Atlantic States Marine Fisheries Commission

Atlantic Menhaden Management Board

August 5, 2026
1:45 – 5:30 p.m.

Draft Agenda

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

1.	Welcome/Call to Order (*J. Cimino*)	1:45 p.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from May 2026	1:45 p.m.
3.	Public Comment	1:50 p.m.
4.	Consider Approval of Draft Addendum II on Chesapeake Bay Reduction Fishery Cap for Public Comment *(J. Boyle)* **Action**	2:00 p.m.
5.	Review Committee on Economics and Social Sciences Report on Board Task • Economic Impacts to Bait Fishery from Changes in Total Allowable Catch *(A. Scheld, T. Scott)*	5:00 p.m.
6.	Consider Guidance to Technical Committee on 2027-2029 Specifications *(K. Drew)*	5:15 p.m.
7.	Other Business/Adjourn	5:30 p.m.

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

MEETING OVERVIEW

Atlantic Menhaden Management Board
August 5, 2026
1:45 – 5:30 p.m.

Chair: Joe Cimino (NJ) Assumed Chairmanship: 5/26	Technical Committee Chair: Caitlin Craig (NY)	Law Enforcement Committee Representative: David Bailey (MD)
Vice Chair: Nicole Lengyel Costa	Advisory Panel Chair: Vacant	Previous Board Meeting: May 5, 2026
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (18 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2026

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

4. Consider Approval of Draft Addendum II on Chesapeake Bay Reduction Fishery for Public Comment (2:00 –5:00 p.m.) Action
Background • In October 2025, the Board initiated a draft addendum to consider changes to the Chesapeake Bay Reduction Fishery Cap. • The Plan Development Team (PDT) and Work Group incorporated the Board's feedback from May into the Draft Addendum **(Briefing Materials)**.
Presentations • Overview of Draft Addendum II to Amendment 3 by J. Boyle
Board Actions for Consideration • Approve Draft Addendum II to Amendment 3 for public comment

5. Review Committee on Economics and Social Sciences Report on Board Task (5:00–5:15 p.m.)
Background • In May 2026, in response to a Board task, the Committee on Economics and Social Sciences (CESS) provided a report on the socioeconomic impacts to the reduction

fishery from changes in the coastwide Total Allowable Catch, and the Board requested additional information for the bait fishery.
- CESS representatives updated the report on the available literature **(Briefing Materials)**.

Presentations
- Overview of CESS Report by A. Scheld and T. Scott

6. Consider Guidance to Technical Committee on 2027-2029 Specifications (5:15–5:30 p.m.)

Background
- The Board sets an annual or multi-year TAC using the best available science, and the current TAC is set through 2026.
- The TC completes projection runs based on recommendations from the Board.

Presentations
- Request for direction for stock projections by K. Drew

7. Other Business/Adjourn

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC MENHADEN MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
Hybrid Meeting

May 5, 2026

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

TABLE OF CONTENT

INDEX OF MOTIONS

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

2. **Approval of Proceedings of February 2026 as amended by consent** (Page 1).

3. **Move to add a no rollover provision to Section 3.2.2.3** (Page 16). Motion by Mike Luisi; second by Rob LaFrance. Motion passes (10 in favor, 5 opposed, 1 null, 2 abstentions). (Page 19).

4. **Move to reconsider the previous motion** (Page 26). Motion by Doug Grout; second by Spud Woodward. Motion passes (13 in favor, 3 opposed, 2 abstentions). (Page 28).

5. **Move to add a no rollover provision to Section 3.2.2.3**. Motion Fails (3 in favor, 13 opposed, 2 abstentions) (Page 30).

6. **Move to form a Work Group of the Atlantic Menhaden Board to work with the Plan Development Team on revisions to Draft Addendum II** (Page 31). Motion by Nicole Lengyel-Costa; second by John Clark. Motion passes (16 in favor, 2 abstentions) (Page 34).

7. **Move to elect Nicole Lengyel-Costa as Vice-Chair of the Atlantic Menhaden Board** (Page 41). Motion by Doug Haymans; second by Eric Reid. Motion passes by unanimous consent (Page 41).

8. **Move to approve the nomination of Eric Lorentzen from MA to the Atlantic Menhaden Advisory Panel** (Page 41). Motion by Nichola Meserve; seconded by Matt Gates. Motion passes by unanimous consent (Page 42).

9. **Move to adjourn** by consent (Page 42).

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)
Raymond Kane, MA (GA)
Sarah Peake, MA, proxy for Rep. Armini (LA)
Nicole Lengyel Costa, RI, proxy for J. McNamee (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Matthew Gates, CT, proxy for S. Madsen (AA)
Bill Hyatt, CT (GA)
Robert LaFrance, CT, proxy for Rep. Gresko (LA)
Marty Gary, NY (AA)
Emerson Hasbrouck, NY (GA)
Monica Martinez, NY (LA)
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 K. Charbooneau (AA)
Russel Dize, MD (GA)
Allison Colden, MD, proxy for Del. Stein (LA)
Joe Grist, VA (Acting AA)
JJ Minor, VA (GA)
Melissa Alberto, VA, proxy for Del. McClure (AA)
Chris Batsavage, NC, proxy for K. Rawls (AA)
Ben Dyar, SC, proxy for B. Keppler (AA)
Malcolm Rhodes, SC (GA)
Chris McDonough, SC, proxy for Sen. Cromer (LA)
Doug Haymans, GA, (AA)
Spud Woodward, GA (GA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Gary Jennings, FL (GA)
Ron Owens, PRFC
Max Appleman, NMFS
Rick Jacksobson, US FWS

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

Ex-Officio Members

Caitlin Craig, Technical Committee Chair
David Bailey, Law Enforcement Committee Rep.

Staff

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

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

The Atlantic Menhaden 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; Tuesday, May 5, 2026, and was called to order at 8:30 a.m. by Chair Joe Cimino.

CALL TO ORDER

CHAIR JOE CIMINO: Good morning, everybody, we're going to get started here. I am going to call the Atlantic Menhaden Management Board to order. My name is Joe Cimino; the Administrative Commissioner from New Jersey, and joined by James Boyle, Caitlin Craig, T.C. Chair.

We also have David Bailey representing us for Law Enforcement, and Katie Drew is here. Online we have Andrew Scheld. We have quite a few agenda items to get through, and most of the morning to do it. Let's see how we do.

APPROVAL OF AGENDA

CHAIR CIMINO: We'll start with Approval of the Agenda. Any edits on the agenda? Not seeing any. We'll consider that approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR CIMINO: Move on to the Proceedings from the February 2026 meeting. I see one hand, Dennis Abbott. Go ahead, Dennis.

MR. DENNIS ABBOTT: Yes, thank you, Joe. The meeting attended, so the previous meeting does not show Doug Grout or myself as attending and we were there, so I would like that correction made.

CHAIR CIMINIO: Noted, got that, thank you. Any other corrections, additions to the proceedings? All right, with that one amendment by Dennis we'll consider those approved as amended.

PUBLIC COMMENT

CHAIR CIMINO: The next agenda item is public comment, so if there are any hands in the room or online, this part of the public comment period is going to be for any items not on the agenda.

We have an action item today for a draft addendum, and I will allow public comment during that decision making. Go ahead, I see one hand in the back of the room, Pete if you could just introduce yourself and I'll give you two minutes, and then I'll look to Toni to see if there is any online hand.

MR. PETER HIMCHAK: Thank you, Mr. Chairman. Peter Himchak, Omega Protein. I just wanted to mention that the Science Center for Marine Fisheries has funded a second project for a team of scientists that are well known to this Board; Latour, Gartland and Nesslage, Wilberg and Schuller to continue their work on developing the roadmap of research projects required to determine a biological basis for any biological basis for any biological cap in the Chesapeake Bay. They have identified, they have recognized the foundation of the cap lies in a tag and recapture program that ultimately would have to go Bay wide and they have developed a proposal that was funded by the Science Center for Marine Fisheries earlier in March. They have designed a pilot study to use acoustic pick tags with menhaden, and assess the survivability of menhaden with the tags, and then they would broadcast them into the fishery and try to detect the acoustic pick tags to get a sense of the recaptures.

If you want to read any direct quotes by doctors Nesslage and Latour; they were in a press release that was sent to everybody. If you want to learn more about the SCEMFIS research program there is an exhibit set up in the lobby. It is being manned by Joe Myers, he is the Chairman of the Industry Advisory Board for SCEMFIS and he represents the Sea Watch International about ocean quahogs and surf clams. With that I'll end my comments if you have any questions, I appreciate it.

CHAIR CIMINO: Pete, I appreciate that. Any questions for Pete? As he mentioned, there is a table outside and I appreciate Joe being here to man that table; it is a lot of great research being done there. I believe we have one hand online is that correct?

MS. TONI KERNS: That is correct, and when you're done with the public comment you can come back to me.

CHAIR CIMINO: Mr. Zalesak, go ahead, you have two minutes.

MR. PHILIP ZALESAK: My name is Phil Zalesak; I am a recreational fisherman with family in Virginia and Maryland. I sent you an e-mail this morning at 8:00 a.m. Here is what it said. In 2002, your state, New Jersey, ended an Atlantic menhaden reduction fishery in New Jersey waters because there was an ecological and economic disaster.

See the length of the New York Post article in your e-mail, it's a great article. Last Friday I sent you empirical data from Potomac River Fisheries Commission documenting localized depletion of Atlantic menhaden in the Potomac River, a critical estuary of the Chesapeake Bay. I also sent you the status of osprey in the main stem of the Chesapeake Bay, which are starving to death due to a lack of menhaden in their environment; see the references I put in there.

As someone who fishes the Chesapeake Bay and Potomac River, I want the same consideration that New Jersey fishermen have had for the last 24 years. I want nothing more, nothing less. I want you to demonstrate some leadership and make a motion to end reduction harvesting of Atlantic menhaden in Virginia waters now, just like New Jersey.

Don't continue with the philosophy of rules for thee but not for me, that would be hypocritical. Finally, if you don't make the motion, I'm asking the Maryland delegation to do so. Maryland commercial bait fishermen and recreational fishermen have suffered enough. I thank you for your time, have a good day.

CHAIR CIMINO: Thank you, Mr. Zalesak. Toni, was that the last hand online? Okay, very good. Now, as I mentioned, and then quickly skipped, Toni will be announcing any Commissioners that are virtual only.

MS. KERNS: If I can get this right this morning, I believe we have Adam Nowalsky from New Jersey and JJ Minor from Virginia online, and Monica Martinez from New York. I just, for those of you that are not in the room and cannot see, we are being recorded this morning with audio and video.

CHAIR CIMINO: Very good, thank you, Toni. With that we will move onto our next agenda item, and that is Consider Approval of Draft Addendum II on Chesapeake Bay Reduction Fishery, so we'll go to James Boyle. James.

CONSIDER APPROVAL OF DRAFT ADDENDUM II ON CHESAPEAKE BAY REDUCTION FISHERY FOR PUBLIC COMMENT

MR. JAMES BOYLE IV: I'll start with a quick overview and recap of the process until this point, and then I'll move on to covering the content of the draft addendum and the PDTs memo with further information that was requested by the Board at the winter meeting. The goal of today's meeting is to finalize the options in the document and consider approving it for public comment.

First, I would like to give a big thank you to the members of the PDT who spent not just a lot of hours in the meetings that I'm sure many of you are sitting in, but also behind the scenes and doing analysis of all the documents. Okay, so a quick recap of the process.

At the annual meeting in October, the Board initiated Draft Addendum II to develop options and distribute the Chesapeake Bay Reduction Fishery cap more evenly throughout the fishing season, and to reduce the Bay Cap by up to 50%. If the document is approved for public comment today then hearings will be scheduled from June to July and the Board will consider final approval in August.

The first issue topic in the document is the level of the Chesapeake Bay cap and how it is set. As a reminder, the Board will have the ability to choose anywhere within the range of options. But for analysis and public consideration the PDT drafted five options between the status quo and the requested maximum cut of 50%.

Those options include a cut of 10%, 20%, 30%, and 50%. Sub Option 1, the 10% cut. When coupled with the in-year quota periods if any are selected in 3.2 in the next section, they may provide a similar reduction to the 20% cut to the coastwide TAC that was adopted by the Board last October in an average year, if the quota period for some reason prevents full utilization of F. Under Sub Option 2, the 20% cut, reduction in the Bay Cap matches the reduction in the coastwide cap in 2025.

Sub Option 3 provides an additional buffer when compared to the coastwide cap reduction to account for the uncertainty and how abundance in Chesapeake Bay correlates to the abundance of the coastwide stock, and Sub Option 4 provides the most conservative buffer requested by the Board. Section 3.1.2 considers automatic adjustment to the Bay Cap with adjustments to the coastwide TAC. Option A is the status quo, where it changes to the Chesapeake Bay reduction fishery cap can only be made through adaptive management as defined in Amendment 3 to the Atlantic Menhaden FMP. Here is what we currently have now where you require an addendum or amendment to change the Chesapeake Bay Cap. In Option B, the Bay Cap would automatically be adjusted proportionately to the coastwide TAC by multiplying a convergent factor by the annual coastwide cap, however that changes.

That conversion factor as we defined it is the Bay Cap selected in the previous section divided by the current 2026 coastwide TAC of 186,840 metric tons. Once set, if this option is chosen, then the convergent factor would need to be changed through adaptive management.

For example, if the Board selects Sub Option 2 in the previous section, which is the 20% reduction in the cap, that gives you a Bay Cap of 40,800 metric tons, and the TAC was then changed to 150,000 metric tons, the new Bay Cap would be 40,800 divided by 186,840 metric tons multiplied by that new TAC to get 32,755 metric tons.

The PDT did consider an option to utilize the TAC and Bay Cap at 2027 as opposed to 2026 for making this conversion factor, but the PDT felt that having known values was more important than having the number that would theoretically be in place when this goes into effect. The sub options under Option B create potential limits on how high or low the cap can be adjusted automatically.

Sub Option 1 would provide the same minimum protection as the current bay cap, which has a maximum of 51,000 metric tons. Sub Option 2 uses the current bay cap as the maximum value, and the maximum reduction contained in Section 3.1.1, which is a 50% reduction as the minimum Bay Cap value.

Sub Option 3, the Bay Cap cannot exceed 87,216 metric tons, which is the highest Bay Cap value since a coastwide cap has been in place, and would have no minimum value. Sub Option 4, the highest Bay Cap value since the TAC has been in place the same value is the maximum, and the maximum reduction contained in Section 3.1.1, again the 50% reduction as the minimum.

Then Sub Option 5 uses the approximate upper and lower 95% confidence intervals around the 2012 to 2016 approximate mean Chesapeake Bay reduction harvest. Those approximate values used to protect confidentiality, which is the same time period used for the current Bay Cap. I'll also note, if Option B, Sub Option 4 is selected in 3.1.1 then the lower limits of this sub option will be lowered to 25,500 metric tons.

In Option B, Sub Option 4 in 3.1.1 is a 50% cut that would be lower than this minimum, so if that is selected then this minimum, and this is selected then the minimum would be lowered. Changes to the TAC beyond these limits would not entail adjustment to the CAP until the TAC is within the limits again.

That is to say, if the TAC increases well beyond the value corresponding to the maximum set by one of these options or sub options, then decreases in future year only slightly, the cap is not automatically decreased until the TAC reenters the range of adjustment. With that I can stop for questions on this first section.

CHAIR CIMINO: Questions for James? Not seeing any; go ahead, James.

MR. BOYLE: Okay, moving on to the Chesapeake Bay Cap distribution. Table 4 from the Addendum in briefing materials outlines a series of options to divide the Bay Cap into three or four quota periods, with the objective of alleviating a concentration of reduction harvest that may prevent menhaden from distributing throughout the Bay to stationary gears.

The options here aim to more evenly distribute the harvest throughout the year or delay harvest even further into the year to reduce the pressure on the initial ingress of menhaden into the Bay. I'll make a note that the fishery begins on the first Monday in May and ends on the third Friday in November.

Depending on the year, the length of the fishing season is either 28 weeks and 5 days or 27 weeks and 5 days. The table outlines the length of each quota period for a season, assuming a 28-week, 5-day year. If the year is 27 weeks and 5 days, we simply remove one week from the final quota period for simplicity or implementation.

Options B through E present options that with three or four seasons of roughly equal length, or as close to equal as can be given the length of the fishing year. Options B and C are the most equal distribution of harvest, whereas B and D give greater emphasis on that objective to delay harvest to lessen the pressure on that influx on menhaden into the Bay.

Options F and G present options with three periods of unequal length, so the extended first period further delays reduction harvest into the year compared to recent performance. But by increasing that short middle period is reflective of the key production harvest in recent years, and the proposed allocations during the season are intended to allow the fishery to operate as usual as possible during this period.

The PDT drafted two options to resolve overage. Option A is the status quo, since there are no quota periods right now there would be no paybacks for exceeding the allocation and quota period. Option B, any overage of the quota period would be deducted from the same quota period in the following year and redistributed to the final quota period in that following year.

If the final quota period of the year incurs an overage that does not result in an overage of the total bay cap there would be no adjustments to the final quota period in the following year. By redistributing deducted quota to the final period, this option achieves the objective of preventing early harvest, while still allowing for full utilization of the Bay Cap.

As an example, if the selected option divides the Bay Cap into three quota periods and the first period has a 1,000-pound overage. Then the following year the first period will be reduced by 1,000 pounds and the third period in that following year will have 1,000 pounds added. There is a key to the objective of moving harvest to the end of the year, but still allow for full utilization of the Bay Cap since there was not in the scenario an overage of the total Bay Cap. If the overage of a quota period is more than the allocation of that period, then the following year that period is simply reduced to zero, and any leftover overage is taken from the next earliest period if there is one possible. Again, in those scenarios any removed overage will be added to the final quota period.

The next section considers whether to close the fishery to mitigate the potential for an overage that would need to be paid back the following year. Under Option A there would be no fishery closure, under Option B when 90% of the quota for a period is projected to be harvested, the reduction fishery would be closed for the remainder of that period and be open at the start of the next period.

Regarding rollovers, so Option A would have unused quota from any quota period prior to the last period would be rolled over to the last quota period. This is complementary to Option B under overages, where overages of the final quota period that do not result in an overage of the total Bay Cap are not paid back.

Option B, unused quota would be rolled over evenly to all subsequent quota periods. This option would potentially allow for recouping of underutilized quota for the remaining parts of the fishing year, but ensure that not all the underharvest is caught in the following quota period.

There is a sub option to Option B, where they can only be selected if there are four quota periods, where unused quota from either Period 1 or 2 are rolled over evenly to quota periods 3 and 4. But quota period quota underharvest in quota period 1 is not rolled over to quota period 2. Any unused quota from quota period 3 would then subsequently be rolled over to quota period 4.

This will allow for potential of some recouping of underutilized quota at the end of the year and again ensure that none of the underharvest is caught in the first half of the fishing year to maintain the goal of redistributing quota later in the year. Before I start transitioning fully to the PDTs memo of additional information.

We did consider and reject some additional options. The first option would subtract a quota period overage from the total Bay Cap in addition to reducing the equivalent quota period the following year, thereby eliminating the need that I discuss in Option B of overages to redistribute that deducted quota to a different quota period.

The PDT rejected this alternative option to prevent reducing the total bay cap when it is not exceeded, and similarly the PDT considered and rejected an option to prohibit rollover, to again prevent reducing the total bay cap when it is not exceeded only due to an overage of a single quota period.

The third option would have distributed the deducted quota period proportionately over the remaining later quota periods. Given the stated objective to shift harvest later in the year, the PDT believes that the option for overages in the document, where deducted quota is distributed only to the final period achieves that goal and also simplifies the document and simplifies the overage system. I can take any questions on this section.

CHAIR CIMINO: I've read it a couple times and then James did a fantastic job of explaining it. Let's see if we have any questions on this section. Yes, we have some hands coming up now, so I'll start with Steve Train and then Mike Luisi after that. Go ahead, Steve.

MR. STEPHEN TRAIN: Thank you, James for, I guess doing a great job of explaining it, but I'm still a little bit confused. If we could roll back a couple of slides, I've got a question. The payback periods into the next year, based on the quarter or the trimester that you went over. It doesn't sound like a payback; it sounds punitive in one area. It's not keeping the population in balance there is a punishment for it.

I understand that, because you want to discourage this. The problem I have is, what if the overage isn't found until later. What if we have a computer error or what if we have a reporting error like have happened in other species, where a fishery has gone over at no fault to the fisherman. Then there is this punitive piece in there for it. Is there any way if we pass this along like this that we can pull that back out?

MR. BOYLE: I don't think there is a system right now. In this system the reason it is set up this way is that all of the quota accounting would have to be done or could be done between years. In that scenario we're not worrying about monitoring week to week. But in that scenario, if I understand correctly, the fishery doesn't know that they've gone over a quota period.

We find out at the end of the year that quota period 1 was exceeded and then that would be redistributed. There is not a system in this scenario that would have like a forgiveness of that, so to speak, I guess. In that scenario quota period 1 was exceeded they would still get those fish back, but in the end of the year not in that first period if that was the overage.

CHAIR CIMINO: Follow up, Steve?

MR. TRAIN: Like I said, the punitive part is you are taking it out of the part of the year that you wanted to fish in, or caught then in, because you went over with trying to ration it. That wouldn't be, if the mistake was either in the reporting or the software or whatever other reason that is not known to the fishermen, they would still get the punitive part of it, the way it's written now. There is no way to get around that.

MR. BOYLE: No, I don't think so. Maybe I'm not following, but I'm not sure, I don't think so. If they went over in that period and we only find out later, then yes that is an overage. That would still be taken out and moved to the final period the next year.

