PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC STRIPED BASS MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
Hybrid Meeting

February 5, 2026
Approved May 2026

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1. **Approval of agenda** by consent (Page 1).

2. **Approval of Proceedings of October 2025** by consent (Page 1).

3. **Move to approve Addendum III State Implementation Plans** (Page 2). Motion by Joe Grist; second by John Clark. Motion carries (Page 5).

4. **Move to adjourn** by consent (Page 32).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for C. Wilson (AA)
Steve Train, ME (GA)
Rep. Allison Hepler, ME (LA)
Renee Zobel, NH (AA)
Doug Grout, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Nichola Meserve, MA, proxy for D. McKiernan (AA)
Ray Kane, MA (GA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Matt Gates, CT (AA)
Bill Hyatt, CT (GA)
Craig Miner, CT proxy for Rep. Gresko, CT (LA)
Marty Gary, NY (AA)
Emerson Hasbrouck, NY (GA)
Joe Cimino, NJ (AA)
Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)
John Clark, DE (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Michael Luisi, MD, proxy for L. Fegley (AA)
Robert Brown, MD, proxy for R. Dize (GA)
David Sikorski, MD, proxy for Del. Stein (LA)
Joe Grist, VA (Acting AA)
Chris Batsavage, NC, proxy for K. Rawls (AA)
Daniel Ryan, DC, proxy for R. Cloyd
Ron Owens, PRFC
Max Appleman, NMFS
Chris Wright, NMFS
Rick Jacobson, US FWS

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

Ex-Officio Members

Tyler Grabowski, Technical Committee Chair
Margaret Conroy, Stk. Assmnt. Subcommittee Chair
Lt. Jeff Mercer, Law Enforcement Committee Rep.

Staff

Bob Beal
Toni Kerns
Tina Berger
Madeline Musante
Alexander Law
Caitlin Starks
Emilie Franke
Tracey Bauer
James Boyle
Chelsea Tuohy
Pat Campfield
Katie Drew
Jeff Kipp
Samara Nehemiah
Jainita Patel

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia, via hybrid meeting, in-person and webinar; Thursday, February 5, 2026, and was called to order at 8:30 a.m. by Chair Chris Batsavage.

CALL TO ORDER

CHAIR CHRIS BATSAVAGE: Good morning, everyone. I would like to call the Striped Bass Management Board meeting to order. My name is Chris Batsavage; I am the Administrative Proxy for North Carolina, and I'll be serving as Chair.

I want to thank Megan Ware for chairing this Board for the last two years, it was a very busy two years. We'll see how the next two years go. Before I get into the other items I'll just look to Toni Kerns to see which Board members are attending online.

MS. TONI KERNS: We have Steve Train from Maine, Emerson Hasbrouck from New York, and then for NOAA Fisheries, Chris Wright is starting us off and then Max Appleman will be on in about 20 or 30 minutes and he'll take over.

APPROVAL OF AGENDA

CHAIR BATSAVAGE: Move on to approval of the agenda. Are there any additions or modifications to the agenda? Seeing none; that is approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR BATSAVAGE: Next is approval of the proceedings from our October 2025 meeting. We received edits from Doug Grout on Page 24 of the proceedings, but are there any other edits that Board members have from those proceedings? Seeing none; those proceedings are approved by consent with those edits that will be made.

PUBLIC COMMENT

CHAIR BATSAVAGE: Next up is Public Comment. This is for items not on the agenda. Just so the public knows, I will be offering opportunities to provide comments for items on the agenda later when they come up. There will be some limited time to provide any comments at that point. Just looking for any comments for things not on the agenda right now. Looking in the room I don't see anyone. Okay, Captain Robert Newberry.

CAPTAIN ROBERT NEWBERRY: Can you hear me, okay?

CHAIR BATSAVAGE: Yes, if you can keep your comments to two minutes. I apologize for the short time period.

CAPTAIN NEWBERRY: No problem, it will be quick. I would just like to have a moment of silence for those crew members on the boat in Cape Cod that passed away the other day, if we could. That is all I'm asking for, for this Commission right now.

(Whereupon a moment of silence was observed.)

CHAIR BATSAVAGE: Thank you for that.

REVIEW AND CONSIDER APPROVAL OF ADDENDUM III STATE IMPLEMENTATION PLANS

CHAIR BATSAVAGE: Next up is Review and Consider Approval of Addendum III State Implementation Plans. Emilie Franke will go through that presentation.

MS. EMILIE FRANKE: I will be going over the Addendum III State Implementation Plans. Those were due on December 31, and those were primarily regarding the total length definition in Addendum III. We also received notification from Maryland on its decision on their recreational season.

The Plan Review Team did meet on January 13 to review the implementation plans. As far as total length; in the Addendum there are two elements as part of the definition. One is squeezing the tail and

two is a straight-line measurement. These elements have to apply to both sectors. States could implement the definition that was provided in the Addendum, which is listed here on the screen, or states could submit alternative language for Board consideration that meets those two elements.

States have an implementation deadline of January 1st 2027. Overall, the Plan Review Team found that all state implementation plans were consistent with the total length measures in Addendum III. Nine of the 14 jurisdictions plan to implement the provided definition in Addendum III verbatim or with very slight modifications.

Many states do plan to implement this year, but all states do plan to meet that January 1st 2027 deadline. Then there were five states who provided their existing definitions of total length, which already meet the required elements, so therefore there are no regulatory change necessary for those five states.

Just a couple notes of interest from the PRT. The PRT notes that Delaware actually plans to implement this definition of total length for all of their species that use total length best size limits. Then the PRT also notes that some states included additional elements in their definition, so for example requiring the fish to be laid flat or requiring the mouth to be closed.

Then for the Maryland recreational season, Maryland's plan specifies that Maryland has chosen to move forward with implementing the new recreational season baseline, and Maryland notes that those new season regulations are currently awaiting review and approval with an expected effectively of March. That's all I have.

CHAIR BATSAVAGE: Thanks, Emilie. Any questions for Emilie on this presentation? Yes, Nichola Meserve.

MS. NICHOLA MESERVE: Thanks for the succinct presentation, Emilie. Don't mean to put anyone on the spot, but reading through the Implementation Plan, I was unclear whether the District of Colombia had made a regulatory change as opposed to just an announcement. Just the wording wasn't clear to me as to whether it was actually a regulatory change.

MR. DANIEL RYAN: It was not a regulatory change. It goes out in the form of an annual announcement. It's an announcement from our director. The season is announced with any ASMFC regulations that need to be followed. That hit the DC Register on January 31, so we've already implemented those changes and they are in affect.

CHAIR BATSAVAGE: Kris Kuhn.

MR. KRISTOPHER M. KUHN: Not necessarily a question, just a point of clarification. It was pointed out that Delaware intends to implement for all species and so does Pennsylvania. It is outlined in our implementation plan.

CHAIR BATSAVAGE: Any other questions or clarifications on the Implementation Plan? Seeing none; we'll be approving these implementation plans. We have a motion prepared if someone would like to make that. I see Joe Grist.

MR. JOSEPH GRIST: **Move to approve Addendum III State Implementation Plans.**

CHAIR BATSAVAGE: Thanks, and second by John Clark. Any discussion on the motion? Is there any public who would like to comment on this motion to approve the State Implementation Plans? We have two commenters, first I'll go to Brian Hardman, and if you can keep the comments to two minutes that would be great.

MS. KERNS: Brian, if you're speaking, we cannot hear you. What we're going to do is Chris, maybe go to Captain Newberry first, since we know his mic works, and then come back to Brian.

CHAIR BATSAVAGE: While we work out the audio issues, Brian, we'll go to Captain Robert Newberry.

CAPTAIN NEWBERRY: Just one first question. This is the implementation we're talking about is moving forward with the measurement and the baseline adjustment that Maryland has moved forward with, am I correct?

MS. KERNS: Yes.

CAPTAIN NEWBERRY: Okay, we just have a major concern here in Maryland, because when we left the Dewey Beach meeting, back the last meeting that we had, Maryland was going to come back and set up a meeting on the eastern shore and on the western shore for this baseline discussion, and then have a workgroup.

That was not done. They immediately went into the scoping process, and to this date we have not had any type of a meeting to discuss this. The adverse impact of this baseline adjustment that shuts down the entire month of August is extremely detrimental, not only to the fishery, but to the economics of Maryland.

The other major issue that we have is that University of Massachusetts, along with the Woods Hole Institute has done research on handling and catching of these fish, specifically during the spawning season, and it is very adversely affecting not only the spawning but the health and the condition of these fish. It is our major concern with the industry, both the commercial and recreational and charterboat industry in Maryland that this really should not move forward until there is better research done.

Because if we're trying to protect this spawning stock by 2029, targeting these fish specifically during the months of March, April and May; pre spawn and post spawn, now that we have a study out there that has been completed, is going to be very detrimental. We have agreed, charter, commercial and recreational not to have a trophy season, which is that time. Now they are just using an excuse to have a catch and release. I do not think we should move forward with this, and I thank the Commission very much.

CHAIR BATSAVAGE: Thank you for the comments. Are there any other members of the public who would like to comment on the motion?

MS. KERNS: Brian, I see that your mic is open, but we're not hearing you. We still don't hear you, Brian. My guess is his mic is not connected. Sometimes what works for me is logging out and then logging back in, but my technical expertise is low. But we still can't hear you. I apologize, Brian.

CHAIR BATSAVAGE: Sorry about that, Brian. Okay, so in the interest of time we'll come back to the Board on this. Is there any need to caucus? Yes, Adam Nowalsky.

MR. ADAM NOWASLKSY: I was just wondering if Maryland wanted to respond on the record to that question about what transpired, just so that everyone is clear.

CHAIR BATSAVAGE: I'm looking to Maryland to see who wants to respond.

MR. MICHAEL LUISI: Sure. I don't have a whole lot to say. We left the Dewey Beach meeting and then we entered into our own state regulatory process, for which we followed each and every stop along the way, in order to inform and receive feedback from the public. We had a public scoping process that generated over 1200 comments that we used to guide our decisions.

The claims that were made about work groups and public hearings in different sides of the Chesapeake Bay, that was something we considered, but decided ultimately to stick to the format that we did. Again, we've met every one of our regulatory requirements in order to move that idea forward. It's still in process; it's not at the end of the road yet.

Things could still happen along the way, and what we put in the implementation plan was that if we get to a point where the administration no longer wants to pursue a baseline approach, as it was presented to this Commission, we would fall back to our rules from the previous year. I can't speak to what is going to happen, because we're still in the middle of the process. But hopefully that addresses the concerns raised by the public.

CHAIR BATSAVAGE: Robert T. Brown.

MR. ROBERT T. BROWN: It was our understanding at the last meeting that status quo was where we were supposed to be at. The baseline is really not status quo as we presented, which did pass. The commercial and the charter boats have grave concern about our spawning stock being inundated with catch and release for that time period of April/May.

I would like to know, where does the status quo come into play with the standing of Maryland doing this new baseline. The status quo was voted on first, and I think it should be going through one more year before the baseline could be implemented or be allowed to implement it.

CHAIR BATSAVAGE: Let's go to Bob Beal, and Dave Sikorski, I have next.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Let Dave go first, then I'll comment.

CHAIR BATSAVAGE: Great, Dave Sikorski.

MR. DAVID SIKORSKI: I just wanted to go back a little bit further in time, because when the conversation around a baseline started and this Commission was willing to consider the proposal that ultimately came forward and was approved. The Department organized the stakeholder workgroup.

I participated in it. Robert T. participated in it as the delegation, and that stakeholder workgroup included broad sweeps of the recreational fishery, private anglers, for-hire components that are in different components of for hire. We worked through multiple meetings, and that's how the baseline proposal that ultimately was presented here and approved was created.

