4, or 5 instead of Wave 6 and this would result in either the same closure length or 1-2 additional days required for all regions.

Appendix 4 Table 2. Chesapeake Bay options combining a 20"-24" slot limit (-8% reduction) with seasonal closures (-6% reduction) to achieve a cumulative -14% reduction. Slightly longer closures would be needed if the Board chose to take a 16% recreational reduction and a corresponding 0% commercial reduction. This is not an exhaustive list; only the combinations resulting in the shortest closure durations are shown. Note: PRFC and DC can each choose whether to implement their closure during the same wave as Maryland or the same Wave as Virginia.

Chesapeake Bay seasonal closures (-6%) combined with 20"-24" slot for Cumulative -14% Reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-6%	-5%	-4%
MD	3	14	*[MD: -5%]*	*[MD: -4%]*	*[MD: -4%]*
VA	3	14	*[VA: -12%]*	*[VA: -12%]*	*[VA: -11%]*
			-7%	-6%	-5%
MD	3	17	*[MD: -6%]*	*[MD: -5%]*	*[MD: -5%]*
VA	3	17	*[VA: -15%]*	*[VA: -14%]*	*[VA: -13%]*
			-8%	-6%	-6%
MD	3	18	*[MD: -7%]*	*[MD: -5%]*	*[MD: -5%]*
VA	3	18	*[VA: -15%]*	*[VA: -15%]*	*[VA: -14%]*
			-6%	-5%	-4%
MD	5	13*	*[MD: -6%]*	*[MD: -5%]*	*[MD: -4%]*
VA	5	13*	*[VA: -2%]*	*[VA: -2%]*	*[VA: -2%]*
			-6%	-6%	-4%
MD	5	15	*[MD: -7%]*	*[MD: -6%]*	*[MD: -5%]*
VA	5	15	*[VA: -3%]*	*[VA: -3%]*	*[VA: -2%]*
			-8%	-7%	-6%
MD	5	19	*[MD: -9%]*	*[MD: -8%]*	*[MD: -6%]*
VA	5	19	*[VA: -4%]*	*[VA: -3%]*	*[VA: -3%]*
			-6%	-5%	-5%
MD	4	13*	*[MD: -5%]*	*[MD: -5%]*	*[MD: -4%]*
VA	3	13*	*[VA: -11%]*	*[VA: -11%]*	*[VA: -10%]*
			-6%	-6%	-5%
MD	4	14	*[MD: -6%]*	*[MD: -5%]*	*[MD: -4%]*
VA	3	14	*[VA: -12%]*	*[VA: -12%]*	*[VA: -11%]*
			-7%	-6%	-6%
MD	4	16	*[MD: -6%]*	*[MD: -6%]*	*[MD: -5%]*
VA	3	16	*[VA: -14%]*	*[VA: -13%]*	*[VA: -12%]*
			-6%	-5%	-4%
MD	4	13*	*[MD: -5%]*	*[MD: -5%]*	*[MD: -4%]*
VA	6	13*	*[VA: -10%]*	*[VA: -9%]*	*[VA: -6%]*

Chesapeake Bay seasonal closures (-6%) combined with 20”-24” slot for Cumulative -14% Reduction [Bay state reduction also shown]					
Bay State	**Wave**	**Closure Length Days**	**No-Targeting Closure - Striped Bass Only Trips Eliminated**	**No Targeting Closure - All Striped Bass Trips Occur with New Target**	**No-Harvest Closure - All Striped Bass Releases Still Occur**
			-7%	-6%	-5%
MD	4	15	*[MD: -6%]*	*[MD: -5%]*	*[MD: -5%]*
VA	6	15	*[VA: -12%]*	*[VA: -10%]*	*[VA: -7%]*
			-7%	-7%	-6%
MD	4	17	*[MD: -7%]*	*[MD: -6%]*	*[MD: -5%]*
VA	6	17	*[VA: -14%]*	*[VA: -12%]*	*[VA: -8%]*
			-6%	-5%	-4%
MD	5	12*	*[MD: -5%]*	*[MD: -5%]*	*[MD: -4%]*
VA	3	12*	*[VA: -10%]*	*[VA: -10%]*	*[VA: -9%]*
			-6%	-6%	-5%
MD	5	13*	*[MD: -6%]*	*[MD: -5%]*	*[MD: -4%]*
VA	3	13*	*[VA: -11%]*	*[VA: -11%]*	*[VA: -10%]*
			-8%	-7%	-6%
MD	5	16	*[MD: -7%]*	*[MD: -7%]*	*[MD: -5%]*
VA	3	16	*[VA: -14%]*	*[VA: -13%]*	*[VA: -12%]*
			-6%	-5%	-4%
MD	5	12*	*[MD: -5%]*	*[MD: -5%]*	*[MD: -4%]*
VA	6	12*	*[VA: -10%]*	*[VA: -8%]*	*[VA: -6%]*
			-6%	-6%	-4%
MD	5	13*	*[MD: -6%]*	*[MD: -5%]*	*[MD: -4%]*
VA	6	13*	*[VA: -10%]*	*[VA: -9%]*	*[VA: -6%]*
			-8%	-7%	-6%
MD	5	17	*[MD: -8%]*	*[MD: -7%]*	*[MD: -5%]*
VA	6	17	*[VA: -14%]*	*[VA: -12%]*	*[VA: -8%]*
			-6%	-6%	-4%
MD	6	14	*[MD: -5%]*	*[MD: -5%]*	*[MD: -3%]*
VA	3	14	*[VA: -12%]*	*[VA: -12%]*	*[VA: -11%]*
			-8%	-8%	-6%
MD	6	19	*[MD: -7%]*	*[MD: -7%]*	*[MD: -5%]*
VA	3	19	*[VA: -16%]*	*[VA: -16%]*	*[VA: -14%]*

*The TC has previously noted that season closures less than two weeks duration are unlikely to be effective.