CHAIR CIMINO: I have Mike and then Renee and then Joe Grist.

MR. MICHAEL LUISI: Just a couple questions; the first one having to do with the timing of the quota periods. James, I wonder, so during the discussion as we were crafting and coming up with ideas for how this would lay out there was some concern, and I understand the concern regarding the length of time between periods and how much administrative emphasis or administrative burden will be on the state responsible. In Maryland years ago we used to manage our striped bass fishery on a monthly quota that we had to manage each month, opening and closing and restarting and everything and it was a nightmare to get through. It took enormous amounts of time in order to manage that monthly quota throughout the year. When I look at this, I think that some of these options, and I'm asking, but F and G, they have these small windows of time of only six weeks.

That seems awfully fast to be able to turn around management and being able to make sure you have all the data that you need in order to manage that. Was there any discussion about the length of time in those two F and G? Did the PDT discuss it? Were there issues? Did Virginia bring up any concerns about the ability to manage a quota under a six-week time period?

MR. BOYLE: The overage system by making it, we had discussed originally when we came before the winter meeting of having overage paybacks within the same year, so if you have an overage of a period then the next period may have quota reduced or maybe a period after that. That is where that short period issue was brought up.

Once we transition to this overage system in Option B, where the overage is paid back the following year, then all of this accounting, even on a weekly level can be done in between years, and so it seemed like it administratively was enough time that we could figure that out.

CHAIR CIMINO: Follow up, Mike?

MR. LUISI: Yes, thank you, another entirely different question, Mr. Chairman, if that's okay. Going to the rollover section and looking at the rollover section and the options in the rollover and what you presented on your last slide. It would make sense to me to have a full scope of options under rollovers, including a no rollover provision.

The no rollover provision was removed; it was rejected. Just from my own edification, can you remind me or give me some thoughts maybe that the PDT had or maybe a previous Board discussion as to why? Was that voted out at a meeting or was that something that the PDT determined that they wouldn't put forward as an option for no rollovers?

MR. BOYLE: That was something determined by the PDT, because when you had a no rollovers option and you have two ways to manage that essentially. The overage system we have now creates basically de facto rollover to the final quota period, because it doesn't incur any penalties if the final period is exceeded, as long as the total Bay Cap is not exceeded, as effectively a rollover to the final period.

The only way to resolve that and have no rollovers would be either the final quota period being exceeded would incur its own type of penalty, in which case either you would have to, if you did the same redistribution thing we're doing, and you're taking quota period away from the final period. The only way to redistribute is earlier, which is against the objective of the document.

If you don't want to do that then the only other thing you can do is take it off the total Bay Cap, in which case you are penalizing the whole Bay Cap for an overage in one period. The PDT had that option drafted at our last meeting, I'm sures some of you were in that meeting and saw that. Then afterwards we discussed it and preferred that if we could get rid of the no rollover option that would resolve that issue, and then we could have just this overage system.

CHAIR CIMINO: I have a few other hands up on this side, so I was going to go to Renee Zobel.

MS. RENEE ZOBEL: I guess Steve and Mike kind of liked some of my questions. I'm thinking about, I'm just not as familiar with the data reporting in this fishery. I'm thinking of this as somebody who was the one who was monitoring in-season for AREA 1A for herring. My understanding now is that there is less in-season monitoring.

Can you just talk a little bit about how the data reporting, I mean there are concrete periods, what kind of monitoring is happening? What kind of communication with the fishery is happening, as far as where they are with the quota. You know how does that work? This gave me a little anxiety as somebody who is responsible for making sure that we were doing a good job of informing people and closing things down when necessary. Just a little more information that would be really helpful for me.

MR. BOYLE: I will defer to Virginia on more specifics on how they interact with the fishery and how they receive the reports. But from our perspective we receive weekly reports on the reduction fishery throughout the year. In terms of monitoring for these kinds of overages on a week-to-week basis, we would have plenty of information to know, like in these weekly quota periods where the quota was, once we got to the end of the year.

I do believe there is at least a two-week delay from when, like if the last harvest might, or when a pound is caught to when that pound might show up in that reporting. That was a concern with the shorter quota periods if you were doing in-season penalties. That may be something to discuss.

We've had discussions with VMRC about if for the option where the fishery has to close when it's 90% projected. That could come up as an issue. Same with there can be large fluctuations week to week so that is the same problem. But at least in between years for determining the overages we have that week to week data.

CHAIR CIMINO: Follow up, Renee?

MS. ZOBEL: Yes, just a quick follow up to that, James. Some of that curiosity, and I know that we're dealing with a low number of participants in this case essentially. But how is any of that feedback is going back to the industry who is trying not to go over those periods.

CHAIR CIMINO: Joe Grist, if you could help us out there.

MR. JOSEPH GRIST: Yes, I'll do my best to help you out on this. I think the comment punitive was pretty good. It's our responsibility to help manage this quota, and to make sure they don't go over. We do it in every fishery we manage, with quotas all around this table. It would be difficult. The way we would operate currently with Captains Daily Fishing Reports. We receive them on Thursday from the week prior. Depending on when that catch report for the week prior is, it would be up to 10, 12 days for some of those catches. Then we get confirmation through the plan a couple weeks later on the catch, so there may be a little difference. Initially in-season we don't see a lot of difference in the numbers from the CDFR from what we get for the update. As we get later in the season there may be a little bit more of a discrepancy, but nothing major.

It's just we just may have a little bit more difference later in the season. It's not set in stone how that happens. Some years it's straight up and some years we see a little change. But the shorter the quota periods are, so if they fished last week and I get to report this coming Thursday, I'm already into the second week of fishing.

If it's a six-week period or seven-week period, I'm only going to get a couple data points, before I've got to be projecting to whether or not I need to tell them Hey, this period is not going to work. It means slow down or you need to stop, before they go over in that particular segment. I mean that could be very difficult to do with the way the system is.

Well, ideally, they will put in daily harvest reporting and all that, great. Give me a person and some money, which I don't have neither. Until I have those resources, I have to deal with the resources that I currently have. The resource I currently have, these make these shorter quota periods very difficult for us to manage.

It would be unfair to the harvesters for us to say, well we'll just deal with it later. That is not good management. We wouldn't do that for any other species around this table. Yes, this total period comes along like C and D and such. They are going to be hard for us to do and work, so is that a kind of answer to part of that question?

Since I did have my hand up, Mr. Chairman, see me just for a couple other things. I'm not going to sit here on a soap box or anything. We've mentioned the administrative burden with some of this stuff does do for us, so that will be taken into account. We are going to do everything we can to ASMFC direct, but some of this is an administrative burden.

On the rollover provision, we already paid the Bay Cap back if there is an overage, which has only happened rarely in history has the Bay Cap been exceeded, but if it does it gets paid back. Worrying about the rollover throughout the season. If the measure is just to set a cap that they have to adhere to, then let's just set the cap.

If there is an overage of the annual cap then it gets paid back the next year, which is commonly done in most fisheries. If there isn't, no harm no foul. They can't catch the fish early on, because the fish aren't there and they are going to get penalized if the fish are there later. But they now can't touch them.

Not having rollover kind of goes against how we've done fisheries management for decades around here. We've almost always had some type of rollover provision. I don't see where that is going to be really tenable to keep that in there. If there is anything else, operational questions or anything, I would be happy to ask members of the Board. We are going to do what we can to help guide you all through what we can do in Virginia, because obviously at the end of the day the Addendum is on Virginia. We're the only ones it's on, so I would be happy to answer any questions I can for the Board.

CHAIR CIMINO: I want to welcome Luis Alberto, new Commissioner from Virginia, who is joining us today, welcome. I have one more hand so far on the list, Allison Colden.

DR. ALLISON COLDEN: I am not surprised that this rollover and overage section is getting a lot of interest and conversation. It is quite extensive, so thank you to the PDT and to you, James, for thinking all of these various scenarios through. I did want to just sort of present a potential counterpoint to some of the arguments about rollovers.

I think we have, it might help, James, if you could pull up the quota period options that have the percentages in the chart, thank you. You know we are going to be hopefully, eventually, making a decision on an addendum and we have in front of us the quota period options with expected percentage of the total Bay Cap across these various options.

Presumably they reflect the intent of the Board, in terms of more evenly distributing harvest, or allowing for you know a delay in harvest for ingress of fish into the Bay. I'm sure that making those decisions we all have some expectations that those are roughly the percentages of the Bay Cap that would be achieved during those harvest periods.

But the rollover provisions and the fact that there is not a limit on the amount of rollover in the options we have in front of us now means there could be some significant departures from the percentages that we see here, depending on how the fishery ends up operating.

From my perspective, having an option in the document for no rollovers gives us one, completeness of options, because to me it seems like we typically always have either a status quo or a no action option, that kind of rounds out the totality of a specific section, but also provides the opportunity for the Board to have certainty that these are the percentages that we would see being achieved in those quota periods.

I think the rollovers just introduces some more uncertainty which we'll have to consider if this document moves forward, and so just have an interest in seeing that no rollover, so we have the ability to sort of think through the totality of those options. Thank you, Mr. Chair.

CHAIR CIMINO: Thank you, Allison. I'm going to head over this way. I have Nicole then Nichola and then in the back of the room.

MS. NICOLE LENGYEL COSTA: I actually shared Renee's concern about the quota monitoring, and it was very helpful to hear Joe speak on Virginia's ability to actually track these periods throughout the year. But where my confusion lies is when we read the document, and James did a nice job of explaining how most of those sub period overages were going to be handled in the following year.

However, when Joe was speaking, he was talking like we typically manage quotas throughout the year, where we're proactively tracking the quota throughout the sub period and then we use the previous weeks landings to do projections, so we know if we have to have an early closure. It is not typical for an FMP to specify quota periods. Typically, we specify an overall quota, and then we leave it up to the states to manage it how they wish. But given that we are specifying the quota periods,

I think it would be helpful to have some language in the document that Virginia is going to be doing some in-season tracking, and that they are going to be doing early closures when possible. But I still have concerns, given what Joe said about their ability to do so without incurring large overages on a regular basis, given the delay in the reporting.

CHAIR CIMINO: For something like that I am not necessarily going to look for a motion. If any Board members had concern with that language, we'll let a hand come up, but otherwise I think that that is something to get in there. Nichola, you're next.

MS. NICHOLA MESERVE: I just wanted to make sure that I am on common ground with others. The document refers this table to nine weeks, ten weeks. I believe that the reference period for those is the first Monday of May, or whatever it is in Virginia regulation that establishes when the reduction fishery can begin

I'm seeing Joe Grist nod his head, so I think for the public's understanding of what these time periods mean you might want to include that as a point of information in the background. I would note, however, that that start date is not set in the FMP, so Virginia could potentially change that.

It leaves me a little bit questioning how that then applies to the selection of any of these options if the FMP set its seven weeks from the start of the purse seine fishery, but then the reduction fishery in Virginia could change that. It feels like a little bit of a disconnect. Then I also had a question about some of these options.

For example, D here, where it puts most of the harvest late in the last period and some of the rollover provisions that would likewise allow for kind of the accumulation of allowed harvest since the last period. When I look at the beginning of the addendum and it says that the intent is to reduce the concentration of the harvest, and even going back to the motion that initiated the addendum, which was to spread it out.

It seems like those options are a little bit different from the intent as stated. I just wanted to make sure that my understanding of the PDT has kind of adapted that intent to not just be to spread it out, but also to potentially push it to later in the year. Can you just kind of confirm that. I Think that is okay that the PDT did that, I just want to make sure that that has been reflected in the document.

MR. BOYLE: Yes, there are two kinds of similar objectives or related objectives. One is spread out more evenly, and the other was to push it later to protect the ingress. The 25-25-50 Option in Option B came from the Board in the winter meeting, and so those two objectives we tried to work together and also this is like this is how the overage system works. But it is trying to match these two things up as best we could.

CHAIR CIMINO: Joe, did you have a response to the time period?

MR. GRIST: Yes, I just wanted to make note. It is not a simple process actually for us to change that season. That is set in the code of Virginia, so it will actually take legislative action to change that reduction season in the Bay. That is in code, so that is not an easy process. That is not something the Agency could do to a standard mostly regulatory process. It would have to be a bill introduced and have to be debated. Could it be changed? Theoretically yes, easy to do it? No, not easy to do it at all.

CHAIR CIMINO: Okay, I think Malcolm, you were the only other hand I have.

DR. MALCOLM RHODES: I understand all the issues of administrative work, and believe me I know we're run short in South Carolina all the time. When we're talking about the reduction fishery, we're talking about one entity, which I'm sure keeps quite records. Why don' t we throw the onus on them. It must be real time, you're not having to collate 4 or 5 different operators, but 1 single operator.

I don't see why we require real time for a lot of other fisheries, why they can't have an up to date, and the onus goes to them and they all proof it. I'm just throwing out what I'm hearing this. I don't see why we don't throw it on the industry, since it's one entity, and when they come into Reidsville, they know what they offload and it should be almost a real-time reporting. I may be incorrect, but just when I listen to this discussion.

CHAIR CIMINO: Joe.

MR. GRIST: We regulate by the vessel, not by the entity, not by the owner. You are talking, I forget how many total, are in the fleet at this point. There are individual vessels. The other thing, just because it is a common owner they are protected by the confidentiality rule, so there are some complications to how that would be handled.

But we do monitor the vessels, so if all the vessels are out, I think there should be a total of 7 or 8 different reports that we're getting in from the different vessels that are due on that Thursday. It's still on us to do all the verifications at the end of the day, I mean we're the enforcement authority for the Commonwealth, so we have to be the ones that have the tool to do it. I understand the perspective, but there are some complications to that.

DR. RHODES: Just to follow up though. We have other reporting systems where the dealer has to do reports from all the different people. Would this not be the same? You wouldn't need the 7 operators, but when they are offloaded in Reidsville, they know what they've bought, and it seems like that would be real time and that would get around to confidentiality issues, you know essentially make them a secret dealer that is making the report, I'm thinking. We don't deal with this in South Carolina, but it's just thoughts that were coming to mind.

CHAIR CIMINO: Dennis Abbott, you had your hand up?

MR. DENNIS ABBOTT: I would like a little clarification. Joe Grist, I think he mentioned that he would have to go back to the Legislature. I was under the impression that menhaden management was removed from the legislature in Virginia and given to the Agency. Is that not correct?

MR. GRIST: It is correct that we have regulatory authority, but there are still certain provisions established in the Code of Virginia that set certain standards we can't change and one is the season. The season is still set from the code. All our power comes from the Code of Virginia. The code can establish boundaries that we have to adhere within, and that is an established code of Virginia boundary is their season. That is how come we can just go and change on our own. We have to have the boundaries changed for us to operate within. That sets our regulations.

CHAIR CIMINO: Thanks for the clarification. Eric Reid.

MR. ERIC REID: It's an interesting conversation about who has to report, where the onus is and all that. I mean for the boats that I deal with, you know they have federal permits and they have to have their VTR filled out when they hit the dock. You know then the dealer has to report twice a week and that's how it goes, and so there are a check and balance there.

But in the menhaden fishery it is really interesting, because the boats that actually catch the fish are not landing the fish. It goes into carrier boats, so it kind of compounds the problem of who is going to report what and when, so we have to keep that in mind.

I'm sure there are some boats that are, you know they pull past the net and there is a skip that does the rest of it and they carry their own fish. But in the case of some of these bigger operations, the guy that is landing the fish didn't catch them, that's all. It's kind of weird. Things that make it only more complicated, so I don't know how we figure that out.

CHAIR CIMINO: Thanks, Eric. To Toni, for any hands online. Okay. Winding down on questions, it seems. Emerson.

MR. EMERSON C. HASBROUCK: Kind of a simple question here. In terms of harvest that goes against the Bay Cap. Is the pound net catch included in the Bay Cap or is that part of a coastwide quota?

MR. BOYLE: Only the reduction fishery catch is counted towards the Bay Cap, but all landings are counted towards their state quotas. The Bay Cap is still within Virginia's allocation. But the bait landings are all separate.

CHAIR CIMINO: I guess James has a couple more slides, so I'll turn it back to him.

MR. BOYLE: The Board also requested analyses for further consideration, including compare reduction effort with harvest data within the quota periods to investigate the pound net and production catch rates, to determine if pound net landings are correlated with the timing of the reduction fishery and changes in pound net participation over time. There is some discussion in the initiation of the Draft Addendum on the use of harvest or effort to develop the quota periods. This table, which is also included in the PDTs memo in briefing materials shows the approximated average landings in 2018 and 2024 since the current Bay Cap has been in place. The approximate average percent of landings in effort for quota period further options in Draft Addendum II.

Since 2020 the distribution of effort is generally spread relatively evenly across the fishing season with about 5 to 10% of the total effort occurring in most weeks with occasional spikes and drop-offs. In 2018, more effort occurred early in the fishing season, 2019 it was primarily in two stanzas with very little effort for most of the month of July.

The relative trend in catch per unit effort of CPUE was most variable in 2018 and 2019. For the question regarding catch rates in the Maryland pound net and reduction fisheries, the PDT conducted a preliminary analysis to evaluate any potential link between the two, but does recommend to the Board that the Technical Committee would be a more appropriate avenue to conduct a more detailed analysis.

In general, changes in the harvest may be caused by changes to fish availability, changes to effort, and/or changes to fishing efficiency. Assuming for the sake of this analysis that there were no major gear changes to the fishery that would affect efficiency, the PDT investigated the variability in effort and availability as potential causes for the declining harvest that had been reported out of Maryland's pound nets.

Figure 3 in the memo, which is on the slide, shows that harvest and effort in the pound net fishery, again this is just for Maryland, was stable from 2018 to 2022, but declined significantly in 2023 and 2024. While true abundance or availability is unknown, the PDT used CPUE as a proxy for abundance, assuming again that there were no major changes to how the fishery operated between years.

These data show that although annual CPUE has declined recently, the decline is not as dramatic as observed in the catch and effort to just seeing that the decline in landings is primarily driven by reduced effort. If we look at Maryland DNR Choptank River Independent Survey as for comparison between 2018 and 2023, the abundance appears to have been relatively stable before a dramatic decline in 2024 and remaining low in 2025.

To break this down even further, to investigate seasonal impacts, CPUE was evaluated on a weekly basis beginning in week 13 of each year. In weeks 13 to 26 CPUE in both 2023 and 2024 is low relative to the average of 2018 to 2022, although it is unlikely to see a reduce in the reduction fishery, as the reduction harvest does not usually begin until week 19 and was delayed until after Week 23 in both of those years.

The second half of the year after Week 27, weekly CPUE in 2023 is generally equal to or greater than the average from 2018 to 2022, until Week 46, but it again suggests little influence in reduction fishery as by that time both fisheries have achieved greater than 95% of their annual catch and are generally winding down. By contrast in 2024, CPUE is generally below the 2018 to 2022 average from Week 31 through the end of the year. That year the reduction fishery began in Week 23, approximately five weeks later than they normally had from 2018 to 2022, but by Week 33 had caught about 60% of their annual harvest, which is in line with those earlier years. It is possible that those higher-than-normal catch rates may have affected the availability of fish in the upper Bay. Although the PDT does know that this is not conclusive and that any link between reduction harvest and availability in the upper Bay would be a joint function of fishery dynamics and migratory patterns at a finer scale than we could consider it for this analysis.

Finally, the Board requested it show analysis to explore trends in the number of participants in the pound net fishery for Maryland, PRFC, and Virginia. Overall, all three jurisdictions saw a decline in the number of any participants from 2018 to 2024, with Maryland seeing the biggest decline from 2018 through 2021.

Since 2021, all three states and jurisdictions have between 10 to 16 participants per year. When looking at the number of any participants by month, and there are further figures on this in the PDTs memo. There appears to be fewer participants by month during 2023 and 2024 for all three jurisdictions when compared from 2018 to 2022, although there does seem to be consistent variability by month throughout the time series without a clear trend. With that I can take any questions.

CHAIR CIMINO: Questions for James on the memo. I have Emerson and then I'll go to you, John.

MR. HASBROUCK: Thank you, James, for your presentation. Do we know what might be causing the reduction in pound nets being fished in those states? Are people just getting out of the fishery, are people retiring out of the fishery? I know some of this discussion had it related to menhaden availability, but is there any correlation there between number of pound nets being fished and menhaden availability, you know a statistical correlation?

MR. BOYLE: I can't speak to why participants have been leaving the fishery and saw that decline. But from this brief analysis the catch per unit effort does seem to be relatively high compared to the decrease in participation. The CPUE has decreased in '23/'24, but it is not as dramatic as the loss in participants, which suggests there is some availability there at least.

CHAIR CIMINO: John Clark.

MR. JOHN CLARK: Mine is kind of a follow up question on the topic that Emerson brought up. I'm just curious. I mean there is a good economic analysis in the Draft Addendum about the potential economic cost to Virginia to the reduction fishery if the reductions are made through the Bay Cap.

Just curious in Maryland if any work has been done, how it has affected employment in the fishery in Maryland that would be similar to what was done for the reduction fishery, because as you showed there the participation has gone down. I was wondering, as Emerson did, how much of that is due to the availability, if people aren't setting the nets, or whether it's just gotten to be one of those things where it's a difficult fishery. It's a lot of work, to work pound nets and people just have other ways of fishing, what the deal is.

CHAIR CIMINO: Okay, one of our Maryland Commissioners is going to help out there, John. Russel.

MR. H. RUSSEL DIZE: Joe, I was talking to a friend of mine, a commercial pound netter, two days ago before I came up here. The reason why we're losing pound netters is they can't exist on just catching what we call rockfish, striped bass. For instance, Rob said that he went to his nets Friday and she was full of striped bass, so you can't save striped bass, so he has to lower them and let them go.