It is obvious that there was some opposition within that process, but the majority of participants guided the Department. The Department made their decisions; we presented them here. We approved them here as a Commission, and now the Department has chosen to move forward with their process, as Mike mentioned.

There has been plenty of opportunity for stakeholders to participate, in my perspective. I participated in all those to make sure that all perspectives have been heard. As Mike said, the vast majority of input during the initial two-week scoping period which the Department does was about 70-30 support for the baseline to move forward, and that is why we are here where we are today. Just to clarify all that for the record.

CHAIR BATSAVAGE: Next up, Bob Beal.

EXECUTIVE DIRECTOR BEAL: Dave said some of the things I was going to say. Just as a reminder, you know the Board gave Maryland the flexibility to implement either status quo or the new baseline option that they brought forward for consideration. The Board reviewed it, said these are very similar level of conservation. It's solely a Maryland decision now.

Choosing status quo or choosing a new baseline is a Maryland process. It's not really in the Commission's hand anymore. The Commission gave the flexibility to the state to choose one or the other. I appreciate the public comments and I'm not trying to diminish the potential impacts and concerns anyone has. But it is a Maryland decision, or a completely Maryland decision not an ASMFC decision.

CHAIR BATSAVAGE: I appreciate that clarification. Any other discussion by the Board? Is there any

need to caucus? In the interest of staying on time, **is there any objection to approving the State Implementation Plans? Okay, seeing none; those are approved**. Thanks.

DISCUSS WORK GROUP ON FUTURE STRIPED BASS MANAGEMENT

CHAIR BATSAVAGE: Next is to discuss the Work Group on Future Striped Bass Management, and Emilie has a presentation for that.

MS. FRANKE: I will go over the content from the staff memo that was provided in the main meeting materials requesting guidance from the Board on this Work Group on future striped bass management. In October at the annual meeting the Board did approve the establishment of a Work Group on future striped bass management, and so today staff is seeking guidance on the composition of the Work Group, details about the tasks and the timeline.

I think it is helpful to see the motion. This is the first part of the motion. The tasks aren't listed here; I'll get to those in a minute. But I am just going to quickly read it. Establish a Work Group to develop a white paper that could inform a future management document. The Work Group should include representation from all sectors, in addition to scientists and managers.

The goal of this Work Group is to consider how to update the FMPs goals, objectives and management of striped bass beyond 2029, in consideration of severely reduced reproductive success in the Chesapeake Bay. The Work Group should utilize public comment, including that received during Addendum III to inform its research in management recommendations and work with the Benchmark Stock Assessment Subcommittee to incorporate ideas and deliver necessary data products.

Then there was a list of six tasks that the Work Group should include. I'll get to those in a little bit. First on the Work Group composition. The Board motion does indicate participation by all sectors, scientists and managers, but does not provide specifics. Staff is seeking guidance on the size and composition of the Work Group and the process for selecting Work Group participants.

A couple questions just to help for discussion. What would be the maximum size of the Work Group to ensure the group will function effectively? Will each Work Group seat be allocated by category to ensure representation of the full geographic range and diversity of stakeholder interest? Will there be a specific nomination process?

For example, would each state nominate a certain number of participants? Then how will individuals be chosen? As far as the task details and timelines and deliverables. In thinking through these the memo provides some notes from staff on sort of how those tasks might fit in with the current stock assessment, and sort of how those overlap.

It seemed that most of the tasks do require some level of information gathering before the Work Group would meet, and/or completion or at least some progress on the benchmark assessment before the Work Group would meet. Just something for the Board to think about as sort of the timing of when this Work Group would fit into things. As a reminder, the benchmark is scheduled for peer review in March of next year. The first task was to review the biological reference points and consider recruitment sensitive model-based approaches. Just a couple notes from staff here. As we will do at our next agenda item today, the Full Board is being asked for guidance on the biological reference points right now in the process.

Sort of one potential avenue is if through the assessment process the Stock Assessment Subcommittee is able to develop multiple options for biological reference points, that do pass peer review, maybe the Work Group could provide input on that eventual list of BRP options next year. Just one thought on how the Work Group might fit in there.

The next task is to formally review hatchery stocking as both a research tool and a management tool with a cost analysis. Some thoughts on what information is needed there. There are a couple of task Commission reports on striped bass stocking. Those reports were compiled back in the nineties, so or course reviewing those.

We could gather information from state agencies on past and current stocking. Looking at North Carolina for current stocking here and asking questions about performance, resource needs, environmental concerns, genetic or disease concerns, and perhaps a literature review of stocking for other diadromous species in sort of open estuaries, open environments could be useful here.

The next task was to evaluate the potential for other river systems to contribute to the stock. Again, I think there would be a need to compile the available information of the river systems, you know talking to state agencies if there are other particular river systems that have been sort of monitored for potential spawning activity.

There have been some recent genetic studies on the spawning origin of striped bass, so those would be added to the background information of the current stock assessment as well. The next task is about recruitment, to explore the drivers of recruitment success and failure in the Chesapeake Bay, Delaware and the Hudson in light of changing climate and environmental conditions, including potential impacts from invasive species.

One note here is the Stock Assessment Subcommittee is already conducting a literature review on this topic and the SAS is also considering which potential drivers of recruitment could potentially be incorporated into the assessment model. The SAS is already working on this question at this point.

The next task is to explore the reproductive contribution of large and small female fish, and the implications of various size-based management tools. A couple notes here. Of course, there is some information in the past assessments on the reproductive contribution of different size striped bass. We could also talk to state agency staff who work on these spawning surveys about what they're seeing.

Then after the assessment is complete, the TC and SAS could provide input on size-based management tools, you know depending on what the Board might be considering for the next management action. The final task was looking at methods to address discard mortality in the catch and release fishery. An important note here is we're all familiar with the Massachusetts DMF release mortality work that is still underway. When that work is available, one potential avenue was the Work Group could sort of look back at the Work Group we had last year in 2024 on release mortality, look at that report sort of in light of the new findings from the Massachusetts DMF work, and the other recent studies, for example from UMass Amherst and sort of update that report or revisit those topics with this new information.

Again, those were some thoughts from staff on what might need to be done in advance of the Work Group meeting, in order to ensure the Work Group has the information they need to have a productive discussion. That's just a starting point. You know we're really looking for Board guidance on these tasks, the timing, and then as I mentioned the composition of the Work Group.

CHAIR BATSAVAGE: First look for questions on the presentation before we jump into guidance and discussion. Just to kind of give a sense of kind of the flow of things, besides what Emilie pointed out is absolutely kind of exhausted any questions. I'm going to go to Marty Gary first, since him and his staff have put together this motion for the Work Group to provide his perspective and then go to others. But first I'll look for any questions on the presentation. Roy Miller.

MR. ROY W. MILLER: I was wondering if Item, I guess it was Item 4, Exploring Drivers of Recruitment Including Impacts from Invasive Species. I was wondering if we should maybe carry that one more step. If we find there are drivers of invasive species, what would be a strategy to lessen that impact?

That is something that fisheries agencies have some control over, unlike climate change and spring rains and that kind of thing. I would just throw that out there as something that we should give some collective consideration to, particularly if we feel it's an important problem, what can we do about it?

CHAIR BATSAVAGE: Any other questions on the presentation? Kris Kuhn.

MR. KUHN: Yes, I just had a question regarding the stocking of striped bass. I am somewhat familiar with North Carolina's efforts, but you referenced some other stocking efforts. Do you have any examples of those, and were they evaluated and if so, how?

MS. FRANKE: No examples yet, I think that would be the goal. If there were other species that could be looked at as an example, other diadromous species in sort of open environments, not in sort of a closed lake or anything like that, to look to. I think that that could be helpful. But the only current stocking of striped bass along the coast, again with an open environment that I know of right now is in North Carolina.

MR. JOHN CLARK: Just on the stocking, Mr. Chair. I'm familiar with, we have a consultant in Delaware that has been, we've been giving him a permit to take spawning striped bass for how long, Roy, probably about 30 years, 35 years. I think he was contracted by a power plant in Maryland to stock. Is that Vienna that they go in, Dave? There is another example of striped bass stocking.

MS. FRANKE: Where are they stocking those striped bass?

MR. CLARK: They would be able to get into the Chesapeake, I believe, that was the plan was to let them go there, to make up for what the Power Plant was impinging.

CHAIR BATSAVAGE: Any other questions on the presentation? Yes, Dave Sikorski.

MR. SIKORSKI: Just so I don't forget. Emilie, I'll follow up with you and I think the Department can as well, to talk to you about some of the other past Chesapeake work. But I happen to have a board member that participated in the hatchery work in Vienna at the Power Plant. I can connect you with him separately, you can talk about that history I think in the early nineties was what his time focused on that operation.

CHAIR BATSAVAGE: Thanks, this is good.

PROVIDE GUIDANCE ON WORK GROUP COMPOSITION, TASK DETAILS, AND TIMELINE

CHAIR BATSAVAGE: I think we're definitely starting to transition into the guidance and discussion on this topic. As promised, I will go to Marty Gary first, and I was looking for other hands from Board member who want to provide some guidance on this Work Group. Marty.

MR. MARTY GARY: New York delegation made the motion. I just want to take one step back to explain. Faced with the choice we had back at the October Board meeting of the 12% reduction in status quo. You know we walked into that not really being happy with either one of those choices. Now we know the 12% reduction, which was fraught with some uncertainty with some of the catch estimates through Wave 4.

Now we have Wave 5 data. Katie will tell us a little bit later that it looks like that continues, and we're still probably dealt a negative something like 21%. If we assume that Wave 6 from '25 matches '24. It turns out that maybe that was a good decision, so

that pivots us back to the status quo. We weren't terribly excited about doing nothing.

We're limited, right with this Board in the tools that we have available to us. Work Groups are frankly one of the only tools we have. We consulted with leadership and staff over at ASMFC and came to the conclusion that that was our best path forward to form a Work Group. But the driver here, I don't want any of the Board members to lose sight of this, is this accrual of poor year classes in the Chesapeake Bay and now in the Hudson River.

If you haven't heard, they released yesterday the 25 Hudson Index, which was its third consecutive poor index. Also, in the lower 25% quartile. Both the Hudson and the Chesapeake, which combined produce about 90% to the coastal stock have been in long term recruitment failure. This weighs heavily on the delegation's mind when we made the motion.

For me personally. You know I look around this room. There is a huge depth of experience and knowledge. I mean everybody here has a long history with this species. I personally crossed the 40-year bar working with this species last year.

But yet I look across the table and I see people like Dennis Abbott, Doug Grout, Roy Miller. They've got an even longer baseline than I do. I think that what comes to my mind and what came to our delegation's mind was, from an experiential standpoint we know what lies ahead. The thrust of this motion is really to prepare us to have these discussions with our public amongst us as a Board, to figure out how we are going to manage this fishery at a lower-level abundance as we get into 2030s.

Having first hand seen as a young biologist that started in the mid-eighties at the onset of the moratorium in Maryland, and seeing what bad looks like at close range. I can tell you, I know what it looks like and I see what's ahead. What scares me is not underachieving the FMP requirement for reaching the SSB target in 2029.

What scares me is, what does this fishery look like in 2034, '35 and '36. We talked extensively among our delegation, and we really feel like this is our only and best path forward to have this Work Group. We tried to put together what we could post haste, and that is what you saw in the motion. Was it well thought out?

It was thought out to the best of our ability. What we were trying to accomplish was listen to our public with empathy and try to understand what they were saying. There were mentions of hatchery, looking at possible shifts where spawning is occurring. Do we necessarily, the staff or myself as an individual agree with those? Not necessarily, but that is what our public is saying to us over and over and over again.

We were trying to include things that we were hearing from our public and incorporate that into the motion. At the same time there is some intermingling of technical items in there, and some items lend themselves more to policy development. There needs to be some triage done on that. I'm not sure exactly how to do it.

I hope there is a path forward, where this Board we can remove some things that are better under the purview of the Stock Assessment Subcommittee and the Technical Committee and maybe add some things for this Work Group. In addition to the things that are listed in there, there is the constituency of the Work Group.

Our intention again was to listen to the public. What we were hearing was, they are going to go down this pathway and they are going to have the same people in an insular way talking about the same issues, without really giving the public a chance to participate. It was an effort. Its intention was to make it more inclusive.

I'm not sure, because we all know once you get to a certain critical mass it becomes very difficult to balance, so I'm not sure what the best pathway therefore there is. Maybe it is something like the

most recent Menhaden Management Work Group, where we had excellent participation from the public and we made sure that the public that did attend engaged in those discussions, had ample opportunity to ask questions and comment.

I don't know what the solution is there, because that is a very delicate balance in terms of the total numbers you have and the representation that you have. Lastly the timeline. We're going to get a lot of new information coming forward. MRIP calibration will have potentially new information on release mortality. Natural mortality in the Chesapeake Bay, there is new research emerging there that may be built into the benchmark. New information is going to be coming forward incrementally. I don't know about the timeline; the benchmark being delivered potentially in May or August of 2027. It's not that far away, but maybe this starts this discussion, and maybe this group can continue. I'm not 100% sure.

I don't know that this is a mechanism for us to really, truly get that conversation across the finish line, so we can start talking about what this fishery is going to look like in the 2030s. But at the very least, I hope it's the start of that process. That was really what our intention was in New York. I guess, Mr. Chair, I'll stop there and hopefully that made sense to everybody.

CHAIR BATSAVAGE: That kind of laid out what we need to do here. Your perspective on this I think is the way to get things kicked off. Before I go to other Board members, and I think when we do, we'll need to establish what we want to hit first. I want to go to Emilie or the staff in general on the idea of possibly adding or removing tasks that are in the motion. That will probably help guide us later as we discuss how to handle this Work Group. Emilie.

MS. FRANKE: If the Board wanted to change the task list. You know I think if there was Board consensus around adding or removing a task it wouldn't need a motion. If there was not Board consensus or someone wanted a motion we could do it that way as well.

CHAIR BATSAVAGE: There is a lot here, and needless to say we are not going to be finalizing everything on this Work Group at this meeting. We'll continue on into the next one. But I think if we can at least start getting some ideas on the Work Group composition and the timing.

Build on that, think about it some more after this meeting and come back and drill down and possibly finalize things at the spring meeting will be great. I guess we'll start with any thoughts on Work Group composition. Marty pointed out some ideas on that in his comments, looking for others. I have Doug Grout, Jay McNamee and then John Clark.

MR. DOUGLAS E. GROUT: I'll try and provide my suggestions for this. A lot of this depends on how many people are going to step up to participate in this Work Group. In an ideal situation, I always find getting above a dozen people in a Work Group just becomes unmanageable. What I came up with is for industry representation we have an AP that we would try and solicit someone from the rec community, someone from the for-hire community that is on the AP, someone from the commercial fishery.

If we were not able to fill that out from the AP, we do have Commissioners that are fishermen, both commercial, for-hire that might be able to also fill that step. I was looking at 1 from each sector, I think because some of these tasks will involve Technical Committee and Stock Assessment Subcommittee that we would have the Technical Committee Chair and the Stock Assessment Subcommittee Chair.

Then from the Board I would offer as a suggestion trying to come up with one commissioner from an ideal situation from the Chesapeake Bay jurisdictions. One from the Delaware Bay jurisdictions, New York/Hudson, because those are three primary spawning areas. Then maybe someone from Southern New England, someone from Northern New England, and if you are willing

the Board Chair on this. That would come out being about 11 people, just if you're willing. But again, that would be an ideal distribution and scenario. It all depends on who we get willing to participate.

CHAIR BATSAVAGE: Thanks, Doug, I'll think about whether I want to be part of that. No, that's great, definitely get some ideas out on composition. That is definitely needed, and try to work through who all is going to be on here, because yes, you want the right representation but if you have too much it is hard to accomplish anything. Next up I have Jay McNamee.

DR. JASON McNAMEE: Thanks, Emilie, for kind of like summarizing all of that stuff. I was thinking about this Working Group and its like, what we are trying to do I think is impossible. It's overwhelming, I'll say it that way. First, I am going to offer a question. I'm not expecting an answer right away, but maybe it might be something when I'm done yammering away here someone could comment on.

I wondered like, you know this sort of thing. It feels, because it is so big and diverse across the coast. I was thinking about kind of like a multi-faceted process. You know the Working Group, I agree with Doug. You can't have it be gigantic, because you just can't. We might as well just kind of use the Board or something like that.

Yes, keeping it smaller I think makes sense, and it is challenging, because then we have to pick people, and we'll just have to work our way through that. I appreciated Marty's comment about the menhaden group. That seemed decent. Maybe there is some overlap between what Doug suggested and that we can kind of look up.

This multifaceted approach I'm talking about, facilitated workshops, surveys, probably like a collection of things that then feed into a core working group that kind of processes the information. I don't know that we have a version that we've done in recent history at least that does something like that.

I wondered if there might be an opportunity to communicate with the SESS. You know this is the sort of thing that Social Scientists think about in particular. There may be some strategy when you have a big enormous problem like this, but you need to like take action. There is probably like an optimal structure for doing that sort of thing that they might know about and help us with.

I just wanted to make sure that we're using that resource, getting some feedback from them. I like the idea of having a core working group, but then getting information from a broader spectrum. I will acknowledge that this is my second, if not more thing this week that I'm offering, that probably costs a lot of money and is probably not budgeted.

But sometimes its good to just get ideas out and apply the pragmatism afterwards how we can afford it or whatever. I think that could be good getting broad perspectives, but like in a structured, facilitated way, surveys and facilitated workshops feeding that into the Working Group, kind of like a hierarchical approach, trying to condense it down. Just a couple of thoughts from me.

CHAIR BATSAVAGE: Appreciate that. Next up I had John Clark.

MR. CLARK: Just kind of building on things that have been said by Doug and Jay. I agree with Doug about the size. I was wondering if perhaps it could be started more along the lines of the menhaden working group. I was fortunate enough to be the Chair of the Board when Marty chaired the Work Group, and that size seemed to work well, and having the meetings open to the public was a great way to get the input.

I'm just afraid having been through the Stakeholder Engagement Workshop last week for Horseshoe Crab that just choosing one person from each sector, because of the diversity of views out there within these sectors, that it is going to put a lot of pressure on those people who are chosen to sort of

represent such a wide range of views, or some of them may just want to represent their own view on the issues.

I was wondering if maybe start with a smaller group of the Board with the meetings open to the public. Then when we have some of the issues more focused, at that point then transition to a group that includes more of the public input. Just because I think it sounds rather unwieldly at this point.

CHAIR BATSAVAGE: David Borden.

MR. DAVID V.D. BORDEN: I'm going to kind of follow up on a couple of the previous comments, Jason's comment and also John's comment. One of the things that I am struggling with the most is the public participation process and how we integrate that. That to me is the most difficult thing. I think the rest of us can collectively figure out how to winnow this down to a workable group.

This follows on John's comment. I think it's kind of an impossibility to find one or two people or five people that are going to represent the interest of the recreational community up and down the coast, because it's all different. I mean you pick on a little tiny state of Rhode Island. The three of us would have difficulty picking one person in the recreational community to represent it.

One of the options that we've discussed a little bit among our delegation is this issue of facilitated workshop. There may be some merit in us considering having a facilitated workshop, where each of the states get to invite X number of individuals, whoever they think are the important people from their jurisdiction to attend a workshop.

Then basically, run through a whole series of issues, give them a briefing on stock status, what some of the projections look like going forward, what the current objectives are, the FMP. Then ask them to kind of consolidate their preferences, so we get information directly from the constituency.

Then feed that into the workgroup and let the workgroup kind of deal with it, in terms of how they fashion recommendations and options. I'm not saying that I'm wed to that idea, but I'm troubled by our inability to get information directly from the constituency, and that is one of the ways we could do it, with a facilitator.

CHAIR BATSAVAGE: Mike Luisi.

MR. MICHAEL LUISI: I think I'm thinking along the same lines as David, and I'll just offer my thoughts. The 12 number, the people. Twelve people, I think is a good number to try to strive for. Whether that is represented by folks around this table in addition of some AP members. In my mind I see it as, if we have a solid, 10-12 people who are considered the Working Group.

Maybe through this facilitated discussion over a period of time, that discussion could host different meetings that are all inclusive of the sector that we would be discussing. Maybe we as administrative folks bring a person or two with us, you know to make sure that they are there for that discussion if it is regarding the recreational fishery or the for-hire fishery, if that is the focus of that work group discussion.

But then that would also allow, you could open it to the public. But that public would be limited to that sector. Others can listen, but I think the participation would be focused on membership from up and down the coast, to affiliate with whatever sector it is they are representing, could offer that selected work group that feedback.

That work group can then be informed well enough to be able to have the conversations about the future, and what the expectations are, and what the true reality that we're staring down the barrel at right now is. Just some thoughts from me.

CHAIR BATSAVAGE: Any other thoughts on work group composition? We've got some similarities

and some differences, any ideas here? Again, we'll come back next meeting and try to narrow this down more. Just look for hands on that, but if not, yes, Roy Miller.

MR. MILLER: I just wanted to add to follow up on what Mike just said and Jay and John and Dave. Granted, having a workgroup over 11 is unwieldy, but you could form sub workgroups, if you will, on specific topics that require more diverse and general input, and they would report back to the main group. That might be one way to hold the overarching workgroup size down, and yet still get the input that you would need from the public in, and the scientific and management sectors.

CHAIR BATSAVAGE: Any other thoughts on that before we move on to some guidance on the timing and possibly the tasks? I guess we'll just kind of make sure we get staff the guidance they need here for this meeting and build upon it. Look for any guidance on, well we can concentrate on workgroup, is this for Work Group? Dave, I'll go to you right now and then that will kind of continue on.

MR. BORDEN: I'm going to defer to you. I just want to talk about economic aspects for a minute, and whether or not we're going to cover that. I might have some suggestions, but I'll defer to you. You handle that when you think it's appropriate in the discussion.

CHAIR BATSAVAGE: We'll handle it now.

MR. BORDEN: Okay, great, thank you very much, Mr. Chairman. My question is to the group here. Are we going to factor in some consideration of an economic? I totally understand, I would point out, we don't have an economist on staff. I mean this is an issue. If we're going to get into the weeds on this and get into the goals and objectives, there are economic consequences for the coastal communities up and down the coast, based on the strategies that we're going to discuss. How do we integrate that into the discussion or when do we integrate it? One of my suggestions would be, since we don't have an economist to deal with this and we have a Socioeconomic Committee that have economists on it. But one way to deal with it would be the staff could put together, and I brought the example of it.

At the annual meeting they put together this summary of economic input, the values of the fisheries up and down the coast, which I thought was incredibly useful and I thank the staff for doing it. Striped bass is included in that. There are a couple of studies that have looked at economic values of striped bass.

I'm not going to get into the weeds on those, but the values are in the billions. It is an extraordinarily valuable fishery, so how do we factor economics into this, or are we going to basically not consider economics, because the decisions we're going to make going forward are going to have economic implications.