But they can't exist on just catching striped bass. They need the menhaden. Menhaden is the staple that keeps them on the plus side so there is a profit. If they can't catch any menhaden, they don't have a barrier between that and the striped bass. Normally they just catch striped bass and menhaden.

Without the menhaden, and that's why we're losing our pound netters in the last two or three years. I mean around my area several of them have just quit because it's just too expensive. Used to be you go in the woods and you cut 60 poles for a net or 100 poles for a net. The wood, the guy would let you cut them. Now they are $6.00 and $8.00 a piece for every one of those poles you catch. That is what is happening in the pound net industry at home.

CHAIR CIMINO: Thank you for that insight. Other questions on the memo. Eric.

MR. REID: My question is, is it the fishermen? Does the license go to the fisherman or does it go to the trap? I guess that is my first question. I'm not sure if I have another question after that. Maybe I do, but how does that work out? Does the trap have a license or is it the person?

CHAIR CIMINO: Mike Luisi.

MR. LUISI: A licensed fisherman, a fisherman is licensed. That license gives him or her the ability to harvest fish with whatever means that license allows, and we have a range of different licenses that will offer different gears. You have a license that allows you to set a pound net. In order to set that pound net you have to have a declared sight.

We have a sight registry around the Bay. You have to have a location for that fixed gear to be placed. It has to meet all of the other regulations about distance from this or distance from that. It is established as "yours" as a license holder I have that spot reserved for my harvest. Before the season we ask fishermen to give us an indication on how many nets they plan to set and fish that year. How accurate that is it's hard to tell. I assume that it is mostly accurate.

We're getting a decent handle on the number of nets set. But after that, once they have declared their intent, they have their net location and they've told us that they are planning to set three nets and fish them this year. They have three locations, that's as far as it goes, as far as their legally being allowed to harvest from those nets. That is how we administer. We don't have any special permits. It's a gear that is associated with a license, and that information is given to us prior to the season.

CHAIR CIMINO: Ron, did you have something to add for PRFC?

MR. RON OWENS: Yes, so in Potomac River it is a little different. By regulation we only have the availability for 100-pound net stands and they are held by a handful of watermen, so it is a little different on that.

CHAIR CIMINO: Are there questions? Russel.

MR. DIZE: To go a little with what Mike was saying. When you stake your pound net it has to have a license displayed on the pound net, so each pound net would have his license. My license would be displayed on that pound net so it could be seen by DNR, whoever wants to see it.

CHAIR CIMINO: Okay, I think we have our answer there. Eric again? No, okay. Spud.

MR. SPUD WOODWARD: It's kind of intriguing. I'm curious of the CPUE determination. Is that based on the catch divided by the number of nets that we know to have been fished or the total number of nets that were actually allowed to be fished?

CHAIR CIMINO: Yes, good question.

MR. BOYLE: I believe it is net sets which we know to be fished, but I can doublecheck offline on what data we got from the states.

CHAIR CIMINO: Joe Grist.

MR. GRIST: This is why they started printing them, so checking back in with the team that was doing it. They decided the data included number of nets fished, is what they've responded back.

CHAIR CIMINO: Thanks for that clarification. Not seeing any other hands on the memo. Matt, go ahead.

MR. MATTHEW GATES: I might have missed it in the presentation, but I do see sort of a recommendation in the PDT memo for the TC to maybe do more work on the CPUE analysis, and I'm just curious. Is there anything more that the TC could do with the available data, to try to go a little more in depth with that analysis? I'm just curious.

CHAIR CIMINO: Well, yes. I guess there is some level of, maybe of speculation, but if there has been a conversation, Katie.

DR. KATIE DREW: We have not, the TC has not talked about this or seen these data. Obviously, the TC would also need to get confidential access for these data. I don't believe this analysis used any environmental data in it. I mean I think there is maybe some additional things the TC could look into, but I don't think there is necessarily anything we could do to increase the confidence in the results given, especially the short time period we're looking at right now.

CHAIR CIMINO: Mike.

MR. LUISI: Just one little extra piece of information, just I got from staff too. I did the phone a friend earlier this morning. I just want to clarify. What we would be looking at for the unit of effort is the nets set per day, it's how many nets were fished during a day. The thing that I want to make clear though is that pound nets are stationary fixed gear, and they are not always there to target one particular thing. Just last year we had 29 different species reported using from pound nets in the Chesapeake, with the highest harvest being channel catfish, striped bass, gizzard shad, menhaden, blue catfish and white perch. These fishermen are out there fishing all sorts of the areas of the Bay for all different types of species.

The catch per unit effort part and how many nets they fish and what their expected catch is, I think may complicate that analysis. But I need to think through it a little bit more to understand it in my mind better. But I just wanted to lay that out there for just a little background as to how our pound net fishery operates.

CHAIR CIMINO: Every time I say I'm not seeing any hands I see a new hand. But I think we are at a point where we can start moving into discussion on the Draft Addendum. I think part of that could be starting us off with motions, if that might help a discussion along. I'm not going to object to that.

As I mentioned, before we do take final action I will go out to the public for public comment. Actually, I'll do that for any motions we have. Pleasure of the Board on the Draft Addendum, and I will mention that we did have some suggested text edits. Once we do have a motion, if this is going to be going out, that that motion would ask it to be as amended today. Okay, James, go ahead.

MR. BOYLE: Just to jump in. I have a few more edits that I received. One of them is to, in the Option B of Section 3.1.2, which is the automatic Chesapeake Bay Cap adjustment. It is to add language on if the Board would like to go forward with the sub option but having minimum and maximum.

Why the Board would want to see further justification for having a minimum as well as a maximum. In addition, more language in that text will be added to clarify what adaptive management is, and show the section in Amendment 3 as a minor change, and then language to show that the minimum does not affect state allocations that the Bay Cap. Further clarification where Bay Cap does not affect state allocations, and to clarify that Table 2 of the same section, just clarify that table that the option is referring to, referred Option 3.1.1 not 3.1.2.

CHAIR CIMINO: Erika.

MS. ERIKA BURGESS: Before we go into motions I want to thank James for his time. He met with me on Friday. I found, as I think others around the table have found, that the document was a little challenging to follow. I think these changes will help the public, which this document is intended for, to understand the options in the document. I also hope that the Board can narrow down some of them and state more clearly their intent and the purpose for these actions, so that the public can provide meaningful comment on them.

CHAIR CIMINO: Thank you for taking the time and going through that, I appreciate it. Pleasure of the Board, Mike Luisi.

MR. LUISI: Somebody has got to break the ice, right, Mr. Chairman. I mentioned earlier what the PDT discussed regarding rollovers. We talked about it briefly. James provided some thought about the rollover provision and why the PDT decided not to have a no rollover provision in the document.

I would feel more comfortable if this Board decided that, to decide whether or not that no rollover provision should be an option in the document. I would make that motion, Mr. Chairman to include. The motion would be **move to add a no rollover provision to the rollover section of this document.**

CHAIR CIMINO: Okay, thanks, then we'll get that up on the board for you, Mike. It looks like we're starting to dial a phone number. We'll get that in and then we'll see if we have a second. We do. Rob, I'm assuming that's a second, so a second by Rob LaFrance.

MR. LUISI: May I provide some rationale, Mr. Chair.

CHAIR CIMINO: Yes, let's do that, Mike.

MR. LUISI: Yes, this is more, for me this is more about the completion of the section and having a full rounded out, all the different degrees of options from no rollovers to have the rollovers as they are already addressed in the document. I just think it offers a more complete picture of the situation.

At this time right now, thinking it through, I would need to think through how it all works as to whether or not I would support this at the end. But I definitely thing that the public deserves the opportunity to consider this as a management tool for how we deal with the Bay, with the Bay Cap. For me this is about process and inclusion to be more complete.

CHAIR CIMINO: Rob, as the seconder.

MR. ROB LaFRANCE: I think that accurately states the reason I would be supporting this motion as well. The notion of setting out all the different options for the public to be able to get an understanding of. I think after this happens, I'm also after hearing some of the debate here, thinking about some of the other things we have to do in the document.

This sort of sets a placeholder or an explanatory perspective, and I think it's important for us to do that. I think there is going to be other changes to the document, in terms of its complexity. I think this actually simplifies.

CHAIR CIMINO: Okay, further discussion, let's go around the table. Joe Grist.

MR. GRIST: I understand the arguments being made. I find this motion is punitive. If we have a situation where we're not overfishing, we're not overfished, we're nowhere near the Bay Cap. The first two, three segments they didn't catch up because the availability of the fish wasn't there.

We are seeing some changes in availability year to year in the Bay now to times of the year when the fish are actually available. They don't operate by a calendar, as much as all of wish they did. It would make our lives a lot easier around this table. I see this as an option that, if it were to make it all the way through it would be very punitive.

It's not any fishermen's fault if the fish don't' show up at a certain time of the year and they don't get to catch them. But later in the year they do show up. The cap is cap. At the end of the day, it is the total cap and the annual that is going to rule the day. The segments is a management tool, but now we're talking about basically making individual segments caps, mini caps, completely independent of the next. That just seems very punitive in this approach.

We have an overall Bay Cap annually. You want a management by segments to control the harvest through the period, fine. But now this literally, if this were to go all the way through with public opinion and this Board. Something like this would basically create three or four Bay Caps in a year, and that makes no management sense. I don't understand the argument for that whatsoever.

CHAIR CIMINO: Other discussion around the table. John Clark.

MR. CLARK: I agree with Joe. I mean we have a cap for the Bay, and as you said, this would be a situation where each one of these trimesters or quad-mesters, whatever they are, is its own individual cap, and that, I think, is beyond the scope of what we were considering before. I don't think this should be in.

CHAIR CIMINO: Doug Grout.

MR. DOUGLAS E. GROUT: Just to be clear, we currently have a no rollover provision for the total Bay Cap, is that correct?

MR. BOYLE: The Bay Cap cannot rollover from year to year.

MR. GROUT: From year to year, yes. This is specifically talking about having a no rollover option between periods only. Okay.

CHAIR CIMINO: Thanks for that clarification, I think that is good for everybody. No hands online. Allison.

DR. COLDEN: I already spoke about this concept a little bit earlier in the Q & A portion. But I Think something that Joe mentioned just struck me, in terms of the availability of menhaden in the Bay and the changing availability of menhaden in the Bay. I think this no rollover provision also provides an opportunity for some really important information to be gathered in that regard. You know if there are changes to timing or availability for various reasons. Not being able to catch the cap in any particular quota period is really important information for this Board to kind of understand those dynamics, especially in the absence of having a menhaden specific survey within the Chesapeake Bay. I think that this is just another tool as well, considered across the entirety of all of the options that we have in the document. That could provide us some of that much needed information that we're missing.

CHAIR CIMINO: Other hands around the table. Not seeing any, I will give the public a chance to comment directly to the motion. Anyone that wants to speak will have one minute. If you could introduce yourself.

MR. BEN LANDRY: Hi, my name is Ben Landry. I'm here representing Virginia's menhaden fishery. We oppose this motion for the very reason that Joe Grist laid out. It's a punitive measure to ensure that less fish is caught in the Bay. If the goal of this entire effort is to reduce fish at the beginning of the year, then catching it on the back end of the year should not be the goal.

Joe laid out the fact that you now have a coastwide quota, you have a Bay quota that applies to one company and one company only. The bait fishermen can catch whatever they want. A menhaden used for reduction, serves the same ecosystem role as menhaden caught for bait. Now you're creating 3, possibly 4 subregional bay quotas. Without the rollover provision it is just a punitive measure. I appreciate your consideration.

CHAIR CIMINO: I see some other hands, Will, go ahead.

MR. WILL POSTON: Will Poston with the Chesapeake Bay Foundation. I'll speak in support of this motion and touch on something that hasn't been mentioned yet. The utility of this option is really defining the range of alternatives for this Board's consideration, and without it the Board is fundamentally constrained in what it could consider in a final action period.

I think including this option in public comment will grant the Board flexibility in potentially making a final decision. Again, the utility of a quota period in the Chesapeake Bay Cap is to buffer against this changing availability and changing menhaden dynamics that will provide a buffer for Chesapeake Bay ecosystem needs, and again does not preclude this industry from fully utilizing its quota. This option would just prevent over utilization in the Chesapeake Bay.

CHAIR CIMINO: Go ahead and state your name.

MR. BRIAN COLLINS: Good morning, happy Cinco de Mayo there. My name is Brian Collins; I'm a citizen of Alexandria, Virginia. Regarding the amendment, I think there is a major flaw that has not been considered, and that is that you all, I'll say it like that, authorized 277 million pounds of menhaden to be caught all in Virginia.

I'm not sure you all ever think of it that way, 126 thousand metric tons, granted the industry can all be caught in Virginia, even though we know there are other areas. It doesn't appear there is any acknowledgement that the highway along the eastern shore of Virginia into the Bay is crucial for the population that is actually in the Bay. I'm not saying I'm technically certain of this. But I think it's highly likely that industry could cut off the flow into the Bay, and they do that. They fish heavily along the eastern shore. Essentially what we're saying is there is no need to leave any menhaden behind for the wildlife, the osprey in collapse, striped bass in collapse, all-time lows in blue crab.

CHAIR CIMINO: Thank you, Sir. Other hands, Pete, go ahead.

MR. HIMCHAK: Thank you again, Mr. Chairman. This comment made at the Board table, whereby the justification for no rollovers. Was that in a particular interval? If there was an underage and, in another interval, there is another underage.

Then you would be learning something about the entry of menhaden movements in and out of the Bay. Well, that doesn't seem like a justification for not having rollovers. If there is an underage and you allow for a rollover, you will still know that there were fewer fish caught in whatever interval you're being measured.

CHAIR CIMINO: That is all the hands I see in the room, so I am going to come back to the Board. Are we ready for the question? Do we need a caucus? Okay, one minute for caucus. All right; I think one thing to consider before I ask the question on the motion. I think part of the PDTs concern was that perhaps this did not fit with the intent or the statement of the problem. I think the Board does need to consider the additional language for adapting it may also need to be included if this does pass.

MR. BOYLE: Just a follow up, Mr. Chair. If this does pass, I will also need to come to the Board for how the Board would like us to handle the overage provision.

CHAIR CIMINO: To the question, and I can read this very brief motion with a lot of numbers. **Move to add a no rollover provision to Section 3.2.2.3. All of those in favor, please raise your hand.**

MS. KERNS: Rhode Island, Massachusetts, Connecticut, Pennsylvania, Florida, Georgia, South Carolina, North Carolina, Maryland, New Hampshire.

CHAIR CIMINO: All of those opposed to the motion, please raise your hand.

MS. KERNS: Maine, Delaware, Potomac River Fisheries Commission, Virginia, New Jersey, New York, New Jersey no.

CHAIR CIMINO: Null votes.

MS. KERNS: New Jersey.

CHAIR CIMINO: Abstention.

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

CHAIR CIMINO: Okay, so the motion passes 10 to 5 to 2 to 1. All right, so we gave a preview of what would happen if this motion passed, and now that it has, I would like to hear some comments on how this now may change the problem statement. Then as James pointed out, the important discussion on how to handle quota overages. Thoughts. Matt, you had your hand up?

MR. GATES: I would like to wait, I had a thought there, but I do have some thoughts on this when the time is right.

CHAIR CIMINO: Okay, we'll let James get us started.

MR. BOYLE: Just as a reminder of like what the PDT discussed when considering this option is, and as I alluded to a little bit earlier in the questions is that if you have a no rollover provision there are a few ways you can go. Either you have every quota period, an overage in a single quota period simply comes off the total Bay Cap from that period. The Bay Cap is lowering as quota periods are lowering, that is number one. Another way would be what the PDT had drafted in our last meeting, and then once we removed the no rollover option this was what was removed, which is that in overages of the first early quota period, so 1, 2 in a 3-quota period system or 1, 2, 3 in a 4-quota period system.

Those would be distributed to the end, oh no, sorry, no rollovers. But an overage in the final quota period, the upshot of that was the overage in the final quota period would come off the total Bay Cap. Those were two options that the PDT had discussed as ways to move forward with this. Obviously, we can consider those also open to other suggestions from the Board.

CHAIR CIMINIO: Matt, are you ready?

MR. GATES: I was going to address some issues that the problem statement starts with. Right now, the problem statement talks about the need for reducing or distributing the catch throughout the quota period. I think one part missing from that is something I think we saw in an earlier draft. The Board initiated this action as a precautionary measure, not just willy nilly. Certainly, it was a precautionary thing, so I think that is something we need to include in there.

CHAIR CIMINO: To that, Toni.

MS. KERNS: I am going to ask this Board to be very specific, because the PDT cannot read into your minds. Why are we being precautionary? What is it that you want the PDT to put into their statement of the problem?

CHAIR CIMINO: Matt, did you have a follow up, and then I'll go to Allison.

MR. GATES: You can go to Allison first and then I'll say something.

CHAIR CIMINO: Okay, go ahead, Allison.

DR. COLDEN: I was also struck by the problem statement, and it's already been touched on once during the discussion today that there are several motivations, I think, based on our Board discussion. I did note this morning, looking back at some of our previous documents for the Chesapeake Bay.

A Precautionary Work Group Report came out a year ago, and there was a lot of discussion around initiating that work group. There was a lot of discussion around the outcomes of the report of that Work Group, and so I can understand how over the course of more than 12 months of discussion that has led up to today's meeting in this Draft Addendum, that those conversations have ebbed and flowed and evolved over time.

I do think that what the problem statement is currently lacking is information, some of which was captured in the Chesapeake Bay Work Group Report about concerns about changes in availability. Whether those are driven by environmental changes, by fishery changes. But the dynamics that we were observing in the Chesapeake Bay in addition to just the bait fishery dynamics.

But also, some of the ecosystem and ecological dynamics that were sort of the impetus for kicking off that workgroup report, and that's where we get into some of the multiple objectives of this document that were discussed earlier relative to the quota periods.

We have options that more evenly distribute the harvest across the entire season, which was something that was in certain cases related to the ecological concerns. We have things that move options further, move more effort or more landings further into the season, which is related to some of the ingress concerns.

I think that as drafted the options in the document really capture those multiple conversations that we've had, and the multiple motivations that have been expressed by this Board, but that the problem statement in the background doesn't necessarily reflect the totality of what is seen in those options. If it could be drafted to reflect not just that sort of ingress concern, but also some of the ecological concerns, I think we would have a more complete background.

CHAIR CIMINO: Further thoughts. I think it would be valuable to have a discussion about the overages. Go ahead.

MR. BOYLE: A follow up question to that one. If the even distribution is responding to the ecological concerns discussed at the Board, can you be more specific on how that is achieving those goals that we can put into the document.

DR. COLDEN: Okay to respond, Mr. Chair? I don't want to sort of speak single handedly for everyone around the table. But one of the things obviously that came up in our work group was extensive conversations about ospreys, for example, and the concerns about May through July and August, being when fledglings are most in need and the predatory demand of osprey in the Bay are the highest. Things that redistribute that heat in the summer are things that are more likely in my mind reflective of the ecological concerns.

CHAIR CIMINO: Joe Grist.

MR. GRIST: I want to go back to the whole discussion on overage and payback from the same gear, as I'm understanding it. Operationally that can be very challenging. Maybe we can respond quick enough from the first segment, and apply that to figure out what the last thing, whatever that looks like could be, maybe. There is an in between segment we'll be working off of too.

If I'm hearing some discussion correctly, the thought is we would cut in season, if we saw an overage in say segment 1, segment 2, we're responsible to cutting segment 3 or 4 to make up for that overage. Operationally, the way the system works today that would be extremely difficult to do. I understand the comments that were made earlier about constantly reacting to a new system.

The last time I remember we implemented something around this Board in one of the more recent meetings that requires a state to change how they did things, we gave them 2 to 3 years to implement that. We were reasonable about it. They want this in place for next year, is my understanding around the Board. I'm not going to be able to do that.

Let's be realistic about some of these recommendations operationally, because again, we're the ones having to do it and it's easy to say we'll change your system and all that. It is not that easy to do in a short amount of time. I need some resources; I need the time to plan for something like that. Even then, short segments are very hard to manage on minimal weeks.

I just would like to keep some reality in managing those. If we are going down this path, at least make it where it is realistically achievable. Otherwise, Virginia is going to be kind of set in a really bad spot trying to achieve something we may not be able to achieve. For the state directors around the table I think you know what I'm talking about. We don't' like to be set up for failure.

MS. MESERVE: I think if I understood the proposal properly that an overage in an early period would be paid back in a same year later on. It seems like there is not enough motivation in that situation to uphold the intent of the quota periods, so it would essentially allow all the harvest to happen in the first period, and the only payback would be like you can't harvest in the third period to stay within the Bay Cap.

I think the only option I'm seeing to include, along with the no rollover option is that an overage is paid back in the same period in the following year. That would be my suggestion, and that was one of the things that the PDT removed, along with the rollover being prohibited. It seems to me that those two things both have to be in there. The quota period deduction in the next period has to be back in there if the rollover is prohibited.

MR. BOYLE: Just to clarify, so in that scenario you take it from the same period the next year and the total Bay Cap is lowered by the same amount the next year, right?

MR. LaFRANCE: Can I ask a question about that?

CHAIR CIMINO: Go ahead.

MR. LaFRANCE: The total is reduced in the next year, but also that individual time section. That particular quota period would be reduced. For example, if you overaged in this year in the first period then the overage would be reduced the following year in the same period. Okay.

CHAIR CIMINO: Toni.

MS. KERNS: Is it the Board's intention if the Bay Cap was not exceeded in that first year to still have the entire overage from that first period come out in the second year, so in essence lowering the Bay Cap in the second year, even though there was no total overage?