My suggestion is that if people around the table want to consider economics as part of this, I think there is a logical starting point, given the fact we don't have economists on staff. NOAA does, in fact a lot of the data that went into the analysis that the staff put together came through the NOAA One Stop Shop economics program.

We could ask a representative of that program to come to a subsequent meeting, and basically talk to us about how they put together the numbers, what type of analyses they can do, that type of thing. It wouldn't put a burden on our own staff; we would basically get an update from NOAA on what are their capabilities and what type of analysis do they do?

CHAIR BATSAVAGE: Yes, that can definitely tie in to potential work group composition and maybe even the tasks that this work group is going to do, and have the help of economists to guide us on that. I saw Eric Reid's hand up.

MR. ERIC REID: To David's point, the value of the fishery is one thing, it's worth X amount of millions of billions of dollars. But there are certain segments of our stakeholders that really, it's understanding what the input costs are. I mean the cost to run a charterboat or a commercial boat, even a private boat flies through the roof, and the margins have become so small.

I mean that is why we talk about trip limits, because the margins are so small. If we're going to consider economics we should try to understand the change over time of input costs, because that is going to affect our stakeholders going forward. Economics is important, I like talking about money, sort of, other people's money, I suppose, not my own. But this is really developing policy going forward. I think that should be the critical focus. We understand the trend in the fishery right now of recruitment. We understand that and we have to be prepared for that. That is why we have this working group, and I thank Marty for doing it.

But we have to understand what we might be headed for, and be ready to deal with our policy decisions. Then all of this other stuff will be fine. As far as the composition of the working group. I was trying to figure out how David and Roy's ideas meet somewhere in the middle. I do agree that no more than 12 or at the most 15 people would work.

But I do agree that there is the ability to build a corporate pyramid and make that work. You know you've got sub groups and then you have the working groups, and then you have maybe "the working group." That's how we're going to best serve our stakeholders and ourselves. It's not impossible, I don't like the word impossible, it's going to be necessary. I don't care, it's not impossible, Mr. Phelps, Dr. Phelps or whatever his name was, but we can do it and we have to do it.

CHAIR BATSAVAGE: Thanks, yes, it is definitely kind of tying into the other items that staff need some guidance and feedback on is the timing of the Work Group, and maybe thinking about the task list as well. In preparing for the meeting think about the timing of this Work Group and the tasks, and when things would be available.

There is a potential this Work Group and possibly sub groups could be convened for a pretty long time, much longer than typical work groups that ASMFC Boards have. I think we need to keep in mind of that is just how much of a commitment could we expect from members of the Work Group from a time standpoint on this. I think that's going to be key to figuring out when we actually want this Work Group formed and start working on things.

I think this is kind of two-fold here. It's when do we want this Work Group to get started, and maybe also take a look at the list of items. Yes, I think we'll be kind of hitting the to be continued button on some of this, at least get some ideas out now. You know we can think about it over the coming months before we meet again in the spring. I just want to kick off some of that with guidance from any Board members on those items. Megan Ware.

MS. MEGAN WARE: Thanks, and I'll say thanks to Marty for your comments, and kind of at least centering us on how this came to be and what your vision is. When I look at the list, I'm seeing maybe two things that I think are more in the policy side of thing than the science. That would be the discard mortality study and understanding management implication for that and the hatchery task.

The other four seem very rooted in the assessment process and what we might get out of that or all that comes out of that is developed. I'm wondering if kind of the two more policy ones are easier ones to ramp on now. I want to be very conscious of how much we are asking of the Stock Assessment Committee right now and the workload we put on them, because that for me is the high priority is that 2027 Benchmark Stock Assessment. I don't want to jeopardize that in any way. I don't think that is what Marty is intending either. But I think that is a critical turning point or decision point, that assessment and what we get out of that. I think

there may be things we can get from that as the assessment is developed. But some of these I think are quite dependent on the outcome of that assessment.

CHAIR BATSAVAGE: Any other comments on timing and task list? Doug.

MR. BORDEN: I would agree with Megan that those are two things that at least this year the Working Group could work on and address. Some of the other things that we're going to get from the Technical and Stock Assessment Committee are pieces of information that we may need to use to look at.

One of our products is to look at updated goals and objectives in management beyond 2029, once we have that kind of information, we can then take that in. I think there is something that leads me to believe that this Work Group could start working. I don't know when that information would be available, but maybe this summer, maybe earlier, I don't know. That would be up to what staff and TC thinks when they can provide that information for us.

To me with that in mind, I think we do need to try and put together this working group. One of the suggestions I had for who, if we had this flood of people more than we could handle that wanted to be on this working group, then I think it would be the Chair and Vice-Chair working with staff would typically decide which people would be on it. Maybe using the guideline of what I put out for what would be our composition.

CHAIR BATSAVAGE: Next up I have Jay.

DR. McNAMEE: I'll third both Megan and Doug on those two tasks, the hatchery one and the discard mortality one feel like they are all connected, but those two feel like kind of unique and separable, things that can be discussed. The rest of them are like really interrelated, and I also agree with them, they are connected to the technical work that is already kind of going to go on.

This is maybe not helpful, but I was thinking, the real value of the Working Group, it's almost like they could interact with the Stock Assessment Committee, because there are these ideas. I think the Stock Assessment, Technical Committee, whoever is working, whichever technical body is working on each individual element.

You know they are kind of developing the tool, and the Working Group could say, hey. We know that you have this hammer. Can you make a refined cut in this piece of glass with that hammer, and they can say, no, no, you can't. It is that kind of interaction that will help guide the technical folks as to the types of things that the managers are interested in seeing from these different tools.

I guess the point it, I think they can all stay there. I think a lot of them are really highly overlapped, as far as what they are actually looking at. It's more of an opportunity to kind of guide some of the technical work that is going on or clarify what can and can't be done. Yes, you've got those two pieces, and then the rest is kind of like a blob of interrelated things that I think bouncing back and forth between the Working Group and the technical folks, I think could be a valuable approach there.

CHAIR BATSAVAGE: Dennis Abbott.

MR. DENNIS ABBOTT: Sitting here looking at things from my view, from 20,000 feet up and kind of from my simple point of view of things. I think I agree with everything that everyone has said, I have no disagreement with anything. But I think it is very important before we even start, that we set up priorities.

You know all the things that Emilie talked about, some of those are surely more important than others. I don't think we should task this Working Group with tackling all of these things. There have got to be some that are much more important than others. Like Roy Miller mentioned predation and invasive species and all of this business.

You know I view that as having a much higher value than looking into growing hatchery fisheries. Just from my point of view. I am also, not unclear, but a number of people have mentioned goals and objectives. I sit here and I say, what are our goals and objectives? Do we expect in 2031 that we're going to really be able to improve this stock?

Are we fooling ourselves? You know I really has that as a question in my mind. I think part of this Working Group really should provide some sort of an output that informs people with an understanding of where we are. I don't think we've done that enough. I think we're probably creating false expectations to tell people that things are going to get rosy somewhere down the road.

Doug Grout at other meetings and other folks have talked about, you know getting SSB up by 2029 is a goal of ours, and already admitting that down the road further we're not going to be better off. I mean the young of the year is telling us a bad story. I don't think there is anything that we're going to do is probably going to improve that. The outcome of this Working Group, we should be looking to provide a greater understanding of where we are.

Are we intending to just satisfy the public? I don't think so. Are we expecting to improve the condition of the stock through this Working Group? I question our ability to do that. We may get a better understanding of where we are and where we want to go. But I think that the first thing, to go back to what I said is, we have to set realistic priorities and then we have to be very clear in our goals and objectives, and message that to the public.

CHAIR BATSAVAGE: Thanks, Dennis, appreciate just trying to add some structure here and really try to answer some important questions. We're getting a lot of ideas on who is going to be on this, how we're going to approach these. I haven't heard much about maybe adding or removing anything. But as I mentioned, we will be discussing this further at the next meeting. Emilie, do you have any input? I also look to see if there is anything more you need from the Board on that. I'll go to Emilie, and then I have Matt Gates.

MS. FRANKE: Obviously, these questions about the Work Group are big questions, so didn't expect to answer them all today. I think from staff perspective, my plan ahead of the spring meeting. You know this was a very general memo, laying out some questions. I think for the spring meeting, based on all the guidance.

You know there are a couple different sort of paths for work group composition, maybe a couple different ways to think about the Work Group timeline based on some of this sort of policy versus science tasks. My plan for the spring meeting would be to provide another staff memo with sort of more specific options for the Board to think about.

You could compose the Work Group such like Option A, Option B, and we could sort of have two different timelines. Really provide more specific roadmaps for the Board to think through and maybe kind of pick one to go down at the spring meeting, so that is my plan right now.

CHAIR BATSAVAGE: That definitely adds a little clarity from my perspective on this. Matt Gates.

MR. MATTHEW GATES: Following up a little bit on what Dennis was talking about. We're going to have a little bit of a discussion about the stock assessment and reference points coming up. I think something that the working group could look at is, what are the possible changes to what the reference points might be. How is that going to impact our management?

Is that going to get us out of this cycle of constantly ratcheting down our rules, to try to maintain a stock that productivity is changing in? I guess I wanted to just get an idea of what those changes might look like, and how is that going to affect the management decisions we have going forward?

CHAIR BATSAVAGE: As promised, I will see if the public has any comments on this agenda item, before I'll do just one last look around the table and online, to see if any other Board members have any thoughts on these questions that staff are looking to kind of help refine this Work Group more. Marty.

MR. GARY: Before we depart from this topic, I just wanted to thank the Board members for some thoughtful dialogue on this, really appreciate it. I think I touched on this a little bit in October, when we put the motion on the table. I just wanted to share with you.

I think one of the blessings and privileges of knowing some of the people that were involved in arguably one of the most difficult decisions in fisheries management, shutting down a fishery for five years in Maryland. Some of those people are no longer with us, but what I was able to learn in those years afterwards talking to them.

What I think we're going to be challenged with is, so the lower level of abundance managing this fishery, and given in a manner that we don't lose access and connectivity to it. The sociocultural benefits, the economic benefits, we can maintain those without sacrificing conservation, the adequate and necessary conservation for the species is a tightrope to walk. But if those folks were still around, what they would tell you is, it sounded like a great conservation story, great success story, they shut it down for five years and it came back, because it was resilient. But they would also tell you there is a lot of collateral damage. The challenge is, how do you manage that and maintain the access and keep folks connected to that resource, because they care the most about it, the ones that are connected to it. I think that is just a theme that we need to consider as we go forward. I just wanted to share that.

CHAIR BATSAVAGE: Okay, I'm going to see if there are any members of the public who would like to provide some short comments on this agenda item. I see a couple online. First up is Julie Evans, and Julie and others, if you can keep your comments to two minutes or less that would be great, just so we can maintain our schedule this morning. They will go in the order that I see them online here, so Julie, you are up first.

MS. KERNS: Julie, you just need to unmute yourself, let's go to Tom then next, instead.

CHAIR BATSAVAGE: We'll go to Tom, and then see if Julie can get her audio to work, and also look for other hands in the process.

MS. KERNS: Tom, you just need to unmute yourself by clicking that red microphone button. We're going to go back to Julie Evans. Julie, you should be able to unmute yourself. Mr. Chair, neither person is unmuting themselves on their end, so I don't know what to do.

CHAIR BATSAVAGE: Sorry about the technical difficulties, but yes, in the interest of time we will have to move on. But the public is always able to contact their Board members in their states and provide their comments before the next meeting.

DISCUSS 2027 BENCHMARK STOCK ASSESSMENT

CHAIR BATSAVAGE: Moving on to the next agenda item is to Discuss the 2027 Benchmark Stock Assessment, and Katie Drew will have a presentation for us.

DR. KATIE DREW: I am here to relay some comments or requests from the Stock Assessment Subcommittee for guidance from the Board on biological reference points and spatial management, to help us guide our assessment. I think in a lot of ways this is maybe a little dry run for some of the stuff that the Board Work Group will be discussing in much more depth, once the assessment is complete.

But today I am going to be giving you a little background on the current biological reference points for striped bass, sort of the history of where

they came from and what our current reference points are. Then ask for Board guidance, or lay the stage for the Board input on biological reference points and some spatial management questions, and then give you the timeline of the next steps, including when we're looking to receive this information by. For our current reference points, just as a reminder so we're all in the same page.

Our SSB threshold is the estimate of female SSB, spawning stock biomass in 1995 from the most recent stock assessment. That value specifically is about 89,513 metric tons or 197 million pounds. The SSB target is 125% of that threshold value, which is about 111,892 metric tons or 247 million pounds. Our F threshold is the F rate that is needed for the SSB to stabilize at that SSB threshold in the long term, so about F equals 0.21. Basically, if we fish at F equals 0.21 in the long term, SSB will stabilize at the threshold, and similarly the target is the rate needed for SSB to stabilize at the SSB target in the long term, so 0.17 in current terms. Because the recruitment trigger was tripped in 2022, the F target and the F threshold calculations are using the low recruitment regime of about 2008 to 2023 for the calculations.

When we do not trip the trigger, we use a longer time series that includes historical periods of high recruitment, and as a result in those cases our F rate will be higher, that is you can sustain a higher level of fishing mortality and still reach the threshold and the target when you have that higher recruitment coming into the system in the future.

These target and threshold definitions for SSB were adopted through Amendment 6 in 2003. This was basically chosen because we had declared that the stock was rebuilt in 1995 based on number one, a projection model that indicated that female SSB in 1995 had reached the levels that we were estimating for 1960 to 1972, so the stock was rebuilt.

That was that '60 to '72 was our target range. Our stock assessment does not actually go back that far, but this projection model used the relationship between the Maryland JAI, which does go back that far and future SSB levels, in order to essentially predict what that SSB level was in1960 to '72, and that was the target for rebuilding, and do we were considered rebuilt at that point.

In addition, our spawning stock biomass indices showed an increase in proportion of Age 8+ of those mature female fish in the spawning population, indicating that we were seeing an expansion of the age structure and a more resilient spawning population. Under those conditions, 1995 was our threshold.

That was what the Board chose for Amendment 6. The Board then defined the target as 125% of the threshold, to reflect a desire to strive for a higher population size than was realized in 1995. The Board was happy with where we were in 1995. We did not want to be below that value, but we thought we could do better.

That target was sort of 125% was somewhat arbitrary, but it reflected the Board's goal of 1995 was good but we could do better. During this time Amendment 6 then set the F threshold at Fmsy of 0.41, and set the F target equal to 0.3, which was equivalent to an exploitation rate of 0.24%.

We had an F target that was lower than your full Fmsy estimate, but it was projected to provide a higher long-term yield and more protection to the stock, in terms of maintaining SSB. The Chesapeake Bay and the Albemarle Roanoke Region were given a lower F target, that 0.27 to account for the fact that these regions have a higher fishing pressure on immature fish in these nursery areas.

The SSB and the F reference points from Amendment 6 were not linked conceptually. They essentially came from two different models. We had our Fmsy or MSY based reference point on F side, and then this more historical empirical reference point on the SSB side. During the 2013 benchmark, projections indicated that if the

population were fished at that F threshold, in the long-term the population would decline below the SSB threshold, and the same for that target rate. If we fished at that F target, we would see the population decline below the SSB target, based on the history of recruitment that we have seen in the fishery so far. The F threshold and the F target were redefined during this assessment, so that fishing at the F reference point would allow the stock to reach that associated SSB reference point in the long term, given the historical recruitment that we had seen.

The TC and SAS essentially made that decision during the stock assessment, and chose to maintain the biological reference point definitions for SSB and change the definition for the F reference points for two main reasons. One was the emphasis in the FMP on maintaining stock size at or above that SSB target on increasing the abundance of that Age 15+ fish and maintaining a broad age structure.

In addition, there was a lot of uncertainty in the stock recruit relationship that is crucial to estimating that Fmsy reference point. The TC and the SAS essentially had morse confidence in our estimates of SSB as a target and threshold than we had in our estimates of MSY. After that 2013 assessment the Board adapted these new reference points in 2014 through Addendum IV. During the 2019 benchmark we came back to this issue again.

I think leading up to the 2019 benchmark I think we started sharing some concerns about the reference point values, are they too high, are they biologically plausible, et cetera. We came back to this to kind of reconsider. We explored other options, including spatial biological reference points that would align with the spatial model that was under development.

We looked at some SPR based reference points, like 40%SPR, and in the end none of this kind of worked out through the assessment process. The spatial model was not accepted for management use, so those spatial reference points were off the table. The SSB reference points associated with those single stock SPR reference points, like your F40% were much higher than the current SSB target, which we felt did not really address some of those concerns.

We maintained the current definition from the 2013 benchmark Addendum IV, and used those during the benchmark, and then maintained for current management use. As I've said, we've had some commissioners and stakeholder's express concerns that the current SSB reference points are too high, that they are not biologically attainable.

I just wanted to point out that SSB actually did exceed the target for several years, so from 2002 to 2005 our point estimates are above that target, and the confidence intervals on SSB include the target for about a 10-year period there from 2000 to 2010, which is in that sort of green/teal box on this plot.

You can see this is female SSB over time with the confidence intervals from the model, that red line, solid red line across is our SSB threshold. The dashed black line across is our SSB target, and so I'm highlighting that period of high SSB that encompass the target from 2000 to2010.

However, during this time period F was above that revised target in the end, in fact above the threshold for most of it. That spot is highlighting the same 2000 to 2010 period. At the time, obviously when we were doing the assessment during this time period, our F threshold was Fmsy that 0.41 value. We were below that 0.41. We were not considered overfishing at the time. It's only in looking back that we see our F was higher than would have allowed the population to achieve or maintain that SSB target and threshold in the long run. The other thing that I want to point out is that this period of high SSB and high F was supported by a series of strong year classes from 1993 to 2003.

Those are highlighted in yellow on this graph here, so these are the Age 1 estimates from the assessment model, and you can see we had a series

of recruitment events that were above that average long-term recruitment over the time series. That fed into the stock highlighting the 2000 to 2010 period of our high SSB and high fishing mortality.

We had a series of strong year classes feeding into that to support the SSB levels that we were seeing and the F levels that we were seeing. Subsequently, as you can see, our recruitment regime has changed. While prior to about 2003 to 2008 we had more recruitment events above the average then below it.

Right now, we are in a period where most of our recruitment events are below that long term average. While the SSB target is still attainable, the F rate required to do so may not be accessible to managers and stakeholders under the current recruitment levels. During this time of high SSB and high F we also had a high recruitment to feed into and support SSB and support a higher level of fishing mortality.

We do not have that level of recruitment currently at the moment, and so we are estimating a lower fishing mortality target and threshold. Depending on how recruitment goes into the future that threshold may change and come down even lower. We are exploring other reference point definitions to specifically address TOR #6.

This discussion around, you know that managers and stakeholders had about reference points is certainly in our mind as we go forward with this. To develop biological reference points that best address managers objectives, the SAS is seeking guidance on two main topics. How does the Board want the balance essentially preserving SSB versus allowing fishing?

Then what is the Board thinking about from a spatial management framework? To be clear, we do not need by May for you guys to come to consensus on these issues, and we don't need you to pick a specific reference point definition at this point. You guys will have to at some point in the future. But basically, right now what we are looking for by the spring meeting is a range of opinions and factors that the Board considers important for managing this species.

We can sort of understand the area that we have to work with, what is the Board concerned about? We can maybe develop tools that will allow the Board to evaluate these tradeoffs more quantitatively. But we want to provide things that the Board would like to see, so that they can be peer reviewed.

We would like to sort of avoid things that the Board is not interested in, and not waste our time on that if it is a nonstarter for management. Like I said, you don't have to come to consensus if some of the Board is very much in favor of a certain approach and the other half of the Board does not. We can explore both of them, and then you guys can fight that out sometime down the road. A little more detail in what we're actually looking for here. Again, as I was saying, there is a tradeoff between preserving SSB and allowing fishing mortality. If you have higher F reference points that will lead to associated lower SSB in the long term. If we want to achieve a higher SSB that will require a lower fishing mortality, especially during a period of low recruitment that we see now.

Lowering the SSB reference point will likely allow for a higher fishing mortality target and threshold. I think it depends on sort of our assumptions about recruitment going in, but ideally lowering the SSB reference points will allow for a higher F target and threshold. But this will not necessarily increase catch.

SSB is not just valuable as these are the spawning fish, yes. But these are also the larger fish in the ocean region. A lower SSB does mean lower abundance of 28 inch+ fish in general, and therefore potentially lower catch rates and lower encounter rates in the ocean region. Just lowering that threshold and saying okay, we're going to loosen up regulations, does not mean that you will be able to, again return to the catch rates that we saw during 2003 through 2010.

It would be helpful to receive input on things like, you know what is the preferred balance between SSB and F. The relative importance of things like maximizing yield versus maximizing catch rates for the availability of trophy size fish. What is an acceptable level of risk when it comes to preventing stock collapse?

How important is it to maintain SSB, so that when environmental conditions do become favorable, we have a strong SSB to contribute, jump start future recruitment. Are there alternative metrics for stock health such as total abundance or abundance of specific size or age classes instead of female SSB?

I folded these two ones at the bottom that maybe are low hanging fruit for the Board to consider, in terms of is there a preferred historical time period for our F reference points or for SSB reference points? That is right now we've sort of linked to that 1995 value. Is there an alternative point where the Board was satisfied or dissatisfied with fishery performance that we could consider as a target or a threshold?

Similarly, if we want to switch to a more, we like the F rate during this time period and we would like to have that as our target and threshold, and then take the lower SSB target and threshold that is associated with that. Is there a lower limit on that SSB level relative to 1995 levels or based on a historical preferred period? There are options for going back to an empirical reference point that are not specifically tied to 1995 but could be tied to other metrics that the Board is interested in.

The other question that we have for the Board is related to biological reference points and spatial management. We are continuing development of a spatial model. Hopefully it will work out for the peer review process, maybe it won't. We can't say at this point. But as a reminder, we currently have a single coastwide set of reference points, but we have separate regional management regimes. As we work on this spatial model, this will provide additional questions or challenges for management of how do you manage spatially. It will provide at least maybe when you get to those challenges you can say more options for the Board to consider. Number 1, is the Board actually interested in spatial reference points, that is having specific targets and thresholds by region to evaluate stock status against, or would the Board prefer to keep using sort of a coastwide meta population reference point and use spatial management regimes to attempt to achieve those targets?

Something to consider about this is, okay what happens when one region exceeds the F threshold but another region does not? If the Chesapeake Bay exceeds the F threshold but the ocean is below their F threshold, does only one region take a reduction or if one region was overfishing two years prior to the assessment, but has now dropped below the threshold, and the one region is overfishing now.

Does that region that is overfishing in the terminal year of the assessment take the reduction and does the region that was overfishing prior to the terminal year get a pass? I think these are things to think about, in terms of how we would want to use a spatial reference point in an actual management framework versus using a single reference point and using other management tools to manage specific regimes to address those regional needs.

One maybe more specific question is, would a Delaware/Chesapeake Bay Region be acceptable to the Board or would the Board prefer to see Chesapeake Bay distinct from other regions the way it is now. Delaware Bay and Chesapeake Bay, the genetic tools that we have now cannot really find a difference between these two fish from these two regions.