MR. LaFRANCE: If I could respond. My own perspective on that would be, you wouldn't change the overall cap, but you would reduce that first period in the following year, so more could be theoretically caught in the second and third using three periods.

MS. KERNS: You would redistribute what you took away from period one into period two and three?

MR. LaFRANCE: In the following year.

MS. KERNS: In the following year.

MR. LaFRANCE: Because currently you are basically saying, you took it in this year. The reason we were trying to discourage that means you won't be able to do that the following year. But I don't think it should affect what the overall Bay Cap is, that is going to be a separate discussion.

MR. BOYLE: If I can think back. This is what the PDT was discussing. If you have an overage in period one, you remove it from period one the following year and you have two options, either the Bay Cap is lower by that same amount or you redistribute it to the third period, as we have set up.

But then what happens if there is an overage in the last period? That is where the overage in Option B comes in, where we say specifically that overage in the final period that do not eclipse the total cap are not paid back, which is effectively a rollover. I'm looking for what the Board wants to do if there is an overage.

The overage in period one and two, then that's fine, we can distribute it to the next years of three. But then if there is an overage in that third period what happens? The option the PDT considered was that only for overages of the third period that do not exceed the Bay Cap, then the Bay Cap is lowered by the same amount, because you don't want to redistribute it earlier according to the objectives.

MR. LaFRANCE: If I understand your scenario, in the last period you are having an overage. There are two options there. There is an overage of the entire Bay Cap and then there is just an overage of that last period. In the event that it's an overage of the entire cap, is that mathematically possible, I guess is the question? Oh no, it is possible, I'm sorry, so yes in that regard as the status quo if you go over the cap, the next year's cap would be reduced by the amount that you went over. That is my understanding.

MR. BOYLE: Yes, but in the scenario where the total cap is not exceeded but just the last period. Then because we don't want to redistribute that overage that you're taking away to another period, an earlier period. What happens to that quota you take out of that third period?

MR. LaFRANCE: Wouldn't it be the same as before? In other words, the overage would then be reduced in the third period. I understand the distinction you are trying to make, but it is the third period that is being overaged, so you would just move it forward into the following year. That would be my sentiment.

MS. KERNS: But Rob, what we're trying to say is you said before that you are not going to penalize the Bay Cap in the next year if you don't exceed it. You said before that if there was an overage in Period 1 or 2 you would redistribute it back to Period 3.

But if the period three is where the overage occurred and the Board is telling the PDT you cannot redistribute to Period 1 and 2, then you are penalizing that overall quota in Period 3, because you are taking it out of Period 3. That second year's quota is effectively reduced.

MR. LaFRANCE: But it is being penalized, because the overage in that third quarter from before.

MS. KERNS: But there was not an overage of the full Bay Cap.

MR. LaFRANCE: I understand. I mean I see your point, but I guess my point is you're trying to get people.

MS. KERNS: It's changing the statement of the problem again. I'm just putting it out there for everybody.

MR. LaFRANCE: I don't know that that statement of the problem gets to that level of detail. That is the point of this particular issue. Now you're going to have this go to public notice and people can have their opinion as to whether that is or isn't punitive. I guess that is what I'm trying to say is, I think we should look at it that way, which is part of the reason we included it to begin with, because we wanted to have people have the option to discuss it.

CHAIR CIMINO: Okay, we have a few other hands. I saw Nicole first and then I'll go to Steve.

MS. COSTA: Okay, I just want to make sure that I am understanding, because I feel like some people around the room might be confused. What you are trying to explain is that if you have an overage in the third period in a three-period scenario, that in the following year if you don't exceed the entire Bay Cap, you would essentially be reducing the Bay Cap in the following year by taking it just out of Period 3. That is what you're trying to say. Even though we didn't have an overage to the full Bay Cap, you would be reducing it in the subsequent year, because there is no redistribution to Periods 1 and 2. I don't see any other options, unless the Board, maybe if we don't redistribute it to Periods 1 and 2, we could just redistribute to Period 2.

But that is still transitioning it to earlier, but it also is complex, because some of the options for the periods vary so drastically in the percentages. It's kind of hard to work through not knowing what those percentages are going to be, because in one scenario it may be okay, but in another we may not be comfortable with that.

CHAIR CIMINO: Yes, and I think this is precisely why the PDT didn't want to go there, because you know their understanding was that if we were not going to force a penalty on the overall Bay Cap if there was not an overage the year before, then this situation, well, new marching orders. Steve Train, and then Allison and Joe.

MR. TRAIN: We've already been through this, but I just want to read it one more time and see if it helps, because I can add one thing afterwards. On 3.2.2.1 Option B. Any overage of the quota period would be deducted from the same quota period the following year and redistributed. We all know that.

If the final quota period of the year incurs and overage that does not result in an overage of the total Bay cap there would be no adjustments to the final quota period of that year. What I see here is, if we're worried that because we're setting these numbers that period continues to be in violation, because they are going to catch up whatever was left over from other periods.

Then we either say, well we're going to accept it because we're not punishing then we just make that last period basically whatever is left every year or we state that it is going to be dropped from the quota. If we decided that this many fish should be harvested. In our science and around this table with all our knowledge we said, you can take this tonnage out of the Bay. I don't know why we would punish them for taking it all at the end if they didn't get it earlier.

CHAIR CIMINO: Allison and then Joe Grist.

DR. COLDEN: James, I guess I could, just asking for maybe a recounting possibly again. Since the no rollover option and the option to take an overage in the final quota period off the top of the cap were the two options in the document, put forward by the PDT and then later removed. Can you just state one more time those two options, and kind of the discussion with the PDT around those two options?

MR. BOYLE: Yes, so the PDT prefers the overage grafted option, Option B, which is where because we think it fits the objectives given to us the best, where you are moving harvest later. If there is an underharvest in Periods 1 and 2 but they catch up to the cap in Period 3 that is fine. For rollovers, they were kind of created in a, not a silo, but separately to consider the full range of possible rollovers.

You had no rollover, full rollover, partial rollover. There was then realizing that having a no rollover option meant we had to have some sort of overage option that wasn't Option B, to account for that third period. If there was an overage of that period that did not cause an overage of the total Bay Cap, but where Option B allows for that to catch up to the cap. A no rollover option would not allow that. Given the instructions, the PDT figured you can't redistribute that overage earlier to the year to allow the full Bay Cap to be harvested. Your only other option is to take it off the cap, but only if it is an overage of that period.

It can still be distributed from Periods 1 and 2 if its 3 periods. But then if it's that third one that comes off the cap. They drafted that to resolve that conflict, but then decided that it was preferable to remove the no rollover option to resolve that conflict, instead of having a situation where you would be taking off the Bay Cap that wasn't exceeded, because that is what they interpreted the Board's instruction to be.

DR. COLDEN: Thank you for that recounting. I think with the motion that just passed the Board, it seems as though the Board has interest in the no rollover option, and if that is the case and the PDT developed an option that would resolve that, and obviously the PDT has a preference for one option, the Board has a preference for the completeness of the no rollover option.

It seems to me as though, and I don't think it would be unprecedented for a management document to have kind of an if/then approach between the two sections, that if Option A is selected no specifics here. Option X is selected then Y in the next section.

If Option B is selected, then C or whatever, because one begets the other, even though they were created in silos, because those conversations happened differently. I see a situation in which, because they are complementary and linked to make this system work. Maybe that is just how we communicate those options in the document that makes that a feasible option.

CHAIR CIMINO: Joe Grist and then Mike Luisi.

MR. GRIST: Listening to the discussion and everything it dawned on me that this discussion sounds a little familiar for some of us on the Council. If anyone on the Council, Mid-Atlantic Council remembers, last meeting we had a very robust discussion about scup. We have three periods and the way the scup fishery works is the individual periods. They have overages to pay it back the next year, if and only if the overall annual is exceeded.

That management strategy works great. A lot of people that know about the scup fishery this year know that winter period had a very large overage this year, and we're going to be holding our breath through the year to see if there is an overage of the annual to see if that has to be paid back or not. But the really striking thing about that overage was it wasn't the industry's fault it was the manager's fault.

It happened; in fact, we had some industry members stop fishing when they knew we were probably at the quota. Managers couldn't act fast enough and we still ended up with a big overage. Some of this discussion reminds me of that Council discussion with scup. We have the rollover situation. If there is an overage in its segment, whatever we want to call these things. Say there is an overage in Segment 1, but if we get to the end of the year we didn't go over what this Board sets as the cap, then why does that segment need to do a payback next year, unless we're going down again the same path of we're basically setting multiple caps, which never was the intent of this addendum and document, from what I remember when this was introduced last August.

CHAIR CIMINO: Mike.

MR. LUISI: I'll be brief. I'm thinking along the lines of what Joe just brough up. I am struggling with a statement that I keep hearing, and the statement is, if there is an overage of the last quota period but there is no Bay Cap overage, what do we do? My question to this group is, how does that happen?

How do you have an overage of a period at the end of the year that is essentially kind of a catch all for all of the leftover slop that happens either the previous year or this year. That last quota period is everything that is left. How is the situation one that you exceed the quota period but not the Bay Cap, because it should be equal.

Whatever you catch in that last quota period should be all that's left over from all the other calculations for that particular year to the current 51,000 metric tons. I'm having trouble figuring out how you have an overage in the quota period at the end and not exceed the Bay Cap. Maybe somebody can help me.

CHAIR CIMINO: Yes, Toni is going to help.

MS. KERNS: Mike, I guess I have a question back to you, because the motion that was just passed said you are not allowed to roll over from period to period, so it is not a catch all, and you can't roll over underages, so it is not a catch all. It is only what is allowed for that period. Your rationale doesn't add up for me.

MR. LUISI: In 2027, if I exceed the first period quota by a thousand pounds, in 2028 the first period quota would have a thousand pounds less to start out, but quota period 3 could potentially have an extra thousand pounds added to it. That's the calculus that gets you to setting up the current year.

That last quota period with that additional thousand pounds should be the quota period quota, not the baseline quota that was assigned to it given the percentage. But what is established as that period's quota should be the quota, and then we should just be held to that. That is how I am thinking this through. I don't know if that addressed your question, Toni.

MR. BOYLE: I think there is a disconnect between what happens between years and what happens within a year. The no rollovers are referring to within a year. Even if between years you resolve some sort of overage so that the third period may be higher for some reason because of an overage in a previous year.

You still end up in a situation within that year where you could underharvest Period 1 and 2. You get to Period 3; you didn't allow rollover. All that underharvest is lost. All those pounds underharvested is theoretically lost in the no rollover situation. Then you could have an overage in Period 3 that does not exceed the Bay Cap. Then your options are either allow for redistribution the other way, earlier, or take it off the total Bay Cap. We could do to Allison's point we could do an if then, kind of linking overages and rollover options. But yes, I just want to be fully clear on what the Board would like to see as how do we resolve that last period overage.

CHAIR CIMINO: I have Eric, Erika and the list goes on.

MR. REID: We've been talking about this for two hours now. I think we've gone backwards quite a good way, that is my opinion, you know with if we do this then we're going to do this. But maybe we're not going to do this. I really think we should stop. Stop. No offense, James, but maybe you ought to take another shot at giving us this document again, because it is not ready for primetime.

I mean there are a lot of smart people here so confused I can't keep up with you. That would be my suggestion at this point. You can go on as long as you want, Mr. Chair, but I think we have to take a little pause here, before we move this document ahead. Thank you.

CHAIR CIMINO: Yes, it is certainly a thought, Eric. I don't know that we'll get to a comfort level on this that the Board isn't going to want to see it again before it goes out. But we do have some hands up, we'll try and get through them. I'll go to Erika, Emerson, Ben.

MS. BURGESS: Eric and I are having a mind meld across the table here. I had the same concerns when I read the document that was provided in the briefing materials. I am also hearing the conversation here and hearing more confusion among the Board members, whether something is an in-season or an intra-season action, and I think that needs to be more clear.

I think people are voting on things and having discussions about things and talking about very different things. We're going to get into a more and more complicated place. I think sending this back to the PDT, having them come up with more descriptive words in the document, to make sure that everyone feels comfortable that they are talking apples to apples is really important, the only way we're going to be able to move this conversation forward. Thank you.

CHAIR CIMINO: Noted, thanks. Does anybody remember what I said? Emerson, Ben, Doug.

MR. HASBROUCK: I am glad to hear the previous two comments from Erika and Eric. I've been getting a little frustrated, you know listening to this go around the table and back and forth. I'm wondering where we're going with this.

I mean if James and Joe, Mr. Chair were trying to get a sense of the Board, I don't think we've got any kind of sense of the Board here. If we're going to continue this discussion, I think we're better off if somebody puts a motion up and we debate the motion and we get to an end point, rather than just keep going around and around the Board, around and around the tables here.

CHAIR CIMINO: Okay, go ahead.

MR. BEN DYAR: I'll try to keep it brief. I wouldn't oppose some of those comments that were just made. But I did want to speak one point to the no rollover and just if this is an offset, it sounds like James is taking kind of notes on what is the intent. The intent was, when we're voting was to be rolled over the next year, not in season, and also that they would never expect the full cap.

Is it something that could be suggested that if there was this no rollover as voted, that it would only pertain to the first portion, it actually would not even pertain to the last. You wouldn't even have that issue. It doesn't have to pertain to that last piece if there is enough quota left in that last period, whether it's third, fourth, whatever it is.

Then they should be allowed to have that, since that is the cap that was determined. I think that was some of the comments, and that was the intent when we were voting. I don't know if that is an option, but wanted to put that out there.

MR. BOYLE: Yes, I guess I would just like to confirm my interpretation was referring to the rollover section, we're talking about within year. If it was the interpretation of the Board that we were talking about between year rollovers, then that is perfectly fine, and then this issue is still resolved.

We don't allow rollovers between years, we don't intend to allow rollovers between years, at least in the PDT discussion. That would not cause a conflict. I don't know if there is disagreement on the Board on what the motion meant.

CHAIRS CIMINO: I do have a few more hands up. I think we should be going along with the presumption that this is a document that needs to come back to us and we can start talking timelines soon. But I'll try and get through the other hands. Doug and then Allison, you had your hand again.

MR. GROUT: I was going to make a motion to reconsider a previous decision considering rollovers. It seemed like this is when we really started getting wrapped around the axels, because of the consequences of that now being part of the document, and how that would affect future year's quota, particularly when we're dealing with if the overage was in the third period now.

As a state that was on the prevailing side, I'm going to try that. I'm going to make **a motion to reconsider the previous motion** that we just, and see if we can change that and go back to looking at the document as is. We may end up having to delay it anyways, but it seemed like that was the thing that really got us wrapped around the motion.

CHAIR CIMINO: Thanks, Doug. This will require knowing Roberts Rules and math. Do we have a second to reconsider, another hand?

MR. GRIST: Point of order.

CHAIR CIMINO: Joe Grist.

MR. GRIST: I believe you need both the motioner and seconder to be from the prevailing side, so you've got to make sure they're from prevailing sides to do this.

CHAIR CIMINO: Malcolm, was that your hand as well for that same point of order? Okay. Your hand is to reconsider. I think it was to the point of order, correct, Malcolm? We still need a second from the prevailing side. Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Do you want me to read the list of prevailing states to maybe help people out? Rhode Island, Massachusetts, Connecticut, Pennsylvania, Florida, Georgia, South Carolina, North Carolins, Maryland and New Hampshire. Those states were on the prevailing side of the motion that was passed today.

CHAIR CIMINO: Thanks for that and for having that on the record. Not seeing any other hands.

EXECUTCIVE DIRECTOR BEAL: Not commenting on the motion or begging for a second. It seems to be, just listening into the conversation, a inconsistency with the use of the term rollover. I think some folks are viewing rollover as an underage, some folks are viewing rollover as an overage. In other words, what do you do with underharvested fish and what do you do with overharvested fish?

I think the term rollover, we may just want to change that or take that out of the conversation and say underages and overages, or something that is very clear what everyone is talking about. Because I think some people are viewing that term differently, and that may be causing some confusion.

CHAIR CIMINO: Yes, and one of those, it creates the situation that has been mentioned a few times, which is each segment would act as its own individual cap that would have to be tracked. I think that is one of the many issues we seem to be still struggling with.

I think one thing I would like to do is talk timeline on, does there need to be back and forth, potentially, as in the Board getting some chance to clarify, even by e-mail exchange as the PDT tries to work through this. Then just to know what would be that timeline. When would we see a document again for consideration to go out?

EXECUTIVE DIRECTOR BEAL: You just said it there, but I was going to say, just say hey James and the PDT give it another shot. I think that is not enough. They need some guidance from the Board. What are the underlying principles that this Board would like to achieve, or at least have the range of options achieved in this document?

There seems to be quite a range of that around the table right now. One of the things that is in the FMP now and has always been part of the FMP is that underage of the Bay Cap is not allowed to be carried forward to the next year and added to the subsequent year's quota. I assume most folks around the Board want to maintain that sort of premise of how the Bay Cap operates. Establishing a few of those definitive guidelines to the PDT I think would be really helpful. I don't know if we can do it today, I am reluctant to set up another working group, but maybe we need a working group report members to advise the PDT, or at least to be a sounding board for the PDT as the PDT moves forward. Any way staff can help we're willing to do it, but we just need some guidance from this group.

CHAIR CIMINO: Spud just volunteered to be the Chair (laughter).

MR. WOODWARD: What is the status of this motion, because we don't have a second?

CHAIR CIMINO: Correct, there was no second to the motion, the motion failed.

MR. WOODWARD: I would like to offer a second, because I think if we don't clear this up about the rollover, we're actually tying the hands of the PDT for the next iteration of this, because now we've got a motion that says no rollover. For the reasons that Bob was describing, rollover could mean too many different things to too many different people in too many circumstances.

If we remove that, will that not then allow the PDT to have the flexibility to address this differently, like has been discussed with terms that mean what we think they mean, which is underages, overages that sort of thing. I would offer a second so we can reconsider that and maybe clear that up if that is necessary.

CHAIR CIMINO: Yes, yes it would be. We do have a second from the prevailing side, so we have a motion before us to reconsider including the no rollover option. Bob, you should have sat closer.

EXECUTIVE DIRECTOR BEAL: I think we're just procedurally where we are right now, now that Spud has seconded this motion is that if this passes it is just setting up the Board's ability to reconsider that motion. By passing this it doesn't automatically null and void that previous motion.

This is just sort of allowing the Board to go back and talk about that previous motion and reconsider it, then take another vote if they want to either change the outcome of that previous vote or just sort of remove that motion from the record. Procedurally we're in a spot where it's going to take two votes to either modify or remove the motion that was passed earlier in this meeting.

CHAIR CIMINO: I'm glad all of that is on the record. With that, I'm not looking for a great deal of discussion on this, but I do want to know if folks need a chance to caucus or Roy, did you have?

MR. ROY MILLER: Mr. Chairman, my recollection is this would require a two-thirds vote, is that accurate?

CHAIR CIMINO: Yes. Sarah.

MS. SARAH PEAKE: Mr. Chairman, if we check Robert's Rules, I think a motion to reconsider is non debatable.

CHAIR CIMINO: Yes, thank you, Sarah. I just did want to know if folks needed a chance to caucus though. Yes, okay. We'll give one minute and we will ensure that the two-thirds applies here as well.

EXECUTIVE DIRECTOR BEAL: Joe, the motion to reconsider only takes a simple majority. I think folks may be thinking about the Commission's special rule on reconsidering final actions, where if a quota is set or an FMP was approved or along this conservation equivalency, et cetera, are approved. Those do take a two-thirds vote, but this motion does not fall under that Commission special rule, so it is a simple majority.

CHAIR CIMINO: Okay, somehow, we're getting rowdier so I would like to bring us back to the table. All right; I'm going to **call the question to reconsider**. **All of those in favor.**

MS. KERNS: Connecticut, New York, Pennsylvania, Florida, Georgia, South Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, Maine, New Hampshire, New Jersey.

CHAIR CIMINIO: Opposed.

MS. KERNS: Rhode Island, Massachusetts, and North Carolina.

CHAIR CIMINO: Null votes. Abstentions.

MS. KERNS: U.S. Fish and Wildlife Service and NOAA Fisheries.

CHAIR CIMINO: Motion passes 13 to 3 to 2 to 0. We'll bring up the motion. Okay, further discussion, Doug.

MR. GROUT: I just want to be clear on what proper process would be here. If I was to just essentially to say Move to remove the no rollover provision from Section 3.2.3 would that be accurate, vote this?

CHAIR CIMINO: Over to Bob.

EXECUTIVE DIRECTOR BEAL: Yes, essentially just revote on this, and if the will of the group is to not add a no rollover provision, vote against this. It doesn't have to be changed. Essentially, we're resetting ourselves to about an hour and a half ago and revoting on that motion we had this morning.

CHAIR CIMINO: All right, so a motion against this would simply keep it out of the document.

MR. GROUT: You're going to be allowing discussion on that, right? Well, again, if I may, Mr. Chairman. I feel we had a document before us that could have had some minor modifications to it and be ready to go out to the public. But when we started adding this in, as much as I saw what the state of Maryland was trying to do, give you know more options. It seems to have affected what the purpose of the document was, when you have to come up with a different document, and it was going to delay this going out for public hearing. I would support a no vote on this rollover position.

MR. ABBOTT: I support my fellow Commissioner's position. I think when we voted initially in favor of this, we didn't understand the bag of worms that we were creating. It's been in history that we've put a lot of things into documents that we knew weren't going to pass, or whatever. But this is one that has really caused too much of a problem. Again, I oppose this motion.

CHAIR CIMINO: Steve Train.