There appears to be a single genetic Chesapeake/Delaware Bay stock. This is likely due to one recolonization from the Chesapeake Bay after the Delaware Bay stock was reduced to extremely low levels, and also, we've seen now with our acoustic tagging frequent movement of both

juvenile and adult fish between the Chesapeake Bay and the Delaware Bay using that canal.

There is a lot more genetic mixing than there used to be of the spawning population and of the juveniles. A single region may be more biologically realistic. But we are not locked into that from a management perspective, we are not locked into that from an assessment perspective. We are going to try modeling these separately, but we're not sure that we have the data to actually separate these two regions out.

If we cannot develop a three-stock model or a three-region model, is the Board interested in pooling Delaware/Chesapeake Bay together, or would the Board like to see Chesapeake Bay separate and pool Delaware Bay with the Hudson River for this ocean fleet that we currently use now? Similarly, is the Board interested in developing biological reference points for the Hudson River as a separate stock or a separate region, if it is supported by the data?

These are the questions that we're putting out to you. I think we could have maybe you guys can spitball a little bit if you have time now. But the most important part is that we receive some guidance to the SAS during the May Spring meeting. We will be having a methods workshop in March to sort of start the discussion on our, well hopefully continue and finalize some of our modeling decisions. But we don't really need the reference point stuff until later in the summer through our likely August 2026 Assessment Workshop, and again as we've discussed, we are on track to be reviewed through the Northeast Fishery Science Center Spring Research Track in 2027, which is likely going to be March of 2027. Ideally, we can prese the reference points and maybe some options, or maybe just some reference point methodology to the Peer Review Panel for approval.

When we come back to the Board with this assessment in spring or summer of 2027, you'll receive the reference point options that include some of the things that you are concerned about for your consideration and/or for the Work Group's consideration, as we move forward after that. At that point I'm happy to take questions.

PROVIDE GUIDANCE TO STOCK ASSESSMENT SUBCOMMITTEE ON BIOLOGICAL REFERENCE POINTS AND SPATIAL MANAGEMENT

CHAIR BATSAVAGE: As Katie mentioned, the feedback from the Board is really needed at the Spring Meeting. The presentation really kind of lays out just the history of the reference points and just some thoughts about tradeoffs, as far as exploring different reference point options.

I really don't have time to kind of get into the ideas today, but this is definitely food for thought for the Board members to think about and present their ideas in May. But for now, I'll see if there are any questions on the presentation that help folks in the coming months. We have John Clark.

MR. CLARK: Thank you, Katie, for another masterful presentation of a lot of complicated information that makes it clear and yet, wow! That's a lot there. I'm going to just start with a couple simple questions or a simple question. You said that the Amendment 6 target F of 0.3 with an exploitation rate of 24%. What is the current exploitation rate?

DR. DREW: We estimate or we are projecting I believe that F in 2024 is going to be about 0.014, the exploitation rate is slightly different than the F rate specifically. But I think in that range it would be close to a 12 or 14% exploitation rate.

CHAIR BATSAVAGE: Next up is Jay McNamee.

DR. McNAMEE: Thanks, Katie, great synthesis of all that. My first question, I have ideas but we're not doing that today, is that correct. Okay, but I do have a question, and that is the concept of spatial BRPs is interesting. I think there will be a lot of interest about that with the Board. However, I am

thinking back, and I think it was black sea bass where this came up as an element in the Peer Review, where we have, I think, this is like in my head and it was a long time ago.

At least one of the peer reviewers was pretty dogmatic about the fact that you could not parse the reference points out in the way that we were sort of intending. You know the idea was there is one F on this stock, you can't like have five Fs or three Fs or whatever. I just offer that maybe to temper expectations more than anything else.

I think this notion of we have a spatial model that is awesome, we can now get an F of Chesapeake and a F for the Northern Region and the Ocean and like all of these things we might be thinking about. It's probably more nuanced than that, but Katie, I guess my question is, have you guys thought about that? Potentially we've evolved our thinking in that and I'm just not caught up on that. Maybe you think there is a method for kind of developing spatially explicit like F rates for instance.

DR. DREW: Yes, great question, I think perhaps we had the same reviewer, because the 2019 benchmark there was also a reviewer who was like, I don't think the spatial F reference point is appropriate. We disagreed with that. But it is something in our mind of, if we go forward, if the Board is interested in that, I think we would have to think very carefully about how we would use this, how we would define it and what does that mean for the overall health of the stock.

I think you can allocate F in a management framework, and I think having a single reference point is an implicit allocation of F into that reference point. But obviously reviewers can disagree with me. But I think the SAS has, that is in the forefront of the SASs mind that reviewers have been critical of that in the past.

If the Board is interested in that, I think we would put a lot of work and time into making sure it was justifiable and supportable. If the Board is not interested in that and recognizes some of the challenges of that, from a management standpoint. Then I think we would put more emphasis on how to develop a robust coastwide single reference point, and then how to develop management regimes that could support that more spatially.

CHAIR BATSAVAGE: Next up I have Bill Hyatt and after that Emerson Hasbrouck online.

MR. WILLIAM A. HYATT: One of the things that sort of constantly eats at me with this discussion is, kind of trying to visualize what the baseline would look like going forward, given where we are now. Our fishing effort right now, our fishing mortality, fishery exploitation is low. Our regulations are very restrictive.

We've had discussions at these meetings in the past where we've asked for the current situation be modeled out to, I think 2035. What we've seen is a curve that sort of peaks and then dips. But it is still pointed in that direction. I have difficulty sort of thinking about what direction we should be going, without having sort of a better feel for where we would level off, given our current highly restrictive management.

I mean you've described a lot of the tradeoffs that we're going to need to consider. I am trying to visualize that. Those tradeoffs from where? From what baseline, what foundation? I am wondering if you can give us, understanding that you haven't modeled out, understanding that there is a lot of uncertainty. Just given your experience with dealing with these types of models and situations and projections, where it looks like it would level off under the current highly restrictive regime using the current biological reference points.

DR. DREW: I don't think I can provide that right now, in terms of you know the projections that we did out to 2035, as you've noted. It really depends on what recruitment is going to be like going into the future. If we use that 2008 to 2023 range, which does include a series of very low reference points at the end, of recruitment events at the end,

but also includes the 2015- and 2011-year classes as like rare events in there. You will at our current F level actually go beyond the SSB target. However, the projections where we just use, if we assume recruitment from 2019 to 2024, the most recent five years, that is our long-term average. That is where you start going down. Basically, we did not project out, but it had not stabilized between the target and the threshold.

I think it would likely go below our current threshold. That is under our current path, but the very low recruitment we've seen in the last five years. I think there is definitely a question of what is recruitment going to be like in the next ten years. We have built in a series of very weak year classes, so SSB does not have a lot to work on right now.

But is this a new normal? Are we going to see maybe the occasional spike of a very strong year class that will help sustain it into the future? That I think is really the challenging part and probably where the Board needs to think about is like, okay what level of SSB would you be happy with? What is acceptable in order not to restrict further?

MR. HYATT: If I can follow up. Critically, I don't see any reason to assume anything but that this 2019 current recruitment levels are anything but the new normal. I'm kind of thinking that any decisions relative to the tradeoffs that you're talking about would need to be made based on the assumption of a spawning stock biomass that is driven by that level of recruitment, and you're saying it's below the threshold.

DR. DREW: As you pointed out, it was going down it had not like so from 2029 and beyond. If we maintain the 2024 levels, which is slightly higher than what we are predicting for '25 or where things may go. F may continue to decline as this population declines and availability is less, and there is less interest and effort goes down. But yes, at those levels we had not projected it out far enough to see where it would stabilize. But the downward trend is not positive on that front.

MR. HYATT: I am very interested in knowing how far below the threshold that scenario would likely stabilize.

CHAIR BATSAVAGE: Next up I have Emerson Hasbrouck and then Joe Cimino.

MR. EMERSON C. HASBROUCK: Thank you, Katie, for that extensive presentation. I just wanted to follow up a little bit on the issue that Jay raised just a couple of minutes ago on spatial BRPs. Do we have any examples of where spatial BRPs are currently being used? If I'm following it correctly it was rejected for black sea bass. Essentially, are there any other species that successfully utilize spatial BRPs?

DR. DREW: I would say not within the Commission's framework or the Federal framework that I am aware of, or at least not for stocks where you have mixing between the stocks. But obviously we have separate reference points for tautog, and those are not necessarily that the mixing is extremely limited between those stocks.

But we have spatial reference points for them because we treat them as separate stocks. But yes, this is definitely a challenge, and it's something that if the Board was interested in, I think we would have to do a much deeper dive on the potential for this as an actual management tool, and see if there is any precedent to support it.

CHAIR BATSAVAGE: Joe Cimino.

MR. JOE CIMINO: Thank you, Katie, and I apologize, because I don't know how good a question this may be. I don't disagree with what Bill was saying that maybe we need to assume poor recruitment, as in using the most recent five years. But can you give us a sense of how dangerous it might be to assume that and then the opposite happens and we do have another 2015-year class or something like that?

What is the danger of ignoring the fact that we may get a strong class coming in?

DR. DREW: I think the danger would be that if we, I guess essentially reverse track of, instead of aiming for an SSB and aligning your F rate with that SSB and your recruitment assumptions. If we sort of instead try to aim for an F rate, I think the danger is that you would then allow that single strong year class as it comes through to be essentially hacked down before it has a chance to fully contribute to the population, and support the population.

If we are allowing that higher F rate then that means that strong year classes coming through are going to get hit as well. I think striped bass seems to have a life history where they are slow to mature. They are not fully mature until they are about Age 8. But they live up to 30 years. There is a sort of a life history strategy of surviving long enough so that you spawn and hit good conditions, and that you can maintain with that low natural mortality rate.

You know, a single year class or a single couple of year classes can help support that SSB. We are rebuilding essentially on the back of maybe two above average year classes here. I think allowing the staff to, or putting yourself in the position where a single strong year class comes through and is immediately harvested.

Maybe reduces some of the resiliency and sort of goes against the strategy that striped bass have, which is not lay a ton of eggs every year everywhere and have a lot of recruitment, a lot of productivity and turnover. It's more get all your cards lined up, get all your dominos in a row. Then when the right conditions hit you can sustain yourself in the long term. But I think that is something we could look at, in terms of like that question about what is the risk of stock collapse that the Board is comfortable with, et cetera, in as we develop this assessment further.

CHAIR BATSAVAGE: Last call for any questions. We'll be discussing this again at the May meeting. I think just in the interest time, and thank you, Katie. Yes, I think this is going to be really helpful for the Board to provide guidance at the next meeting.

NOAA FISHERIES REPORT ON CONSIDERATIONS FOR AQUACULTURE OF ATLANTIC STRIPED BASS

CHAIR BATSAVAGE: We'll move on to the next agenda item, which is a NOAA Fisheries report on Considerations for Aquaculture of Atlantic Striped Bass. We have Danielle Blacklock from NOAA Fisheries to give that presentation.

MS. DANIELLE BLACKLOCK: Good morning, everyone, thank you Mr. Chair. I am happy to be back with some of you again. I was here in 2024 with the Policy Board and this is the next step in our conversation as a result of that. Just to frame a little bit of why I am here talking to you about aquaculture. The U.S. imports about 15 billion dollars' worth of farmed seafood every year. That farmed seafood is coming from countries that we have no control over their rules, regulations and impact. It creates a real opportunity for domestic aquaculture to grow, because we know we have a marketplace that is needing more seafood. This has been acknowledged by the Trump administration through two executive orders. On the right-hand side, we have Executive Order 1391. You can consider this the Executive Order that has been completed.