MR. TRAIN: I'm glad we are going to revisit this. When you're working on the water in the fishing season there are a million things that can affect what happens, whether it's a cold spring, cold summer, hurricane, oil spill, ship hit the bridge. You might not be able to get what you want to fish; you might not catch a quota. We've decided how much quota could possibly be harvested in this area and give the fishermen a chance to catch it at whatever time of year is available to them I think is a good idea, so I'm glad we're going to get a chance to do this again.

CHAIR CIMINO: Mike Luisi.

MR. LUISI: So much for breaking the ice, Mr. Chairman. We did have a lot of ice down here this year, and the ice was thick. Joking aside, I had no idea when I made the motion that something that would be more inclusive was going to create the chaos that ensued over the last hour and a half.

Personally, I am viewing this as, I prefer action over delay and more complications in us trying to solve some kind of math riddle that is just going to be overly burdensome. After having the hour and a half conversation it has opened my eyes to what would have to happen as a result of having these no rollover provisions in. At this point right now again, action over delay and having it be more complicated, I'm inclined to oppose adding the no rollover provision and I will change my vote on that.

CHAIR CIMINO: Other discussion. Need to caucus? I see a hand from the public, do you want to comment on this? Okay, please come up, you have one minute.

MS. KATE WILKE: Thanks, Mr. Chair, Kate Wilke with the Nature Conservancy. I understand not wanting to get wrapped around the axel and delay this action, but I just want to say, there has been a lot of discussion about punitive measures and trying to avoid them. This Addendum is not meant to be punitive; it is about responding to an ecological warning sign.

When menhaden aren't being caught during a certain quota period, it's a canary in a coal mine. It's a signal and the fish aren't available. Low catch rate means low abundance, and the quota period structure simply ensures that we're paying attention to that canary rather than ignoring it.

Importantly the fishery can still operate and harvest menhaden outside of the Bay. Just something to consider, sort of the heart of this Addendum. I'm not really in favor of doing or not doing, I just wanted to put that on the record. Thank you.

CHAIR CIMINO: Thank you, appreciate that. I have one other hand in the public; can you please state your name. I will start the clock.

MR. JASON JOYCE: Good, well I was going to say good morning, but it's good afternoon almost now. My name is Jason Joyce; I serve as the Director of Advocacy from the New England Fishermen's Stewardship Association. We just witnessed an hour and a half of a cautionary tail of, in my opinion, putting the cart before the horse as an agenda, and NEFSA respectfully, I'm their advocate for their fishermen.

We respectfully urge the Board to pause this action, refer these questions to the Technical Committee, ensure decisions are grounded in a full objective scientific review. We've seen this, I'm on several boards in my state and we've seen this happen. I agree with Steve. When Steve Train brought this up, I was like, you're right on.

As I listened it was like, wow, you just created a giant mess. My fear and our association's fear is that this is full of this and it's going to create more of a problem. We would like to see this go back and come back to your committee. Thank you.

CHAIR CIMINO: I'm going to bring us back to the table and just a reminder that as Bob stated, this motion is to add one item, so we are completely restarting, so go ahead, Matt.

MR. GATES: I don't think I'm ready to change my vote on this one. I only say that because I don't think we had a discussion where everybody understood what each other was saying. We were usings terms interchangeably. I don't think that discussion was reasoning through a resolution that I felt comfortable with, that we all knew what we were doing. I'm just not ready to take it out yet, but that is just explaining my vote here.

CHAIR CIMINO: Okay, not seeing any other hands, I'm going to call the question; and I'll read it once more. **Move to add a no rollover provision to Section 3.2.2.3. All those in favor, please raise your hand.**

MS. KERNS: Connecticut, North Carolina, Rhode Island.

CHAIR CIMINO: Those opposed.

MS. KERNS: Massachusetts, New York, Pennsylvania, Florida, Georgia, South Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, Maine, New Hampshire, New Jersey.

CHAIR CIMINO: Null, abstentions.

MS. KERNS: U.S. Fish and Wildlife Service and NOAA Fisheries.

CHAIR CIMINO: Motion fails, 3, 13, 2, 0. James puts the proper thing in order there, so 2 abstentions, 0 nulls. We've had quite a few comments about the need for this document to go back to the PDT regardless of whether or not there was this addition. I would like to get a feel for the will of the Board, unless there is an objection. Allison.

DR. COLDEN: I didn't mean to interrupt you, mid-sentence, Mr. Chair. Happy to have you finish your thought if you would like.

CHAIR CIMINO: I was going to say, unless there is a motion to try and move this forward then I would like to confirm a timeline on what happens between now and our next Board meeting.

DR. COLDEN: This is actually what I had my hand up about, about 10 or 15 minutes ago, whenever that was. You know I understand we have spent a lot of time on this document, and I'm not surprised. It's a very complicated document. However, we still have about 40 minutes left in this meeting and at least three sections of the document that we haven't discussed.

But I think the PDT could also use some guidance on and potential for clarity and simplification from the Board that we wouldn't have to spend time doing, if we do send it back to the PDT and come back to another meeting. You know I personally would have a preference to just kind of continue grinding through, if it is the will of the Board and your discretion, Mr. Chair.

CHAIR CIMINO: Yes, thanks. I think one other thing we can do is go onto the other items, and then get back to James, and we can lay out a little bit more of what the timing would look like. Nicole.

MS. COSTA: I just wanted to bring us back to a suggestion that Bob had made earlier. I think everyone is in agreement that there is a lot more work to be done on this document. I'm not against what Allison said, but I'm still not sure that we're going to be able to get through everything that people want to get through in the next 40 minutes. I'm wondering if it is possible to form a work group to work with the PDT, so that at the next meeting we don't have to delay this action further.

CHAIR CIMINO: Okay, if we do a work group I would like a motion, and I would like a motion that discusses potential membership. I have to admit I don't remember how the last working group was formed, somehow ended up on this, but I don't remember how we formed it. Toni.

MS. KERNS: The last time we had a work group we accepted nominations from the Board, and then the Chair identified who would be put on the work group, so usually 6 people. The Chair is not always the Chair.

CHAIR CIMINO: Isn't that right, John. We can do that. That would be something the Board would see through any exchange on nominations, is that correct?

MS. KERNS: Yes.

CHAIR CIMINO: Nicole, would you mind making a motion to that effect, if that is what you would like to see?

MS. COSTA: Sure, I can make that motion. **Move to form a Working Group of the Atlantic Menhaden Management Board to work with the PDT on the Draft Addendum for the next meeting in August.**

CHAIR CIMINO: Second by John Clark. Would either of you like to speak to it?

MS. COSTA: I just again think that this Board had a lot of changes they would still like to be made in the Draft Addendum. I think the PDT did a great job, but these matters are just very complex, and sometimes it's very difficult to review all of these items and get everything done in the first shot. I think the Board would just be more comfortable having more time.

But we also don't want to delay approving this for public comment past August, and then get into implementation issues for next year. I think by forming the work group we can provide some really constructive feedback to the PDT and get a more solid document back in August that would allow us to potentially approve it for public comment at that time.

CHAIR CIMINO: John, anything to add?

MR. CLARK: I agree with what Nicole said, you know the document because of what the Board already asked is very complicated, so it would be great to streamline it. I would just further suggest that perhaps just reconstituting the working group that we already had might streamline things, and would put you right back in it, Joe.

CHAIR CIMINO: Thanks, John. Further discussion, Rob?

MR. LaFRANCE: I agree with John on that last part. I think that the group that worked on this and put together the Working Group Report is knowledgeable on the issues and would have the opportunity to kind of come back and work with the PDT. I think we are trying to move this along. I do think you already have people educated on the topics, and I think it would definitely help them be more efficient.

CHAIR CIMINO: Well, those sentiments aren't specified either way in the motion, so I think I will want to hear more about the Board's will on that. I saw some hands here, was it David? Did you have your hand up?

MR. DAVID V.D. BORDEN: I was just going to say, I can support this. But I think to try to eliminate some of the confusion we heard today, it would be useful to have a time period, 1, 2 weeks, whatever, to allow Board members to submit written comments, so that the staff and the PDT get very specific advice on the revisions that come forward.

CHAIR CIMINO: Yes, I think we could do that with consent. Unless there is objection to that notion, I agree. Eric, you had your hand up?

MR. REID: Yes, I fully support the motion. Whether or not the working group is the previous working group, maybe some fresh eyes might be good with that. But I certainly hope that, but I certainly hope that, I was listening to Mr. Grist from Virginia, there are operational difficulties he's going to have with some of these options. I don't want to have a list of options that are not doable, so hopefully that will be some of the discussion, these aren't workable. Maybe we will remove some of the undoable stuff from this document.

CHAIR CIMINO: Okay, I think that's fair, and I would expect that our partners in Virginia will be paying close attention to this. I think we can handle this motion without necessarily defining who is on the Work Group. I think we should allow some time for past members to step down if they need to, and we can look at other nominations, I think through an e-mail process. Russel, I saw your hand up and then I'll go to Doug.

MR. DIZE: About three years ago, when I spoke and said we had a problem in the menhaden industry in Maryland. I didn't say what the problem was. I didn't say what this Board has done, in my opinion, has taken the reduction fishery and set them out like I laid out. That's the problem. You can't tell me that that is the only problem we've got with menhaden not coming into Maryland coming up the Bay.

You can blame it on the reduction fishery if you want, but I remember when three companies were working out of Virginia, Haney, Smith and the company working now. There are other problems, and I don't think that we're touching them at all. I don't think the last working group touched them. Sorry, but I just don't think it did.

There is something wrong where the Chesapeake Bay is not allowing fish to come up into Maryland. They've done it for hundreds of years and we've caught them. But all of a sudden, in the last three or four years they've stopped. In my opinion, you can put all the rules on the reduction fishery you want, but you are still not going to find the problem, until we fumble into what is causing it. We haven't done that.

It's our responsibility to find that and not just say, oh well, it's easy we'll blame this one group. I don't believe that. I'm coming from a history of pogey boat captains. My two nephews are captains, my cousin's husband was a captain, my brother was a captain for 40 years, has been part of Louisiana in the menhaden industry, and I just don't' think they are all the culprit. We've got other problems. I'm not saying they're not part of it, but I'm saying we should find something. That we should look for something else. Thank you.

CHAIR CIMINO: I saw Doug Grout; you had your hand up.

MR. GROUT: Now that we have half an hour left, my suggestion was going to be yes, let's vote up this Committee. But let's spend the time that the Board has here trying to work on some of the issues right now, as opposed to sending to a committee and then having debate and discussion about that later.

I think the last two items on our agenda we could easily move to the next meeting, if it's your will. But obviously we're not going to get through the entire Addendum right now. But I think this is more important that we start the discussion right now and then let the committee finish it up.

CHAIR CIMINO: Yes, and believe it or not we haven't really gone through that possibility of delaying the other two report outs to us. But I think with this motion that I would like to call, but I think this is going to formally be potentially, if this motion passes, the action as far as the Draft Addendum. It is going back and it's going back with a group that is going to be working on it.

If we do need to cover still further direction, I guess yes, I would rather stay focused on that and not lose time, or be doing everything by e-mail exchange alone. I guess, is there further discussion on this or can we, John?

MR. CLARK: Not further discussion, just curious as to whether we need to add anything in about the PDT asked if the Technical Committee could review some of the things such as the catch per unit effort. When I looked at the CESS Report, as I mentioned earlier, it was really great about the reduction fishery.

But I was just curious if we can get some economic analysis of what has happened to the pound net fishery in Maryland, since we heard so much about it. Surprised to hear from Mike that blue catfish are actually a fish caught and how that has affected the economics of the whole thing. Just interested.

CHAIR CIMINO: John, is that something that you would like to see as a separate item, kind of like what we have as some of these later agenda items, or is that something you're saying should be part of the back of it?

MR. CLARK: Right, for just to help when we do get back to the Addendum next time, just for our discussion. I mean there was some question about what is going on between the catch per unit effort and the pound net fishery compared to the reduction fishery. The economics, as I said, just something I am just curious about there, what the impact would be in terms of the effect on employment and so on.

CHAIR CIMINO: Toni.

MS. KERNS: John, we can look into the economics. I don't know if the state of Maryland has any data that they would be able to give us for the pound net fishery. But right now, the CESS report does have no specifics on economic data.

CHAIR CIMINO: One other thing, John, that I think it helpful that you noted, and I guess then the question would be the ability of this working group to possibly use the Technical Committee for any further analysis, or is that something that we would like to see specifically passed?

EXECUTIVE DIRECTOR BEAL: Generally, a management board task technical committee would work. But if the Board is comfortable delegating that to the working group, I think that is completely in bounds, and in this case probably reasonable. It sounds like this Board wants to be in a position to approve this document in August for public hearing. We would have to streamline the process to get it from where we are now to, approvable in August. Anything you can do to make that efficient is in bounds, I think.

CHAIR CIMINO: All right, so I would like Board members then to consider that, that with this motion that there is an assumption. This motion is clear that this Board Working Group will be working with the PDT. The PDT had mentioned that they would like to have the Technical Committee look at some of the analysis. I would say then that voting in favor of creating this working group is with the assumption that that would happen. Are we ready for the question on this? **All of those in favor, please raise your hand.**

MS. KERNS: Rhode Island, Massachusetts, Connecticut, New York, Pennsylvania, Florida, Georgia, South Carolina, North Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, Maine, New Hampshire, New Jersey.

CHAIR CIMINO: Any opposed? No. Abstentions?

MS. KERNS: U.S. Fish & Wildlife Service and NOAA Fisheries.

CHAIR CIMINO: No nulls. Motion passes 16 to 0 with 2 abstentions. Doug, I think to what you were saying. Again, unless there is anything more specific, I think we can consider this action item done until that Working Group is formed. Toni.

MS. KERNS: We'll ask for those nominations pretty quickly out of e-mail, but I wanted to, I think David Borden suggested some time to allow Board members also to provide edits. I think what we're going to do is send you a Word version of the document. I think we would most appreciate just like lining it, so track the changes and send them back to James, in order to most efficiently try to deal with that. Harder for us to read your minds when you give us concepts, versus you all doing the editing.

CHAIR CIMINO: The only other thing I think that we want to be sure is that it's again, not in a motion, but the idea would be that the Menhaden Board would be on the ASMFCs next agenda for a meeting, and then we'll pick all this up on where we are. All right, so with that we can move on to our next agenda item, the long overdue, sorry about that Caitlin. Oh, Bob, sorry.

EXECUTIVE DIRECTOR BEAL: Just the scheduling thing. If we can squeeze in the next two presentations and then my brief comments on the Chesapeake Bay work by 11:45 that would be great, a few extra minutes. Do we think that's workable?

CHAIR CIMINO: That would be my hope, yes. I'll turn it over to Caitlin for the TC Report.

REVIEW TECHNICAL COMMITTEE REPORT ON BOARD TASK

MS. CAITLIN CRAIG: Hi, everyone, my name is Caitlin Craig. I'm with the New York State Department of Environmental Conservation and I am the current Atlantic Menhaden Technical Committee Chair. I'm just going to go briefly go over the Menhaden environmental literature review that the Technical Committee conducted over the last few months. The literature, these stem from two Board tasks, one being to evaluate the possible effect of cold water on the Continental Shelf on menhaden migration, migratory patterns and particularly in relation to the timing of osprey arrival, nesting and feeding. The other task was to consider what role water temperature, dissolved oxygen levels, shoreline hardening and other environmental factors play in the local abundance of menhaden and other forage fish species in the Chesapeake Bay.

As a response to these tasks, the TC discussed that in order to provide a comprehensive, quantitative answer to these specific tasks would require significant amount of time and data. As a first step the TC prepared this literature review on just some key topics that are identified by the Board.

The review summarizes the current state of knowledge on these topics and can serve as a basis for further quantitative work if the Board so desires. This presentation is just going to focus on some high level take aways from each of the topics that we looked at, and for more detailed discussions you can see the full memo that was in the supplemental materials.

IMPACTS OF CHANGING ENVIRONMENT CONDITIONS

MS. CAITLIN CRAIG: The topics that I am going to go over briefly today will be the 2025 State of the Mid-Atlantic Ecosystem, menhaden environmental preferences, osprey timing and milestones, environmental preferences for other forage species, shoreline hardening impacts and then briefly just some TC notes on what we found.

The Northeastern, so first topic the 2025 Ecosystem Report. The Northeastern U.S. shelf waters have experienced a long-term warming trend in annual and seasonal temperatures. In 2024, however, the shelf environment was unusual compared to 2020 through 2022. The shelf waters were cooler, they were less saline and they were less buffered.

Also, the cold pool was larger and more persistent and it was also noted that the timing and availability of some species to different fisheries was reported as being different in 2024 than the other years. In 2024 the Chesapeake Bay did not actually experience the similar anomaly that was see non the shelf, and there was continued trends for above average water temperatures and low dissolved oxygen.

The 2024 shelf conditions related to the variability in the Gulf Stream, so when the Gulf Stream is further north, they are getting warmer waters in the Mid-Atlantic, but when it's further south they are getting cooler waters in the Mid-Atlantic. This variability with the Gulf Stream moving between the north and south will continue in the future, but this isn't necessarily going to reverse the long-term warming trends that have been seen.

Because of this, this makes short-term predictions about the environmental conditions more difficult. The next topic was menhaden environmental preferences. Adult migration patterns have been documented from tagging, fishery and ichthyoplankton survey data. Menhaden spawn offshores of the Carolinas in winter, and then begin migrating inshore and northward in early spring, with some reaching the Gulf of Maine by June.

Larger and older fish tend to migrate further, and then in fall they begin migrating south to the Carolinas again. Not all of the adults migrate, and this has been shown through tagging data, larval data and recent survey data, and these different datasets indicate that many adults actually stay in the Mid-Atlantic of the Southern New England region over the winter, and they spawn there. The highest larval abundance tends to be south during the winter, but larva present almost year-round up to Southern New England indicating a protracted spawning season across a wide spatial range. Larvae carried inshore to nursery grounds, and so recruitment to any one estuary or region is influenced by numerous environmental and biological factors.

This could include time and location of spawning, number of eggs produced, Gulf Stream patterns, temperature, wind storms and other factors. There is in general a large body of literature on the environmental factors influencing Atlantic menhaden recruitment and growth. However, there is less information on the environmental preferences of adults and how that affects the abundance and migration patterns.

Overall, in the literature, adults seem to have generally just a broad habitat envelope that they can encompass, but there does seem to be a preference for shallower, inshore waters. The next topic was osprey timing in the Chesapeake Bay. The birds arrive in March, and then they lay the eggs in April.

These guys hatch during mid-May through mid-June, and then fledging are periods mid-July to early August, and then departure for birds out of the area occurs late August to mid-October. No information on the environmental queues that are driving these particular events was found, and there is also no information on whether the timing has changed for these events over time.

The next topic was looking at other forage fish environmental preferences. The TC focused on a limited number of species that have been identified as important forage within the Chesapeake Bay either currently or historically, these include alewife and blueback herring or river herring collectively, and bay anchovy, juvenile spot and croaker.

Alewife and blueback herring, their spawning migration and the juvenile out migrations in the Bay tend to be triggered mostly by temperature. For bay anchovy they have a wide range of suitable temperature and salinity conditions and are seen up and down the coast. The biomass in the Bay peeks in summer and fall, and then winter biomass in the Bay tends to be correlated with water temperature.

For juvenile spot and croaker, they are tolerant of a wide range of conditions, more so than the adult fish. The last topic is shoreline hardening impacts and studies have found either that there is no effect on shoreline hardening on menhaden abundance when compared to the natural sites, or there is actually a higher abundance at these hardened sites.

The effects of shoreline hardening are variable across species and estuaries, so they can range from negative affects to no effects to positive effects on the overall species diversity and individual species abundance at these hardened sites when compared to the natural sites.

For the TC discussion overall from this literature review, we found that many factors within a species physical environment would influence the abundance distribution, and timing of population events such as spawning and migration. If the Board would like more quantitative information the TC requests guidance on the parameters and the relationships that would be of the greatest interest to the Board. We did want to note that even with more focused tasking that comes from the Board, the interesting datasets they might not be able to spatially and temporally sufficiently address the Board's questions in a quantitative way. That is, it, and with that I can take any questions.

CHAIR CIMINO: Thanks, Caitlin. I just want to remind folks that this report started out as a task from the Board, so I am going to keep questions and comments just around the table. Questions on the report. Emerson.

MR. HASBROUCK: Thank you, Caitlin for your presentation, very informative. But this Board also tasked the Technical Committee to consider the role of water temperature dissolved oxygen and other environmental factors relative to menhaden abundance off of Long Island, and particularly the Bays of Eastern Long Island. The report doesn't mention this additional tasking going to Long Island, so I am just wondering what the status is of the TC addressing that additional tasking.

MS. CRAIG: Yes, you're right. We didn't include specifically the Eastern Long Island information into the report, but I guess in general from the literature search, the studies from Eastern Long Island specifically to Long Island are pretty limited.

We weren't necessarily excluding our initial search, we weren't excluding that area we're limiting to the Chesapeake Bay, but it wasn't necessarily enough to make it into this specific memo, or really to differentiate it from what is kind of happening, just in general in the Mid-Atlantic, or the rest of the Atlantic Coast as what we noted in the report.

CHAIR CIMINO: Follow up, Emerson.

MR. HASBROUCK: I would request that either this TC memo be revised to include the explanation that you just gave, or if there is going to be a future memo based on any other feedback on some of the bullets you had up there, that it explicitly consider the issues for Eastern Long Island.

CHAIR CIMINO: Any other questions? John Clark.