This came out in 2020, it called for a whole host of aquaculture related activities, and we have done them. There is one that is still underway, which is identification of aquaculture opportunity areas. We have identified aquaculture opportunity areas in the Gulf of America and in Southern California. We are actively working hand in hand with the state of Alaska to identify areas of opportunity in the state waters of Alaska.

We anticipate that we will continue to move around the country. The Executive Order on the left, Executive Order 14276 calls for restoring American seafood competitiveness. This has a lot of wild

harvest drivers in it, but it also calls for an America First seafood strategy, which asks for us to increase domestic aquaculture production and create more marketing and export opportunities.

Those are backdrop drivers that bring us to today. Why striped bass? Well, there are a number of reasons. One is we know a lot about striped bass. We know enough that in 2021 there was an entire journal special issue on aquaculture of striped bass. It is a species that has been farmed for a long time, and we have great information feeding into the knowledge base. We also at NOAA have been doing over the past eight years a process of identifying top marine candidate species.

There are 21, 22, depending upon who you ask, species that are ready for commercialization in the United States in marine waters. Well, it is really hard to bring 22 species online at the same time. We're looking to prioritize those and come up with the top few that really have technoeconomic possibilities and invest heavily in them.

This process has brought us through meetings with constituents, industry, as well as academia that are actively researching all of these. Through voting and process of prioritizing all of these species, Atlantic striped bass has consistently risen to the top as a candidate species of interest. Here you can see that it is ranked Number 3. Why it is becoming more and more of interest is because the research that has been done.

We are now in generation 8 of selected breeding, and it grows significantly faster than hybrid striped bass. Hybrid striped bass is what you're used to thinking of that you think about farmed striped bass, which is a mix between Atlantic striped bass and white bass. Well, Atlantic striped bass has a higher price point. It has a different marketplace, because hybrid striped bass is typically sold as a whole fish, and Atlantic striped bass farmed or wild is typically sold as a fillet.

But the market value is so much higher that we are watching hybrid striped bass farms switch to Atlantic striped bass. This is a reminder that I've talked to some of you before, although it was a different board. The goal here is to balance aquaculture development with protection of wild striped bass populations and the fisheries they support. It is essential for making sure the resilience of this iconic species. I grew up in Massachusetts. I would be disowned if I put striped bass at risk. My family goes out and fishes for striped bass. Just know that my roots are true when I have this conversation with you. What I flagged in 2024 is still true, that Atlantic striped bass is being farmed and it's entering our markets today. It's just not coming from the Atlantic seaboard, it's not coming from the federal waters along the Atlantic, of course, because of the moratorium on possession.

When we had the conversation in 2024, there were a number of issues that were raised by the Policy Board, concerns about illegal harvest and enforcement; Ocean use conflicts, economic feasibility, market competition, aquatic animal health and disease, environmental impacts and escapement and genetics.

We were asked for a white paper. In your supplemental materials you have a draft of that white paper at this meeting. We have gone through those lists of issues, and given you what the risks are, what the state of the science currently is, and what mitigation strategies could be employed should there be interest in opening the federal waters of the U.S. EEZ along the Atlantic Coast.

I'm going to walk you through in brief some of the tools that we've built for each of these areas, and ways that things could be done, although the paper is much more in depth. The first issue that was raised was enforcement. This is one that we know and have a lot of tools to make sure that wild harvested Atlantic striped bass is not intermixed with farmed striped bass.

A number of states already have provisions that protect that, and make sure that is not a challenge; Maine, New Hampshire, Massachusetts, North Carolina and Virginia also had a very clear rule. This can be done through a number of different methods. Dockside tagging seems to be the one of most interest and ease. But there are a number of other ways that this could be done as well.

Ocean Use Conflict Considerations. This is where NOAA has extraordinary expertise, and I don't use the word extraordinary lightly. We have through the National Centers of Coastal and Ocean Science a team of GIS specialists, and the amounts of data that they use is unbelievable. They use roughly 200 to 300 datasets.

Each dataset is a different type of fishery and where the folks are fishing or where are the endangered species or where are the marine mammals, or what does the bottom look like there. All of these layers on top of each other give us incredible intelligence about how to put in farms, stay out of the way, and minimize impact.

This is the siting. This Atlas is how much data goes into knowing where farms should go. This is hundreds and hundreds of maps laid on top of each other that show us where the right place is for aquaculture to grow could be. We have a powerhouse that can help support industry, regardless of what they are farming. We are the go-to house for all things siting analysis and marine spatial planning.

We have yet to have an applicant for federal waters farming not come to us and say, can you please place my farm. We actually ran an analysis in between 2024 and today for you all. To start looking at where Atlantic striped bass might be economically viable along the Atlantic seaboard. Just because they swim up and down the coast doesn't mean it makes sense to put a farm anywhere up and down the coast. Anywhere below 15 degrees C for extended period of time and the fish don't thrive. This temperature map, this color map is basically a temperature map. It shows that we're not sure that there is economic viability for Atlantic striped bass north of North Carolina. Farms north of North Carolina might have more difficulty getting the return on investment that they would expect.

This is an active area of research that our team is doing right now. But that is new science since the last time I was here. I talked a little bit about markets and economic considerations. From the standpoint of farmers, it's a species of interest because it grows quickly to make good money on it, and because there is an existing marketplace.

That also on the other side can be of concern. There is an existing marketplace and we don't want it flooded. What aquaculture could bring to this is consistent flow, not flooding. It's not in any farmer's best interest to flood a market. What we see with farms is delivery of the same amount every week.

It keeps it on menus, it keeps it in market places, it keeps it in the vernacular of people, it keeps in on grocery store shelves. That then creates an opportunity to grow the marketplace. That is what we have seen with other farmed species that have come online, is that the market has actually grown because of the consistent delivery.

Disease, when it comes to disease in fish nobody wants it. It is the nightmare of the farmer, it is the nightmare of the regulator, it is very scary to everyone involved. The way that in the United States typically we deal with disease is prevention. We have a lot of rules and regulations about stocking density, overcrowding, water flow.

All of these things are managed to make sure that the fish have the highest level of ability to stay healthy. In addition, we create vaccines. We actively are developing vaccines right now for sablefish in our Northwest Fishery Science Center, to make sure that they don't become ill. We are an agency of prevention and that is where I would anticipate anything goes with Atlantic striped bass.

There are very few therapeutants available. Anything that is used in the marine environment has to be done so under oversight of FDA. It is extremely rare to use antibiotics. But it is still a concern, and it is something that we would have to work on for Atlantic striped bass. Environmental Impact Considerations, this is another area where we have significantly more knowledge now and tools than we did even five years ago.

What I'm hoping you walk away with is the understanding that there are tools that could be deployed for Atlantic striped bass that didn't exist five years ago. We now have the ability to model an entire farm in the water, in the location that it would be, and understand where all of the effluent would go.

This takes data on fecal settling rates, feed settling rates, digestibility. It takes a lot of data to go into a model here, to actually have something meaningful come out the other end. But we've built that body of knowledge for a whole host of species, so we can model a farm and know, what's it going to do to the bottom? How do we make sure that farm is invisible when it comes to water quality 10 meters away from the farm? Ten meter downstream, I don't want to know that that farm existed. We have farms in the United States today that meet that standard.

It is not a standard, to be clear, but they meet that where the farm is completely invisible 10 meters away. We have the ability to model all of this and see what the bottom would look like, see what the water quality would look like, and they are required for EPA permits for any farm that has effluence, so any finfish farm.

Our scientists do the modeling that then feed into the EPA permits that are required. Another consideration that was raised in 2024 is genetic risk. Genetic risk is important. We have to make sure that the caught specifics in the wild are not impacted by the genetics of the farmed population, especially when there has been selective breeding.

A lot of farms currently are applying, not for striped bass but in other species, are applying for just F-1s, right having wild broodstock. That is great if you can make money doing that, but often like every other protein that we eat that we farm, selective breeding is critical to be able to grow fish faster, have them be meatier, lighter skeletons, all of that, lower food intake.

The way that we can protect the wild population, there is a whole host of tools in the toolbox. We have everything from many salmon farms are female only. That is not 100% right, females can still put off eggs. Then there are tools like triploidy, where you make a fish have three chromosomes so that they are sterile.

That has a 99% effectiveness rate. It's not 100. But now there is new technology that has come online that we are using in other species. It has not been applied to striped bass yet, which is 100% effective. Through genetic knockdown G-knockdown technologies, we have the ability to just make them not grow gonads, 100% effectiveness.

Now again, we have not done that for Atlantic striped bass yet. That research would take 4 to 7 years maybe, but the tool is there. We could make sterile Atlantic striped bass. Another tool that we have is better understanding what the potential impact would be through genetic risk assessments.

We have a team of modelers again, in our Southwest Fishery Science Center that their energy and expertise is on genetic modeling. We again can put a farm in the water, know what kind of species it is, you need to know what the population outside is. Is it a big population, small population? It's actually arithmetic, not just big or small that we use. You can model how much risk there is. You can think fundamentally it's pretty basic.

If you have a small population and a net, and a huge population outside, the risk is probably not very high of there being any challenges or changes in the

external population. On the converse of that, if you have a big farm and a small wild population, the genetic risk becomes much higher, if you're not putting in sterile fish. But we have the ability to actually model that and give numbers of here's what you are looking at of potential changes in a wild population. Again, those models are only needed if the fish are not sterile. Here is more on the sterility and triploidy. I jumped the gun in telling you about the work that we're doing. We're also looking at this for sablefish. I had talked about the fact that we're developing vaccines for sablefish. We're also looking at sterility.

In the final piece on genetics is, genetics become a risk not only from gametes, potentially, but also from escapes, right? We don't want any escapes. We don't want spillage, which is just a couple of fish every time you are feeding or treating or anything like that. You also don't want a catastrophic event where the whole population is released at once.

We have also heavily invested in, as has the industry, in engineering for offshore, to make sure that you are building things in a robust nature, so that they can handle extreme weather. We're seeing sinking cages as becoming more of the norm. Things aren't staying at the surface the way they used to, so that you can get under the waves and under the swell.

We have in-house engineers that are working with external engineers, that are working with academic engineers, that are working with international engineers on actually developing guidelines and standards for offshore engineering for the United States. We anticipate there will be standards coming online in the next couple of years.

Finally, a lot of that backdrop of the science tools was not striped bass specific. But it started with, we know a lot about Atlantic striped bass. One of the ways that we know a lot about Atlantic striped bass is that NOAA has heavily invested in Atlantic striped bass research. It's not done in our labs, its' done through partnership with Sea Grant.

One of the major contributors to this body of knowledge is Striper Hub. It would be ludicrous for me to sit here and not mention them. They are a collaboration led out of NC State, and they are really the leading edge in research on Atlantic striped bass. Their research is currently being commercially farmed in the United States.

I mentioned this in 2024. It has only grown. There are applications in the Gulf of America for Atlantic striped bass that will use their eighth generation, ninth generation by the time they get there. There is also a number of farms on land that are farming Atlantic stripe bass. We're actually seeing in this cold snap a number of the farms in Texas, this is all anecdotal.

A number of the farms in Texas that farm red drum are seeing mortalities, because it is so cold. But a number of them have already switched to farming Atlantic striped bass, and the stripers are surviving. It will be interesting to see if that makes more switches in the future. That again is anecdotal but of interest. There is also Atlantic striped bass being grown in RAS facilities that is more experimental than commercial at this point.

But this organization The Striper Hub is already doing selective breeding specific for recirculating aquaculture. As a reminder there are a suite of constraints. You know that there is a moratorium on possession in federal waters. That has a simple administrative fix but a much bigger conversation behind it. The signing of papers and moving papers is simple, but a bigger conversation. But there are also other challenges. There are challenges in getting farms in the water around the country. The permitting takes a long time. We are more coordinated than we have every been. We have these tools now. I mentioned the tools for understanding effluence and water quality modeling and benthic sedimentation rates and all of that. We didn't have that five years ago, but permits required it.

We have these tools that we've built to inform the permitting process. It's getting easier, we're going to start seeing more and more farms in the offshore environments. But it still is difficult. With that, I think we are up to next steps. I mentioned at the beginning that the memo that is in your supplemental materials was given to you as a draft. That is because the memo is for you.

We need to know that it is meeting your needs and it has met the mark. We don't have any official timeline, so I would leave that to Mr. Chairman of whether you want time to think about it and give us comments in writing, whether you want to have another conversation at your next meeting. The document was built and drafted for you to meet your needs based on the considerations that were elevated in 2024, and we're happy to continue to modify it, to make sure that it is meeting the mark. Thank you.

CHAIR BATSAVAGE: Thank you, Danielle. I will look for any questions and comments, and also to what Danielle asked for is further feedback from this Board, whether it's in the form of written comments or discuss this at a further meeting. Take all the questions, comments ands those points that she asked all at one time. Let's see a show of hands. I've got John Clark, Roy Miller and Joe Grist.

MR. CLARK: Thank you for the presentation, Danielle, it's really interesting. Just curious about the genetic strain that grows faster than a hybrid. That's pretty amazing. That is just selective breeding that's not genetic engineering, okay. How long does it take to grow to the market size of 3 to 7 pounds for these?

MS. BLACKLOCK: Eighteen months.

MR. CLARK: Wow that's fast!

MS. BLACKLOCK: Yes, I didn't say it on a mic, I just want to make sure people online can hear that it is not genetic engineered. It is absolutely selective breeding, and the genome, there is very little genetic difference, but it's showing these dramatic genes. It's quite significant.

MR. CLARK: What is the estimated capital outlay to start one of these farms, and do you have people that are interested in growing this on the Atlantic?

MS. BLACKLOCK: We do not have any active applications along the Atlantic. We do have active applications in the Gulf. I think that that is in part because people are knowledgeable that there is a prohibition on possession. That could be playing in. The capital outlay is something that we are looking to actually model a bit more, to better understand.

So far, the applications that are putting in are too small in number for me to share, it would be business proprietary information. But it's a significant cost to be able to go offshore into federal waters. We're looking at a slower return on investment, because the initial capital expenses are generally quite high.

MR. CLARK: Would you say millions rather than thousands or hundreds of thousands?

MS. BLACKLOCK: Yes, Sir.

CHAIR BATSAVAGE: Roy Miller.

MR. MILLER: Thank you, Danielle, for the fascinating presentation. I could ask lots of questions, but I just wanted to ask one for now and that is concerning the sources of broodstock. That was a major impediment to a hybrid and purebred striped bass aquaculture back in the 1990s, when people that wanted to get into this business were relying on live natural broodstock from the environment.

They needed permits from those of us in regulatory agencies, in order to collect these striped bass. What is the state of the art now, with regard to sources of broodstock? Can you avoid that bottleneck of having to capture wild females or males?

MS. BLACKLOCK: The state of the art now is what is happening at Striper Hub, which is on Generation 8, working towards Generation 9. They haven't had new broodstock in decades. I would consider that no longer a bottleneck. What would be a bottleneck would be scalability of what is currently research production into commercial production. Housing broodstock as you go down the generation lines becomes a large investment. I would say that that is more where the rubber meets the road today.

CHAIR BATSAVAGE: Joe Grist.

MR. GRIST: Thank you, Ms. Blacklock, for the presentation. Very interesting, the science is really intriguing, what you're talking about. But I have a concern with what is being promoted here, in that this almost sounds like we're popping up the next Walmart in the ocean versus all of our generational traditional inland fishery and families, and mom and pops that depend on striped bass harvest and the price point they get to survive through the year.

This sounds like an operation that comes in. This could be a huge risk to the individual watermen that are out here in the various states that depend on this as part of their business plan during the year. Has there been, and maybe it's in this document to bring some type of consideration or look at the socioeconomic impacts that this could present? Because once one of these gets up and running and they start making the profit, I can see the price of striped bass going down at a point they could take it out to compete everybody else.

MS. BLACKLOCK: It is never our intention at NOAA to supplant one food source of seafood with another; it is always in complement. We would absolutely happily dive into that a bit more. It is in the paper, and we also have more papers coming on the socioeconomic pieces. But as a driver for this it is never one for the other, it is always to have more and create more access and bigger markets. We are in a world where the U.S. does not play in the commodities seafood game as much as it used to, and how do we find a new normal there?

CHAIR BATSAVAGE: Jay McNamee.

DR. McNAMEE: Thank you for the presentation. I actually, the thoughts I was having were very similar to what Joe just offered. Maybe I'll just kind of restate to say, I did note there is a consumer awareness market section in the paper. But I think, I guess I didn't see that kind of direct economic impacts. It's just a gap in my view of just kind of like a really refined, very kind of specific economic analysis of how it could impact.

What would the levels need to be to not impact and complement in the way that you say. I just wanted to highlight that. Then just I had a thought. It's funny to me, I don't know if it is going to be funny to anyone else. But when you offered a comment about 100% effectiveness of some of the genetic, you know manipulation that you can do on these animals, I was just wondering if you saw Jurassic Park. It's a joke, sorry.

CHAIR BATSAVAGE: Thanks, Jay, always can use a little bit of levity at a Striped Bass Board meeting. Emerson Hasbrouck.

MR. HASBROUCK: Thank you, Danielle, for your presentation. I'm not sure what to make of this. My concerns are very similar to what Joe and Jay just voiced. You know all morning here we've been talking about rebuilding a wild stock of striped bass. It may not be officially the intent of NOAA to compete with wild harvest.

But the reality is that once all these additional striped bass, if they come into the market or when they come into the market, they are going to compete with wild harvest striped bass, and they are going to compete with our commercial fishing industry. That is my concern here. There is going to be a market impact here.

Is there kind of a hidden message here that we don't need to rebuild striped bass wild stock for

commercial harvest, because we're queuing up aquaculture to replace wild harvest in the marketplace. That doesn't sit very good with me. The offshore culture that we're talking about here is going to have an impact on markets and market conditions.

There is also no benefit for the private recreational angler or the for-hire industry. You know one of the things we spoke about this morning, in terms of our working group looking at rebuilding the striped bass resource and what we're going to do after 2029.

One of the bullet items were striped bass culture and stocking for enhancement of wild resource. I don't see anything here that is going to help us directly address that bullet in terms of can aquaculture assist in rebuilding an enhancing wild stock. That is missing from this whole effort.

MS. BLACKLOCK: There is not a hidden message that farmed striped bass should replace wild striped bass. That is absolutely not the intention. It is that we can supplement the marketplace. We can make a year-round product, potentially. We can bring the economic viability into the coastal communities in different ways. It's a diversification conversation not a change of switching one for the other. I just want to make sure that that is clear. We can look more in depth at the marketplace. I hear you. You want a complete market assessment to better understand. That is something that we can take onboard and look at whether our team can get to more of a market assessment.

I think there was something else in what Emerson said that I wanted to come back to, but I can't recall. Oh, augmentation. What we have analyzed for you is not augmentation, although that could be a component of this. Certainly, you would want different types of fish grown.

I don't think that there would be as much of an appetite for eighth generation sterile fish going out, as a way to supplement, right. But a hatchery could run multiple programs. There are certainly ways where you can combine restorative aquaculture, population enhancement aquaculture with commercial throughout its life cycle aquaculture.

CHAIR BATSAVAGE: I have four more hands, I'm going to go to them and I think after we conclude this then what I suggest is Board members, send staff any ideas and thoughts on this aquaculture plan here and we may have this on the agenda for a future meeting this year. But I do want to go to the last four hands here, being mindful of the time. I have Megan Ware followed by Bill Hyatt.

MS. WARE: Thank you for the presentation. I think it might be helpful just to get some sort of potential scale or size, if we could compare that to our current wild caught quotas. I'm curious if there is current Atlantic striped bass aquaculture, the level of production ideally in pounds of that, or if there has been any analysis on what the minimum size of an operation might need to be to be profitable and the size of that. I think that would really give me a better sense of the scale we're talking about.

CHAIR BATSAVAGE: Bill Hyatt.

MR. HYATT: My point was actually touched on quite well by Emerson. Throughout much of my career I've been involved with hatchery operations, and those hatchery operations all had production targets and were production focused. But they also could be used at various times and ways for restoration efforts as well, and we made full advantage of that opportunity. I think this is something that in the long term might have some opportunity for public private partnerships, and that also circles around a little bit to the Work Group, as far as something to be considered, again, in the long term.

CHAIR BATSAVAGE: Loren Lustig.

MR. LOREN W. LUSTIG: Thank you, Danielle, for a very, very interesting presentation to us. You

spoke, perhaps euphemistically about catastrophic events. I would like to learn more about that. Could you direct me to like an internet search. It would be helpful to know the year, the location and the species that would allow me to learn more about catastrophic events, please. A follow up question would be, has there been an event that you would categorize as such for striped bass?

MS. BLACKLOCK: There has not been an event that I know of for striped bass. But catastrophic we just call a system failure, where the complete stock in the net escapes. That can happen from a weather event, potentially, which again, that is why engineering has changed a lot over the years.

It also could happen from a predator entering into a net and creating a hole. There are a number of ways that it can happen, but we've seen engineering past most of these challenges, and it's not something that happens on a regular basis. It's not something you see every day. I would have to google it myself.

CHAIR BATSAVAGE: Nichola.

MS. NICHOLA MESERVE: I think one thing that I am left wondering from the presentation, see in there, was a discussion of food source for these potential aquaculture operations, and it ties into Megan's question about the scale of the operations and the scale of the inputs necessary, and whether that is another source of competition for our wild caught fish.

MS. BLACKLOCK: I did not present on feeds. Feeds overall over the past since 1990 have dramatically changed for aquaculture. They are all species specific and often proprietary formulas. I am going to speak in broad brush strokes. But in 1990, 90% of fed aquaculture fish feed was from fish oil and fishmeal.

That is down well under 25% today. There are many farms that have no fishmeal and fish oil going into them. There have been significant improvements, including from our researchers that found that you can use a plant-based diet and add taurine to make an effective feed that does not require the same components of a fishmeal and fish oil.

That is an active body of research. There are folks looking at black soldier fly, fermentation. It's an active area, not in NOAA but in industry itself, because there is a limited finite resource. It's a constantly changing food source. When it comes to scale, I am not sure what the food conversion, it might be in our paper. I just can't bring it to memory what the food conversion ratio is right now for Atlantic striped bass.

But another thing as we go through generations, they try to get the food conversion ratio down. Food conversion ratio is how much feed you're putting in to get fish fillet out. You want a low number; you need something three times its weight to get its weight out. I'm just not sure where it is, but it might be in the paper. We can make sure that it is in the paper of what the food conversion ratio is today.

CHAIR BATSAVASGE: Thank you again, Danielle, for presenting this updated information to the Board. As I said, if any Board members have any additional thoughts after looking through the report again, just show those to staff and perhaps we will invite Danielle back to another meeting, or just have this on the agenda in general. We'll figure that out as time goes. Again, appreciate the update on this information, definitely a lot to it.

ADJOURNMENT

CHAIR BATSAVASGE: Next up is Other Business, but in the interest of time I'm going to skip over that and just any other business will just go on to a future meeting. Just see if there is any objection to adjourning. Seeing none; thanks everyone, this meeting is adjourned.

(Whereupon the meeting adjourned at 11:04 a.m. on Thursday, February 5, 2026)