MR. CLARK: Thank you for the work that the TC did, Caitlin, that was really impressive. I was just curious. In the materials we received an analysis done by Dr. Vale Levinson of Florida that I found it very interesting, although I didn't really understand parts of it with the wave with coherence.

But the upshot seems to be that they were looking at a hypothesis to actually leading to higher menhaden catches in Maryland pound nets because of the way it would concentrate them. Just curious if the TC would be having a chance to, I don't mean to be putting more tasks on the TC, but I would just like to see if they can take a look at that, the TC, and maybe comment on it for the next meeting.

MS. CRAIG: Yes, the TC has not received that material, but if the Board would like to task us with reviewing and commenting on it, we can add it to the list of things to do.

I'll look around the table. Any objection to that? Not seeing any, so John, we'll add that. Are there questions or comments on the TC Report? Great, we can move on. Thank you so much, Caitlin, job well done.

REVIEW COMMITTEE ON ECONOMICS AND SOCIAL SCIENCES REPORT ON BOARD TASK

CHAIR CIMINO: I believe we have Dr. Scheld on for the Review of the Committee on Economics and Social Sciences. Andrew, are you there?

MR. ANDREW SCHELD: Yes. Should I share, oh you've got my slides, cool. My name is Andrew Scheld, I'm a Resource Economist at the Virgina Institute of Marine Science, and representing the Committee on Economics Social Sciences of the ASMFC, who was asked to investigate how some of the proposed measures in Addendum II could impact jobs in the fishery, and specifically the reduction fishery.

ECONOMICS IMPACTS FROM CHANGES IN TOTAL ALLOWABLE CATCH

MR. SCHELD: I know that topic has come up in some of the discussion about jobs in other sectors of the fishery. To my knowledge there is not studies or data that have kind of been used to analyze that previously. Our approach was to review existing literature and draft the memo that was distributed to you all interpreting our research.

We were relatively lucky with this species. We often don't have as much socioeconomic data in studies as we might wish we did. But there were two relevant reports that had been published previously, one of which was funded by the ASMFC, the 2017 Report. The Kirkley Report was done, I believe preceding the introduction of the Chesapeake Bay quota cap initially, and so it was structured to sort of inform that initial discussion, so quite relevant to yours.

The key findings that are kind of relevant for discussion here, Kirkley 2011 Report explored regional economic impacts of the menhaden industry, including the effects of the reductions in the Chesapeake Bay quota cap. They noticed that the reduction sector supports about 519 full and parttime jobs, including 347 in Northumberland County specifically.

Their model estimated the output of their model indicated that reduction to the Chesapeake Bay quota cap corresponded to job losses of about 3.7 total jobs per thousand metric ton reduction, which would be 2.1 jobs in the reduction sector directly and then the 1.6 jobs in kind of supporting industries in the regional economy.

Whitehead and Harrison used a very similar approach and really kind of leveraged a lot of the data initially collected in Kirkley. It's hard to sort of interpret the results differently, because there is really a lot of overlap in the data that was informing their estimates. They didn't specifically explore impacts of reductions in the Chesapeake Bay quota cap.

They were looking more at the coastwide fishery. They estimated employment changes in Northumberland County at approximately 1 job per $45,000.00 dockside with adjusting for inflation that is about $60,000.00 in today's dollars. Limitations, every study has its limitations and caveats, of course. Neither study looked at kind of seasonal impact, if there were restrictions put on seasonal harvest.

They can't really inform that. We might expect though, I think it's reasonable to expect that if seasonal restrictions constrain periods of high catch efficiency or location of where that catch is occurring, it could limit the ability to maintain processing throughput and have some cost side and potentially employee side effects, but the studies didn't really provide any information there. The main limitation which we highlighted in the memo, and I'll note here, is that both studies used a pretty standard approach, Leontief Input-Output Models. Basically, they look at cost structures in an industry and in relation to the amount of outputs being produced, and then assumed that if output were to go up or down that the cost structure wouldn't change, essentially.

Employment would kind of scale up or down linearly with change in output. That little kind of graphic on the top right is showing that assumption. The solid line would show kind of that linear scaling between sector employment and fishery landings. Whether that is reasonable or not is difficult to discern with the reports that are available and the data that is available.

You know one might expect different types of responses like that dash line where you kind of have pretty stable employment until some point where it starts to rapidly decline, or that dotted line where employment impacts are also maybe not so substantial at initial reduction levels, and then there is some point at which the operation becomes non-viable in employment the sector collapses.

We don't really have any information to inform for where those threshold trigger points might be. But I don't think it is unreasonable to expect that they could exist and that we wouldn't just have sort of this consistent linear response. That is the main limitation, though again the approach they used is pretty standard for looking at these types of questions.

We did pass the memo on to industry, the reduction industry for reviewing and any comments and I noted that one of the scenarios Kirkley looked at in that 2011 Report was if there was no allowable harvest in the Chesapeake Bay, and the industry response was that that kind of is unrealistic to expect that that the industry would be at all operational in that scenario.

Again, I think the results from Kirkley that illustrates that is due to kind of that linear response in employment to reductions in quota. The next thing I'll note is that both of these reports highlighted that the reduction industry is a critical economic driver in this area., and that job losses could create structural unemployment. It's the industry that sort of ties everything together in this area.

It has obviously high levels of direct employment, but also strong levels of some indirect employment in insularly industries. Job losses could create, could kind of reverberate throughout sectors in that economy. Broadly we have recommendations for where additional research would be useful.

Getting at these drivers of employment and what responses of employment are to changes in quota or changes in landings would be quite useful. Again, the major limitation or major assumption of those prior models to that linear response. Cost and production structures for both reduction and bait.

There really hasn't been much done to our knowledge on the bait sector. Also, maybe updating data from these reports. You know Kirkley is getting, 2011 it's starting to be a bit in the distance. Then looking at demand drivers for the bait sector, that is also I think an important, or we think, an important area that has not been really explored too much. That's it. I'll take any questions or comments, thanks.

CHAIR CIMINO: Great, thank you, Andrew. I am going to stick with the Board questions on the report. Doug Haymans.

MR. DOUG HAYMANS: Thank you for the report. I'm fascinated as we get age on some of these predictive models. When we can look back and see whether they are actually right or not. Did the committee at all look at the fact that we've had 15 years and reduction of 34,000 pounds in the cap. Did we lose 125 jobs in the industry or not? That is the 3.7 jobs per thousand ton. Did anyone look at that instance?

MR. SCHELD: We haven't had the data to look at that. I agree, doing some retrospective analysis probably would be useful to inform this conversation. I will note that the other report, the Whitehead Report looked at changes in sector level employment in response to landings changes, if there was just any correlation there throughout.

This again was not focused on reduction, was coastwide, would primarily be picking up signals from the Bay sector, and they did not find strong correlation there. But again, bait sector could be quite different, in terms of employment dynamics. Yes, I agree. I don't know, the CESS didn't have sort of the data available to investigate that, but certainly something worth looking into.

CHAIR CIMINO: Allison.

DR. COLDEN: Well, Doug kind of hit my question right on the head. We've had observations since the Kirkley Paper was published and actually since that publication have reduced the Bay Cap by 50,000 metric tons, and so yes. I would be curious as well to see if those predictions have actually come to fruition.

I think the one thing that struck me, and one of the most important caveats of these models, which I am not super familiar with, is the assumption that there is no adaptive behavior in the fishery. I am wondering if Andrew or anyone else has some thoughts on, if we haven't seen a dramatic reduction in employment in the fishery why that might be. Are there changes in the way that it is operating that are offsetting those potential losses?

MR. SCHELD: Yes, so like a general comment. I think the linear assumption is very strong, that is kind of getting at what you're noting, not having sort of adaptation or input substitution, right. It's often found most difficult to, or companies often are cutting employment. Cutting jobs is one of the last sorts of measures that companies often do.

They will kind of reorganize production structures. This again is not menhaden specific, but I think generally true. Companies will kind of reorganize production inputs to kind of minimize cost without necessarily cutting employment. That is one of the last sorts of cost cutting measures that companies often take. That said, there is a lot of potential. I think businesses often have a lot of potential to kind of adaptively respond to changes in prices and cost. Building a model that would incorporate that would introduce a lot of realism in how the sector operates. It doesn't exist here, doesn't mean it couldn't in the future, but it doesn't exist right now. There certainly are like existing economic models and frameworks that accommodate that sort of thing, it just isn't used here. I don't know if that totally answers your question.

CHAIR CIMINO: Yes, we get the thumbs up. I'll look around the table. I do want to note that both of these presentations from the Technical Committee and economics are in the meeting materials. In the interest of time, for members of the public that would like to comment on these, I would ask that they do that through written comment provided to James. James will ensure that that gets out to the Board. I think that is going to be the easiest way for all of us to digest your comments wile we're waiting to digest our lunch. John Clark, you had your hand up?

MR. CLARK: Thank you for the excellent report there, Andrew. I just would really like to see for the recommended additional research go forward, especially on the cost and production structures reduction in bait. Just curious, I mean the result of this Addendum could be that it would be transferring harvest from reduction to bait, and how does that affect employment in both sectors, how does that affect the revenue, and that would just be something really interesting to see.

MR. SCHELD: I don't know if we would amend the memo or how we would address that, but we will take that into consideration and I'll bring that back to the full CESS the next time we meet. I just want to follow up with one final thing on my previous response about the sort of adaptive behavior response.

I think it is important to kind of recognize, and maybe I'm repeating myself, so sorry if that is the case. When firms have this kind of adaptive response and employment is maybe one of the last cost-cutting measures that a business would take, that is what sets up that potential for a big trigger event, for a threshold past which a business either can't operate at all or has to make very substantial employment cuts.

I think that is a concern. We don't really know, certainly reductions in Chesapeake Bay quota should be expected to impose cost on the reduction sector. How they manage those costs is not totally clear given the analyses and data we have presently. But I would expect, you know if they are adapting, there probably is some threshold past which you might see employment kind of reduced dramatically. I don't know if that clears it up or makes the water muddier, but I felt I should get that out there.

CHAIR CIMINO: Are you good, John? Appreciate that. Any other questions or comments from the Board? Not seeing any, Andrew, thank you again and thanks to the TC and the CESS for all the work to date. I think we'll always have some more questions for you guys.

UPDATE ON CHESAPEAKE BAY RESEARCH REQUEST FOR PROPOSALS

CHAIR CIMINO: With that we can move on to the next agenda item and I'll go to Bob.

EXECUTIVE DIRECTOR BEAL: Just really quickly. I think as most folks around the table know, Congress appropriated 2.5 million dollars to do menhaden research within the Chesapeake Bay and that money will be moving through ASMFC. We don't have access to that money yet, and that is not critical of our partners at NOAA Fisheries. I think they got their final portion on; I don't know three weeks ago. That money will be moving to the Commission. The idea is that those funds will be spent on and only can be spent on research within the Chesapeake Bay. The roadmap for essentially menhaden research in the Bay that was formed at the Virginia Institute of Marine Science in October of 2023 will be the starting point for all this work.

For folks who don't recall, that roadmap was developed by folks from VIMS, other Virginia universities, University of Maryland, Center for Environmental Sciences or Studies. There were industry representatives there, recreational representatives, VMRC reps, Maryland reps. There was a broad group of folks that got together and developed this road map. It has essentially three parts, ecology, fishery impacts and economic importance of the fishery.

Those will be the primary focus areas for the funding. We don't know exactly how much ASMFC will receive. We don't know if money will be taken off the top at NOAA Fisheries before it moves to us. We're at the staff level right now developing an RFP, and we're kind of contemplating as, should it be multiple RFPs for each of these categories or one combined RFP? We're leaning toward one combined RFP with different focus areas that folks can submit proposals.

We're also working on the establishment of a review panel that will obviously look over these proposals that we receive and make the selection. That's where we are. We're waiting on the funding from NOAA, but we are initiating the RFP development. We're kind of ready to hit the ground running, once we have access to those funds and happy to answer any questions.

CHAIR CIMINO: Questions for Bob, Rob.

MR. LaFRANCE: Bob, I'm very happy that you were able to finally get that money. It's great that it happened that way. I guess my question is the study report that you mentioned. Sir, can you get that to James, so we can maybe other folks, I think there is a lot of information in it. I would love to be able to review that. I am always happy to talk more about that particular study, because I think it is critically important.

EXECUTIVE DIRECTOR BEAL: Yes, we can send that around to the Board. James already has it, because he sent it to me, so yes, we're in good shape.

CHAIR CIMINO: Any other questions on this? Emerson.

MR. HASBROUCK: Thank you, Bob, for your review and thanks to everybody whoever it was that helped to get that funding through Congress. What I'm wondering, is that 2.5 million dollars sufficient to fund those three components, and was that the total ask, or was there the anticipation that other funds might be needed as well?

EXECUTIVE DIRECTOR BEAL: That was the total ask and that was the price that was attached to this work in 2023. It may not be enough to cover real in-depth work for all these three different categories. We'll just have to see what we get as far as proposals. This is just one year funding from Congress; it's not a recurring 2.5 million. There was contemplation for money to come out of the Commonwealth of Virginia. I'm not sure the status of that, but as far as I know it has not been approved. I think we've got 2.5 million to work with right now.

CHAIR CIMINO: I don't see any other hands, Bob, so I think we're all set there. We do have one more action item, which is election of a Vice-Chair. Doug Haymans.

ELECT VICE CHAIR

MR. HAYMANS: Though I don't know why anybody would want to sit in that seat, it is my honor to recommend to make a **motion for the new Vice-Chair to be Ms. Nicole Lengyel Costa from the great state of Rhode Island**, my new best friend.

CHAIR CIMINO: Do I see a second for that? I'll go with Eric and thank you, Nicole for being willing to. Is there **any objection to the motion? Not seeing any**, Nicole. I know of a work group that you might be interested in too.

OTHER BUSINESS

CHAIR CIMINO: With that we do have one item under Other Business that I think we can knock out quickly.

ADVISORY PANEL NOMINATION

CHAIR CIMINO: We do have an AP nomination that came in, so I'll turn to Tina.

MS. TINA L. BERGER: In your final supplemental materials you have a nomination for Eric Lorentzen to join the Panel. He will replace Bob Hannah. He is both a seine net fisherman and an active lobsterman.

CHAIR CIMINO: Thank you, will of the Board. Nichola.

MS. NICHOLA MESERVE: It would please me to approve the nomination of Eric Lorentzen from Massachusetts to the Menhaden Advisory Panel.

CHAIR CIMINO: Do I see a second? Matt. Any discussion on the motion, **any objection? Not**

seeing any, so that passes. We have a new AP member, thank you.

ADJOURNMENT

Any other business to come before us? Not too bad, not too bad. Motion to adjourn. Malcolm second, Joe Grist, all right, well thank you, everyone.

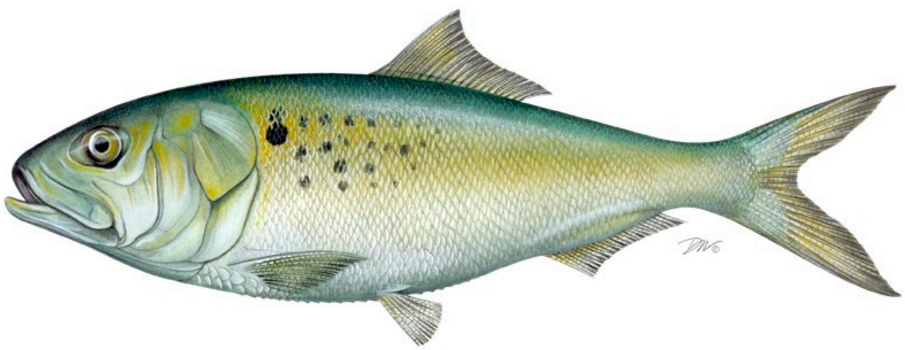
(Whereupon the meeting adjourned at 11:30 a.m. on Tuesday, May 5, 2026)

Draft Document for Board Review. Not for Public Comment

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM II TO AMENDMENT 3 OF THE ATLANTIC MENHADEN INTERSTATE FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

Chesapeake Bay Reduction Fishery



This draft document was developed for Board review and discussion at the August 2026 meeting week. This document is not intended to solicit public comment as part of the Commission/State formal public input process. However, comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. Also, if approved, a public comment period will be established to solicit input on the issues contained in the document.

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

August 2026

Document revised on July 23, 2026
with addition of socioeconomic section

Draft Document for Board Review. Not for Public Comment

Atlantic States Marine Fisheries Commission Seeks Your Input on Atlantic Menhaden Management

The public is encouraged to submit comments regarding this document during the public comment period. Comments will be accepted until 5:00 p.m. EST on **DAY, MONTH 2026**. Regardless of when they were sent, comments received after that time will not be included in the official record.

You may submit public comment in one or more of the following ways:

1. Attend public hearings pertinent to your state or jurisdiction.
2. Refer comments to your state's members on the Atlantic Menhaden Board or Atlantic Menhaden Advisory Panel, if applicable.
3. Mail, fax, or email written comments to the following address:

James Boyle
Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland St., Suite 200 A-N
Arlington, Virginia 22201
Fax: (703) 842-0741
comments@asmfc.org (subject line: Atlantic Menhaden Draft Addendum II to Amendment 3)

If you have any questions please contact James Boyle at jboyle@asmfc.org or 703.842.0740.

Commission's Process and Timeline

Date	Action
October 2025	Atlantic Menhaden Board Initiates Draft Addendum II
November 2025 – July 2026	Plan Development Team Develops Draft Addendum II for Board Review
August 2026	**Atlantic Menhaden Board Reviews Draft Addendum II and Considers Its Approval for Public Comment**
August– October 2026	Public Comment Period, including Public Hearings
November 2026	Board Reviews Public Comment, Selects Management Options and Considers Final Approval of Addendum II
TBD	Provisions of Addendum II are Implemented

1. INTRODUCTION

The Atlantic States Marine Fisheries Commission (ASMFC) coordinates Atlantic menhaden (*Brevoortia tyrannus*) management in state waters (0–3 miles from shore) under the authority of the Atlantic Coastal Fisheries Cooperative Management Act and has done so through an Interstate Fishery Management Plan (FMP) since 1981. The states of Maine through Florida have a declared interest in the fishery and are responsible for implementing management measures consistent with the FMP. For the purposes of this draft addendum, the term "state" or "states" also includes the Potomac River Fisheries Commission (PRFC). Management authority in the Exclusive Economic Zone (3-200 miles from shore) lies with NOAA Fisheries.

At its October 2025 meeting, the ASMFC's Atlantic Menhaden Management Board (Board) approved the following motion:

Move to initiate Addendum II to the Atlantic Menhaden FMP to address Chesapeake Bay management concerns. The addendum shall develop periods for the Chesapeake Bay Cap that distributes fishing effort more evenly throughout the season and a range of options to reduce the Bay Cap from status quo up to 50%.

Since then, the Board has provided additional guidance on the purpose and range of options for inclusion in this draft addendum.

2. OVERVIEW

2.1 Statement of the Problem

The availability of menhaden in Chesapeake Bay may be affected by changes in total abundance, size distribution of the population, and timing of spatial distribution in the Bay, which can be caused by fishing pressure, environmental conditions, habitat suitability, and/or changing predation pressures on a limited spatial and temporal scale. Such changes in menhaden availability may affect the species' ability to fulfill its ecological and/or economic functions. Recent observations of below average commercial fisheries landings and concerning population trends in several species that use menhaden as prey within Chesapeake Bay suggest that availability of menhaden in Chesapeake Bay may be changing due to one or more of the above drivers. Of the predator species included in the ecological reference point (ERP) assessment, which accounts for menhaden's role as a forage fish, the latest coastwide assessments indicate striped bass is overfished, bluefish are presently rebuilding, weakfish are depleted due to high levels of natural mortality, and spiny dogfish reproductive output is declining but stabilizing (ASMFC, 2024).

Although there are currently not sufficient scientific data available to comprehensively characterize the abundance and distribution of menhaden throughout Chesapeake Bay and the influence of fishing pressure on menhaden, the Commission has been using proactive measures to manage this species in the face of uncertainty and to support both ecological and fishery objectives. Specifically, since 2006, the Chesapeake Bay Reduction Fishery Cap (Bay Cap) has limited harvest of menhaden by the reduction fishery (henceforth, "reduction harvest") within

Chesapeake Bay. This draft addendum responds to concerns that the Bay Cap does not control how harvest is distributed throughout the fishing season and that the amount of the Bay Cap does not reflect changes to the coastwide total allowable catch (TAC).

Chesapeake Bay Reduction Fishery Cap

The first issue addressed in the draft addendum is that the Bay Cap is not linked to the overall TAC. Large changes to the TAC without a corresponding change to the Bay Cap significantly alter the percent of the reduction landings (and total landings) that can be taken from Chesapeake Bay, a critical nursery area for menhaden. For example, because Virginia is currently allocated 75.21% of the coastwide TAC, and Virginia allocates 90.04% of their quota to the reduction sector, the current Bay Cap (51,000 mt) paired with a 100,000 mt TAC would allow 75% of the reduction fishery quota to be taken in Chesapeake Bay, but with a 300,000 mt TAC would allow 25% of the reduction fishery quota to be taken in Chesapeake Bay. Such variable outcomes may be inconsistent with the intent of the Bay Cap. The 20% reduction applied to the TAC in 2026, without a corresponding change to the Bay Cap, increased the percentage of possible reduction fishery quota taken in the Chesapeake Bay from 32% to 40%, a larger percentage than has been possible since 2017. The Board is concerned that without a change to the Bay Cap, future changes to the TAC could further shift that percentage. Additionally, changes to the Bay Cap can only be made through an amendment or addendum, meaning the Management Board is often unable to align the timeline for changes to the Bay Cap, if desired, with changes to the TAC. Therefore, this draft addendum considers a one-time reduction in the Bay Cap in consideration of recent or upcoming changes to the TAC and setting the Bay Cap as a proportion of the TAC so that it changes automatically with future changes to the TAC.

Timing of Menhaden Harvest

The second issue this draft addendum aims to address is that the Bay Cap is an annual measure without any associated controls on how reduction harvest is distributed throughout the fishing season. This leaves the potential for a concentration of reduction fishery landings in a short time period, as seen in 2023 and 2024, when over 50% of the Bay reduction fishery landings were taken in a 6-week period in mid-summer. When this occurs, it is possible that these higher-than-normal catch rates could affect availability of menhaden to other fisheries or predators, which is what the Bay Cap was intended to prevent. Consequently, this draft addendum considers establishing quota periods for the Bay Cap to redistribute reduction fishery landings across the reduction fishery season, rather than concentrating them in the beginning and middle of the season.

Revisiting the Bay Cap

Lastly, given the breadth of changes proposed to the Bay Cap in this draft addendum, the uncertainties about whether recent trends in Chesapeake Bay menhaden landings and availability will continue, plus planned research intended to help design a scientifically-based Bay Cap setting process, this draft addendum includes an option that would require a revisit of the Bay Cap provisions every three years at a minimum. Currently, there is no set timeframe for revisiting the Bay Cap.

2.2 Background

2.2.1 The Reduction Fishery

The commercial menhaden fishery is divided into the reduction fishery, in which menhaden are reduced into fish meal and fish oil, and the bait fishery, in which menhaden are harvested as a bait source for other commercial and recreational fisheries. Harvesting of menhaden for reduction purposes dates back to the early 1800s (fish oil) and the early 1900s (fish meal). The reduction fishery uses purse seine gear exclusively (also the dominant gear in the bait fishery). Reduction landings peaked in the mid-20th century (712,100 mt in 1956) and averaged approximately 129,000 mt from 2020-2024 (Figure 1). Participation in the Atlantic coast reduction fishery has declined to include roughly 10 vessels and one processing plant located in Virginia; as many as 147 vessels and 25 processing plants operated along the Atlantic coast from Maine to Florida historically.

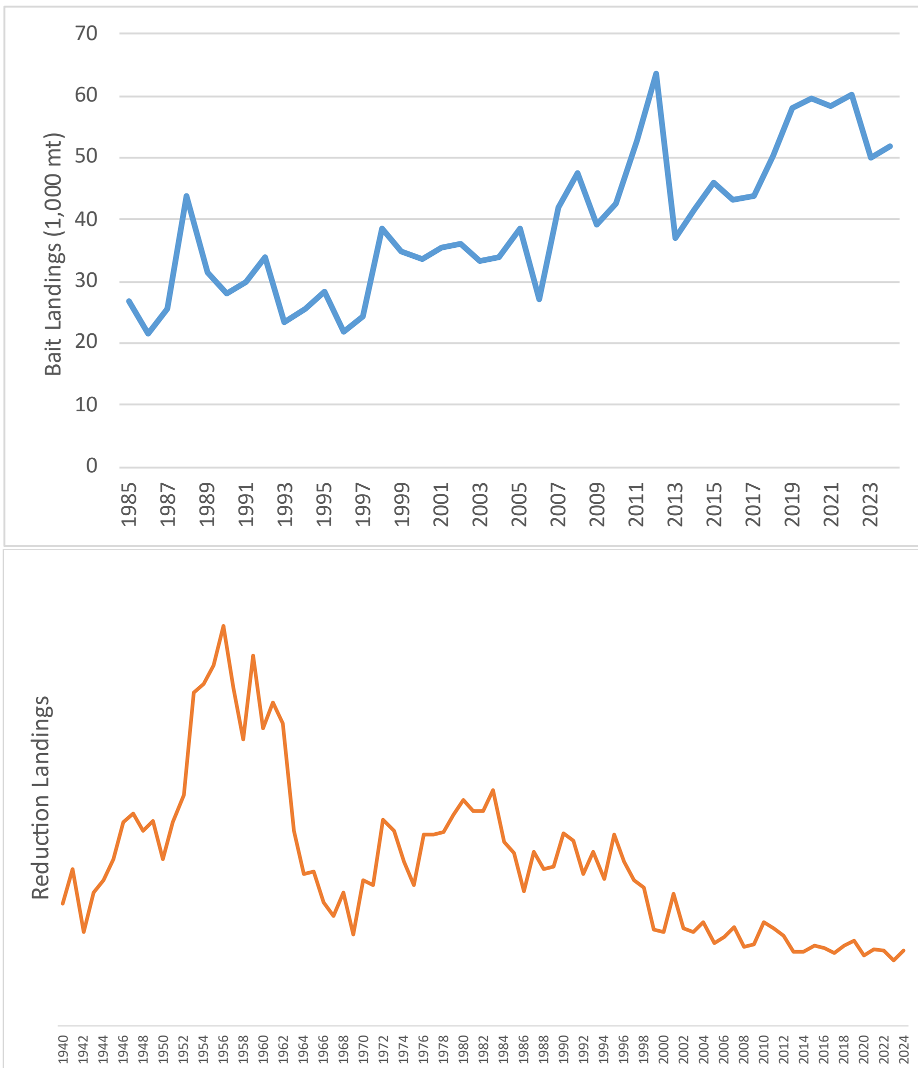


Figure 1. Coastwide reduction fishery landings (1940-2024) and coastwide bait fishery landings (1985-2024) for Atlantic menhaden (Note reduction landings values removed for confidentiality but are approximately an order of magnitude greater than bait landings).

Since 2013, total reduction fishery landings have been determined by the annual coastwide Total Allowable Catch (TAC) specified by the Management Board, the percent of the TAC allocated to Virginia by the Interstate FMP, Virginia's internal allocation of its quota among its fishery sectors, and the Virginia reduction fishery's performance with regards to its quota. Currently, Virginia's allocation of the TAC is 75.21%[1] based on landings from 2018, 2019, and 2021, and the purse seine reduction fishery's allocation of the Virginia quota is 90.04% based on 2002-2011 average landings. Accordingly, the Virginia reduction fishery has the potential to harvest 67.04% of the TAC.

Reduction fishery vessel effort occurs both inside Chesapeake Bay and outside in the Atlantic Ocean. In the last five years (2021-2025), about 50% of all reduction fishery effort (i.e., purse seine net sets) has occurred within Chesapeake Bay, down from about 75% in 2005, the year preceding the setting of the first Chesapeake Bay Reduction Fishery Cap (Figure 2). The Bay Cap prohibits additional reduction harvest within the Chesapeake Bay when 100% of the Bay Cap is harvested from Chesapeake Bay, which is defined as areas shoreward of the Chesapeake Bay Bridge Tunnel.

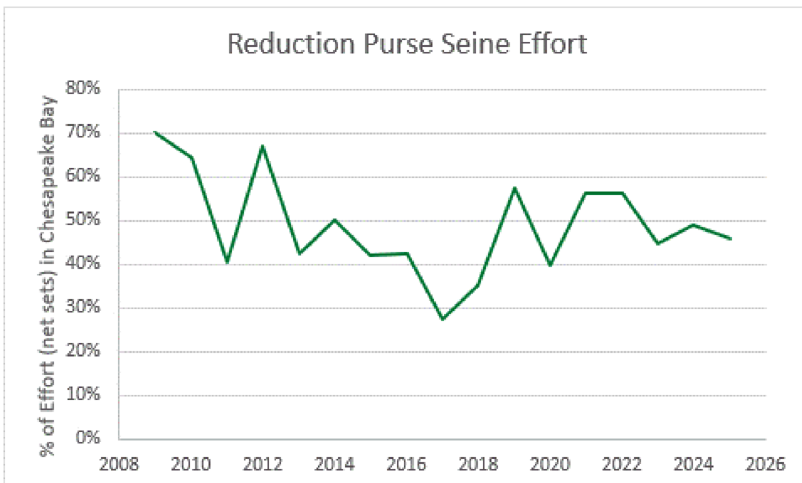


Figure 2. Proportion of Virginia purse seine reduction effort in Chesapeake Bay.

2.2.2 Bay Cap History

The Chesapeake Bay Reduction Fishery Cap was first established in 2006 as a precautionary measure in response to an increasing proportion of the total reduction fishery landings being harvested from Chesapeake Bay and concerns about the possibility of localized depletion. Through Addendum III to Amendment 1, the Bay Cap was set at the average landings from 2001-2005 (109,020 mt) to prevent the expansion of the reduction fishery in Chesapeake Bay while the necessary scientific studies were conducted to explore the potential for localized depletion and set a more scientifically quantified harvest threshold if needed. Additional Bay Cap management measures included mandatory payback of any overage in the subsequent

[1] The state-by-state allocations exclude 1% of the TAC that is reserved for the Episodic Event Set-aside.

year and an allowance to rollover unused quota to the following year up to a specified maximum. Notably, the adoption of the Bay Cap preceded the adoption of a coastwide TAC for menhaden, which did not occur until 2013 through Amendment 2.

Amendment 2 reduced the Bay Cap by 20% to 87,216 mt beginning in 2013. This 20% reduction mirrored the 20% reduction applied to the average coastwide catch from 2009-2011 that was used to set the first-ever TAC. (This was an ad hoc approach to set the TAC based on recent landings due to uncertainty in the 2012 stock assessment's projections; all subsequent TACs have been set using a stock assessment-based projection methodology). Amendment 2 also reduced the Bay Cap underage rollover maximum by 20%.

The next change to the Bay Cap occurred in 2018, when it was reduced to 51,000 mt in Amendment 3. Similar to how the Bay Cap was initially set, this amount represented an approximation of the average Bay reduction fishery landings from 2012-2016. This action again capped landings at recent levels as a precautionary management approach. Unlike the change to the Bay Cap in Amendment 2, this ~41.5% reduction in the Bay Cap did not correspond to the change made to the TAC in the same year (8% increase). Amendment 3 also removed the allowance for any rollover of unused Bay Cap (as well as any unused TAC) and established that unused quota from a region or state cannot be transferred to the Bay Cap to reduce an overage.

The Bay Cap has remained at 51,000 mt since 2018 (except in 2020 when it was reduced to account for an overage in 2019; reduction fishery landings from the Chesapeake Bay have always otherwise been below the Bay Cap). Since that time, the TAC has been adjusted three times, including a 10% reduction in 2021, a 20.1% increase in 2023, and a 20% reduction in 2026, all without any change to the Bay Cap (Table 1).

The history, intent, and setting process for the Bay Cap and TAC differ in notable ways. First, the Management Board sets the TAC through Board action based on coastwide stock assessment projections in comparison to target and threshold reference points. Since 2021, ecosystem-based stock assessments and reference points have been used, meaning the TAC is set to account for menhaden's role as a critical forage species on a coastwide basis. No similar approach exists to set the Bay Cap at a level scientifically determined to support forage needs in Chesapeake Bay; rather, recent landing levels have typically been used to set the Bay Cap, thereby preventing further expansion. Second, the TAC limits the total removals of menhaden coastwide by all fishery participants, in contrast to the Bap Cap, which limits only reduction fishery landings in Chesapeake Bay. Additional reduction harvest can take place outside of Chesapeake Bay, and additional bait harvest can take place inside of Chesapeake Bay. Third, the Bay Cap management measures can only be revised through an addendum or amendment to the FMP, whereas the TAC can be set by the Board through specifications (i.e., a Board vote) on an annual or multi-year basis. The result is that the TAC has changed with greater frequency, and changes to TAC and Bay Cap that do co-occur have not always been in the same direction.

Consequently, the amount of the Bay Cap as a proportion of the total TAC is variable over time (Table 1).

Table 1. History of coastwide TACs and Bay Caps.

Year	TAC (mt)	Bay Cap (mt)	Bay Cap as Percent of TAC
2006	-	109,020	-
2007	-	109,020	-
2008	-	109,020	-
2009	-	109,020	-
2010	-	109,020	-
2011	-	109,020	-
2012	-	109,020	-
2013	170,800	87,216	51.06%
2014	170,800	87,216	51.06%
2015	187,880	87,216	46.42%
2016	187,880	87,216	46.42%
2017	200,000	87,216	43.61%
2018	216,000	51,000	23.61%
2019	216,000	51,000	23.61%
2020	216,000	51,000*	23.61%
2021	194,400	51,000	26.23%
2022	194,400	51,000	26.23%
2023	233,550	51,000	21.84%
2024	233,550	51,000	21.84%
2025	233,550	51,000	21.84%
2026	186,840	51,000	27.30%

*2020 Bay Cap was reduced from 51,000 mt due to 2019 overage.

2.2.3 Seasonality of Chesapeake Bay Reduction Fishery

By Virginia law, the Chesapeake Bay purse seine reduction fishery is permitted to begin on the first Monday in May and ends on the third Friday in November. However, realized effort is based on resource availability as informed by the use of spotter aircraft to locate schools of menhaden. Consequently, the onset and magnitude of effort by week of the year is variable across years (Figure 3) as is the trend in cumulative percent of annual landings (Figure 4). For example, 2018 saw heavier effort and a steeper rate of landings earlier in the season than the years following; whereas 2023 and 2024 experienced delayed season starts but higher mid-season rates of landing compared to the years prior.

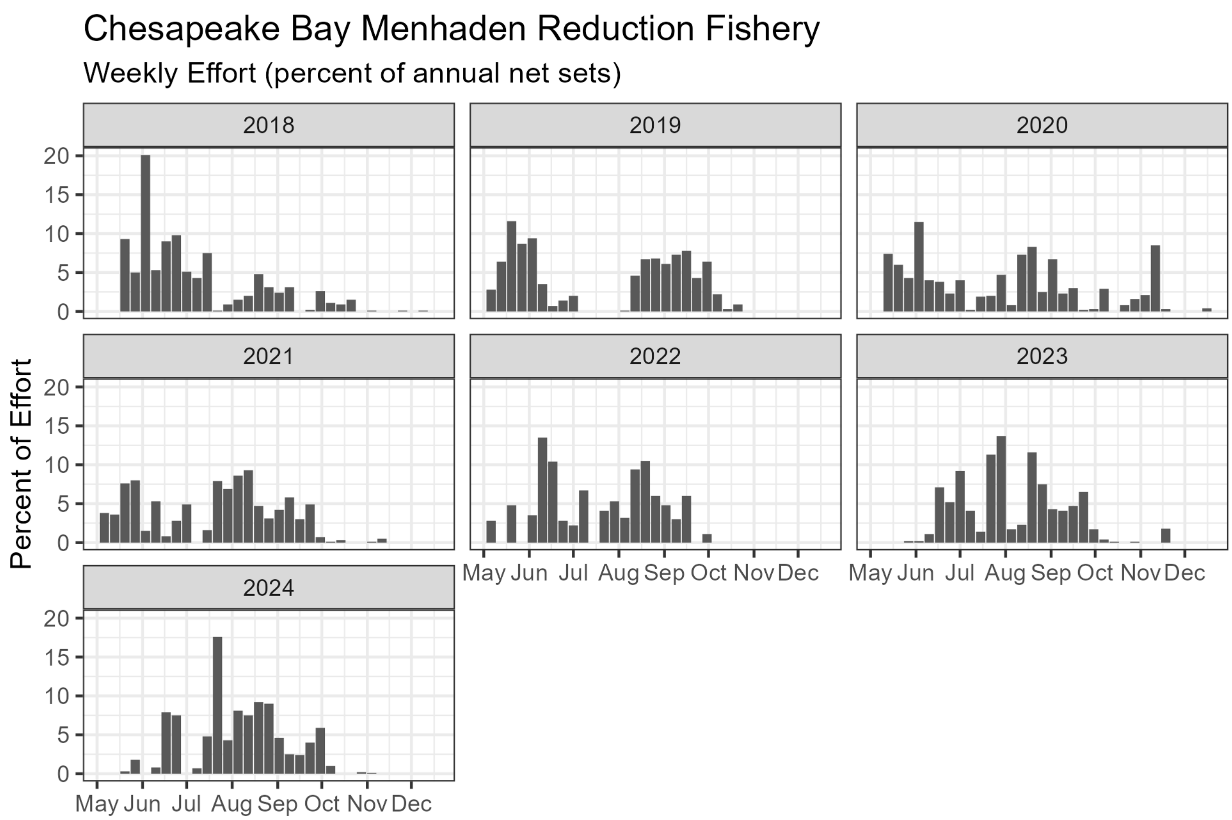


Figure 3. Percent of annual effort (number of net sets) by week for the menhaden purse seine reduction fishery in the Chesapeake Bay 2018-2024.

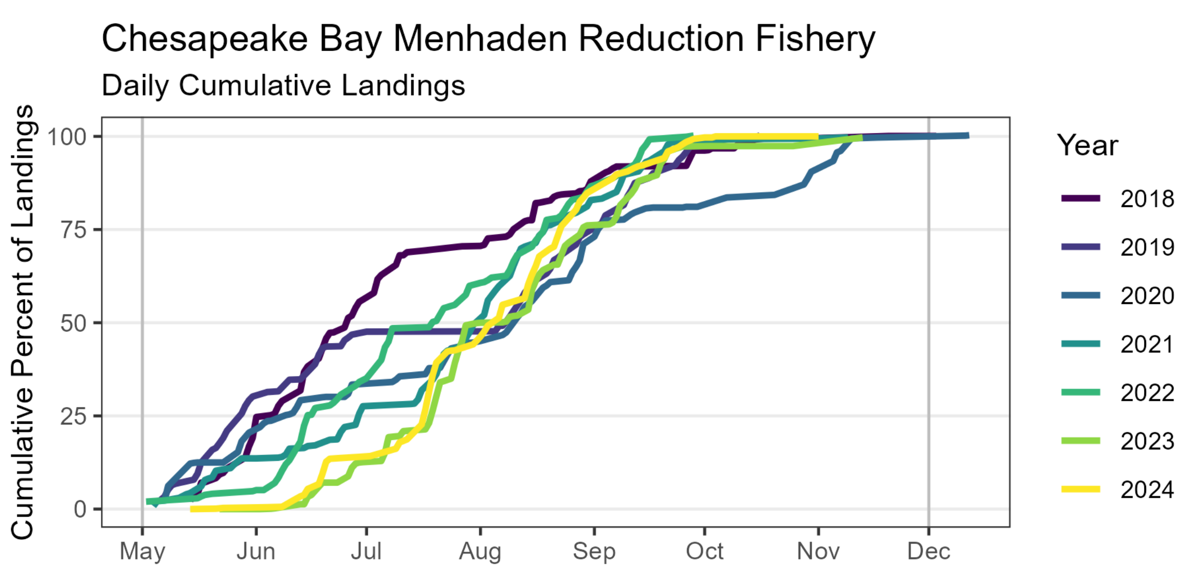


Figure 4**.** Cumulative percent of annual landings in the Chesapeake Bay menhaden reduction fishery 2028-2024.

2.2.4 Chesapeake Bay Pound Net Catch

The shift in Chesapeake Bay reduction fishery harvest later in the season in 2023 and 2024 corresponded with declines in Chesapeake Bay pound net fishery harvest (Figure 5), which typically peak during the summer months. For example, the Maryland Chesapeake Bay pound net harvest declined by 60% in 2024 from the 2018-2022 average. This co-occurrence raised concerns among Chesapeake Bay pound net harvesters, about a potential user group conflict with the reduction fishery and about an overall trend towards reduced menhaden presence, spatial distribution, and abundance within the Bay.

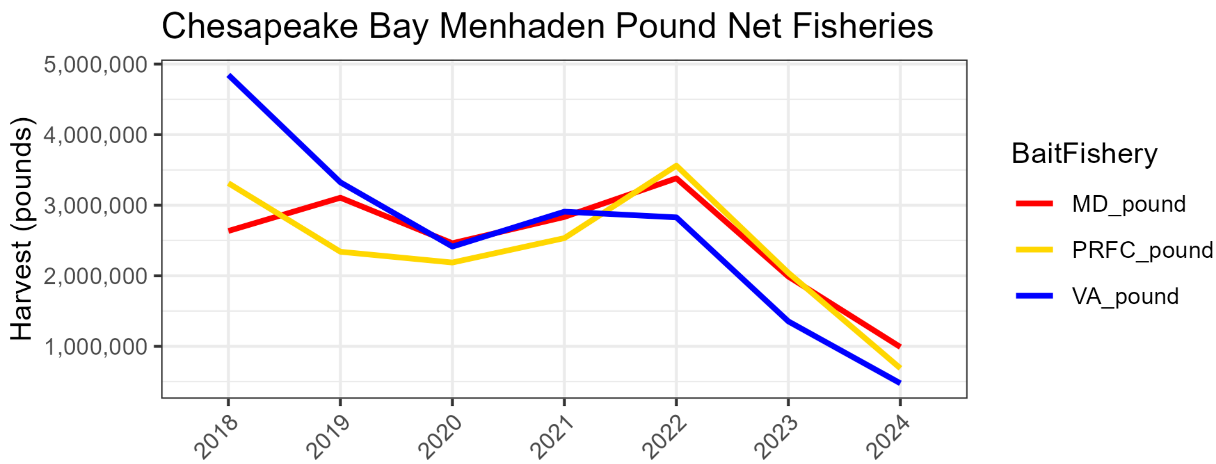


Figure 5. Total menhaden harvest in Maryland, PRFC, and Virginia pound net fisheries, 2018-2024.

The Plan Development Team (PDT) and Technical Committee (TC) investigated variability in fishery effort and/or menhaden availability as potential causes for the decline in pound net harvest. While true abundance (or availability) is not known, catch per unit effort (CPUE) can be used as a proxy if it is assumed there are no major changes to how the fishery operated between years.

Overall, the TC found notable declines in CPUE in the pound net fisheries of Maryland, Virginia, and PRFC in 2024 (Figure 6). As harvest declined, PRFC found a slight increasing trend in the time it takes to reach 50% of the annual cumulative harvest where 2024 was approximately 7 weeks later than the 2018-2023 average. PRFC and Maryland also discovered that the number of trips that caught 5,000 pounds or more of menhaden have declined to their lowest levels since 2018.

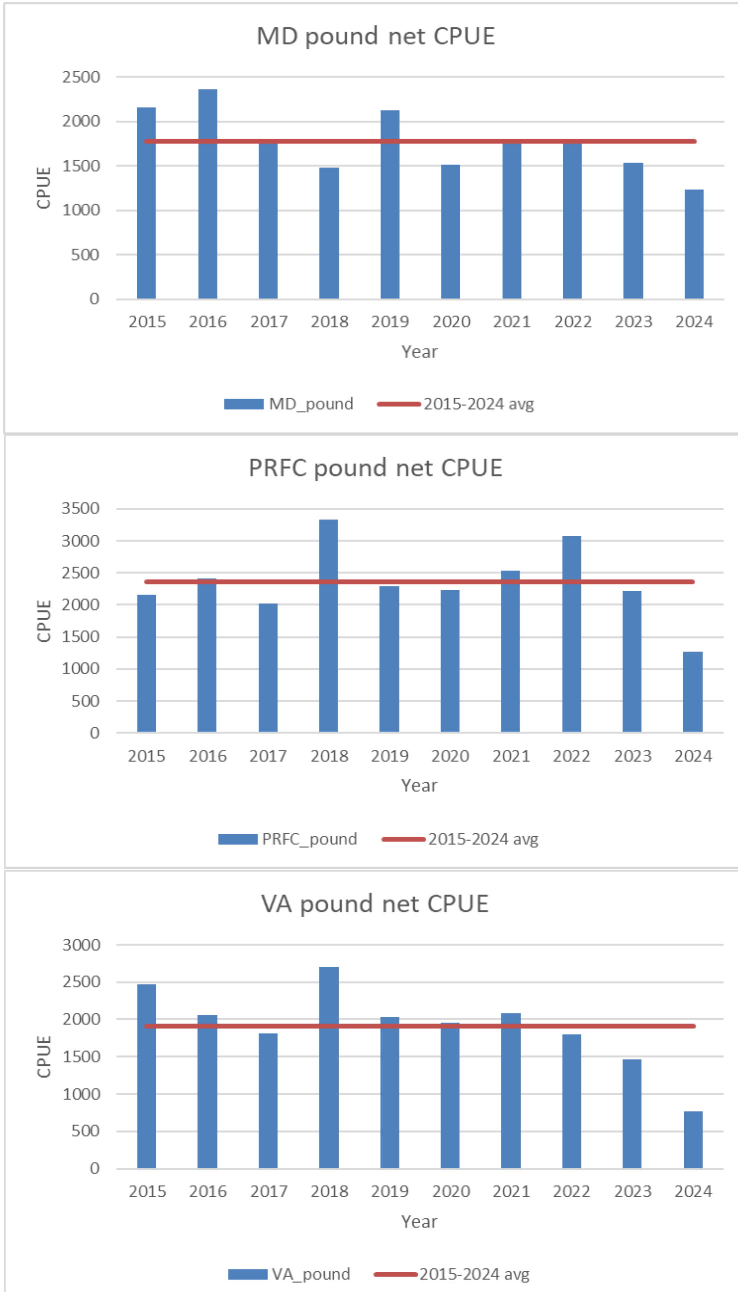


Figure 6. Annual menhaden Pound Net CPUE from Maryland, Potomac River, and Virginia. CPUE is in pounds per net day. Sources: Maryland DNR, PRFC, and VMRC.

Looking more closely at Maryland, during the second half of the year (weeks 27+), weekly CPUE in 2023 is generally equal to or greater than the 2018-2022 average (Figure 7), suggesting little influence of the reduction fishery on pound net catches. However, weekly pound net CPUE in 2024 shows a different pattern. Beginning in week 31 and continuing through the end of the year, CPUE in 2024 is generally below the 2018-2022 average (Figure 7). Just prior to this time period, the reduction fishery was experiencing higher than normal catch rates (Figure 8). The reduction fishery began in week 23, approximately five weeks later than 2018-2022, but by week 33 had caught approximately 60% of the annual catch, which is in line with earlier years. It is possible that these higher than normal catch rates may have affected availability of fish in the upper bay, thereby affecting pound net catches. Although catch rates were higher than normal, total catch was equivalent among years. Any link between reduction harvest and availability in the upper bay would be a joint function of fishery dynamics and migratory patterns (*e.g.* timing and location) at a finer scale than could be considered in the PDT analysis.

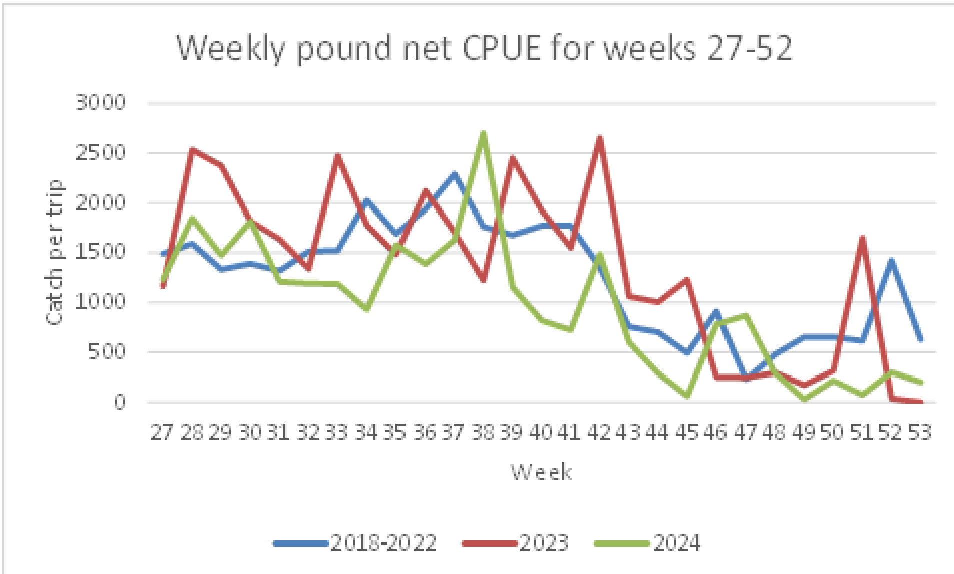


Figure 7. Weekly CPUE in MD pound net fishery for weeks 27-52.

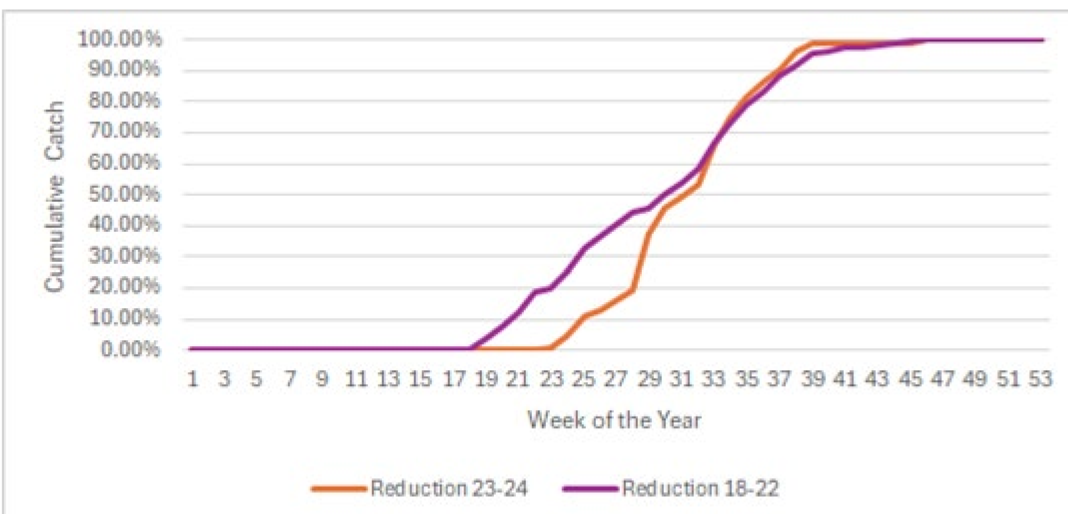


Figure 8. Timing of the Chesapeake Bay reduction fishery showing a delayed start with higher than average catch rates in weeks 23-33 in 2023-2024.

The PDT notes that the effort values used to calculate CPUE for all three pound net jurisdictions only includes nets catching menhaden. Menhaden account for a high proportion of some pound net harvesters' catch, which could lead to reduced effort if menhaden availability dropped to a point where fishing was no longer profitable. Nets that remain profitable catching other species, but that no longer are catching menhaden would also not be included in the effort used in these calculations. These two factors could lead to more stability in the pound net CPUE as menhaden abundance declines, since only nets set in the best location to catch menhaden would be included in the effort used to calculate CPUE during a reduction in menhaden availability.

2.2.5 Chesapeake Bay Adult Fishery Independent Indices

The TC also looked at recent fishery independent indices included in the 2025 stock assessment for a trend in relative abundance, although noted that 2023 was the most recent year available in the assessment and that temporal and spatial differences between the surveys and fisheries make it difficult to compare the different trends.

For more recent data, the PDT reviewed the adult index from the fishery independent survey conducted in the Choptank River in Maryland (Figure 9). The survey has been conducted by Maryland DNR using gillnet gear during June-August since 2013. Between 2018 and 2023, the abundance appears to have been relatively stable with moderate interannual variability. In 2024, abundance dropped dramatically and remained low in 2025. While limited to a single tidal river system, the index does indicate lower relative abundance of adult Atlantic menhaden in 2024, as also indicated by the fishery dependent Pound Net CPUEs.

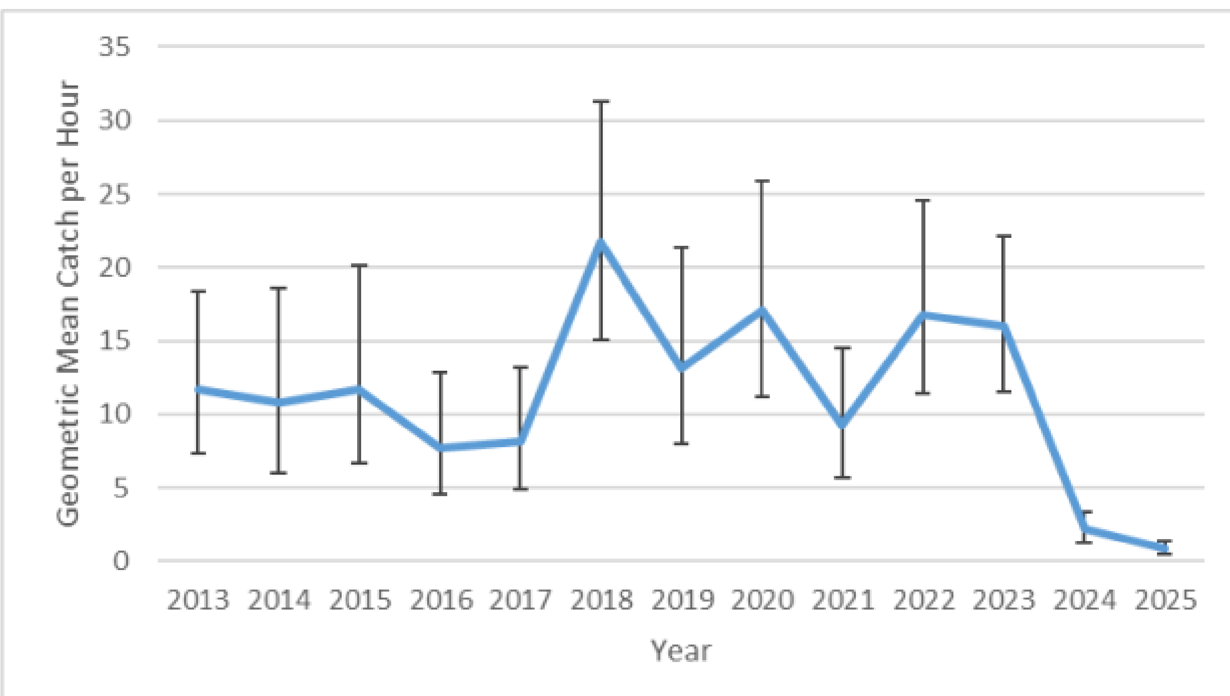


Figure 9. Maryland DNR Choptank River Gillnet Survey geometric mean catch per gill net hour and 95% confidence limits, 2013-2025.

2.3 Social and Economic Impacts

This Addendum includes measures that could influence the size of the Chesapeake Bay Reduction Fishery Cap and introduce quota periods to distribute removals more evenly over the course of the year. These measures may produce socioeconomic impacts to the commercial reduction fishery and dependent communities as they could limit harvest within the Chesapeake Bay and affect seasonal operations. Additionally, the measures are intended to provide increased ecosystem benefits through enhanced forage opportunities, which could impact individuals who derive value from species that prey upon menhaden.

Two prior socioeconomic studies on the commercial menhaden fisheries provide important context: Kirkely et al. (2011), who assess the economic importance of the reduction sector under alternative harvest scenarios in the Chesapeake Bay, and Whitehead and Harrison (2017), who conducted a socioeconomic study of the commercial bait and reduction fisheries to inform development of Amendment 3. Kirkley et al. (2011) estimated that the reduction sector supported approximately 519 full- and part-time jobs in Maryland and Virginia, including 347 in Northumberland County, Virginia, associated with total landings of about 141,000 metric tons, of which roughly 85,000 metric tons were harvested from the Chesapeake Bay. Under an extreme scenario in which no harvest was allowed in the Bay and effort could not be shifted to coastal waters, employment losses in Northumberland County were estimated at up to 176 jobs, including 98 direct losses in the reduction sector. The analysis also indicated that a reduction of 1,000 metric tons in Chesapeake Bay quota corresponded to an estimated loss of approximately $630,000 in regional economic output (~$940,000 in 2025) and 3.7 total jobs, including 2.1 direct jobs in the reduction sector. Whitehead and Harrison (2017) applied a similar modeling framework to evaluate economic impacts associated with coastwide quota changes and found a 6.45% increase in total quota (≈12,100 metric tons) would result in combined impacts from the bait and reduction sectors of approximately $6.3 million in economic output and 99 jobs, corresponding to about $520,000 in regional economic output (~$680,000 in 2025) and 8.2 jobs per 1,000 metric tons. Both studies use Leontief input-output models, which do not account for market adjustments or adaptive industry behavior and may overstate long-term employment effects of quota changes.

While neither Kirkley et al. (2011) nor Whitehead and Harrison (2017) explicitly evaluate seasonal harvest restrictions within Chesapeake Bay, both studies suggest that economic impacts are driven primarily by total landings rather than the timing of harvest. Evidence that effort and harvest respond flexibly to economic and regulatory conditions implies that seasonal limits may reallocate fishing activity across the season with limited overall economic impact, provided that total allowable harvest is not substantially reduced. However, impacts may arise if seasonal restrictions constrain periods of high catch efficiency or limit the ability of the reduction sector to maintain consistent processing throughput.

3. PROPOSED MANAGEMENT PROGRAM

This draft addendum considers modifying the Chesapeake Bay Reduction Fishery Cap component of the management program. The intent of the Bay Cap is to limit the amount of reduction fishery harvest that occurs in Chesapeake Bay, a critical nursery area for Atlantic menhaden. Harvest for reduction purposes shall be prohibited within Chesapeake Bay when 100% of the Bay Cap is harvested from Chesapeake Bay, which is defined as areas shoreward of the Chesapeake Bay Bridge Tunnel. Harvest above the Bay Cap in any given year will be deducted from the next year's Bay Cap. Furthermore, unused quota from a region or state cannot be transferred to the Bay Cap to reduce an overage. If the Bay Cap is underharvested, the un-landed fish under the Bay Cap cannot be rolled over into the subsequent year.

An objective is listed for each component to guide evaluation of proposed options in addressing the issues identified for each component in the statement of the problem. **When the Board takes final action on the addendum, there will be the opportunity to select any measure within the range of options that went out for public comment, including combining options across issues, unless otherwise specified.**

3.1 Chesapeake Bay Reduction Fishery Cap Amount

These options consider reducing the amount of the Chesapeake Bay Reduction Fishery Cap as a precautionary measure in response to concerns about reduced menhaden availability in Chesapeake Bay and consider changes to the manner in which the Bay Cap is set to be more responsive to changes in the TAC. Only one option among Option A, B, and C can be selected. In Options B and C, the Board may select any measure within the range of options. In Option C, a sub-option must be selected from both C1 and C2. Additionally, changes to the Bay Cap do not affect state allocations. Landings that apply to the Bay Cap also apply to Virginia's state allocation.

Option A. Status Quo. The Chesapeake Bay Reduction Fishery Cap is maintained at 51,000 mt. This value represents an approximation of the five-year average of reduction harvest from Chesapeake Bay between 2012 and 2016. An approximate value is used because reduction landings in Chesapeake Bay are confidential. Future changes to the Bay Cap may only be made through adaptive management (i.e., an amendment or addendum).

Option B. One-time Reduction in the Bay Cap. The Chesapeake Bay Reduction Fishery Cap is reduced by a percentage. The Board may select to phase-in the reduction over multiple years. Future changes to the Bay Cap may only be made through adaptive management (i.e., an amendment or addendum).

Sub Option B1: 10% reduction, resulting in a Bay Cap of 45,900 mt

Sub Option B2: 20% reduction, resulting in a Bay Cap of 40,800 mt

<u>Sub Option B3:</u> 30% reduction, resulting in a Bay Cap of 35,700 mt

<u>Sub Option B4:</u> 50% reduction, resulting in a Bay Cap of 25,500 mt

Option B2 applies the same percent reduction to the Bay Cap as was adopted by the Atlantic Menhaden Board for the 2026 TAC. Option B1 applies a smaller percent reduction to the Bay Cap than adopted for the 2026 TAC while Options B3 and B4 apply greater percent reductions; this range accounts for uncertainty in how the abundance in the Chesapeake Bay correlates to abundance of the coastwide stock. The range of options also provides flexibility for the Board to adjust the Bay Cap in response to how it sets the TAC for the next two to three years, as is scheduled to occur at the November 2026 ASMFC Meeting before taking final action on this addendum.

<u>Option C. Linking the Bay Cap to Coastwide TAC</u>

The Chesapeake Bay Reduction Fishery Cap would be set as a proportion of the TAC. In addition, an upper and lower limit would control how low and high the Bay Cap could shift with changing TACs. Setting the Bay Cap as a proportion of the TAC means that any future change to the TAC is also applied to the Bay Cap as the same percent reduction or increase (unless restricted by an upper or lower limit), thus establishing a direct link between the Bay Cap and the TAC. Adaptive management would be required to modify or depart from the automatic Bay Cap setting process selected under this option.

The option considers a range of Bay Cap:TAC proportions, from the current (2026) proportion to the proportions that would result if the Bay Cap were reduced by 10 to 50% relative to the 2026 TAC (Table 2). This range effectively allows the Board to apply a reduction to the Bay Cap similar to that in Option B before locking in the proportion that would maintain the relationship between the Bay Cap and TAC moving forward. Table 2 provides the Bay Cap that would result in 2027 under a status quo TAC scenario; if the TAC were adjusted for 2027, the Bay Cap would change by the same percent (as the TAC from 2026) from the amount shown. For example, the proportion in Option C1c is the same as if the Bay Cap had been reduced by 20% with the 2026 TAC. For a full history of Bay Caps and TACs see Table 1 in Section 2.2.2. Option C also considers upper and lower limits for the Bay Cap (Table 3). The upper limit options range from the highest to the lowest Bay Cap implemented by management. The lower limits range from none to the lower 95% confidence interval of the mean harvest from 2012-2016. This time period is the one used to calculate the current Bay Cap and incorporates the variability around the harvest when the Bay Cap was set at a higher level than the current Bay Cap.

Table 2. Sub-Options C1a-e for setting the Bay Cap as a Proportion of the TAC. Note: Proportions shown here are rounded for clarity; the Bay Cap would be based on unrounded values.

Option	Proportion	Basis	Cap in 2027 under status quo TAC (186,840 mt)
C1a	27.3%	2026 Bay Cap : 2026 TAC	51,000 mt
C1b	24.6%	10% reduction to 2026 Bay Cap : 2026 TAC	45,900 mt
C1c	21.8%	20% reduction to 2026 Bay Cap : 2026 TAC	40,800 mt
C1d	19.1%	30% reduction to 2026 Bay Cap : 2026 TAC	35,700 mt
C1e	13.6%	50% reduction to 2026 Bay Cap : 2026 TAC	25,500 mt

Table 3. Sub-Options C2a-e for setting an Upper and Lower limit for the Bay Cap.

Option	Upper Limit	Lower Limit	Basis
C2a.	51,000 mt	None	Upper: Current Bay Cap Lower: n/a
C2b	51,000 mt	25,500 mt	Upper: Current Bay Cap Lower: Maximum Reduction Under Consideration
C2c.	87,216 mt	None	Upper: Highest Cap since management with TAC Lower: n/a
C2d.	87,216 mt	25,500 mt	Upper: Highest Cap since management with TAC Lower: Maximum Reduction Under Consideration
C2e.	75,000 mt	29,000 mt	Upper/Lower: Approximate 95% confidence intervals around the approximate 2012-2016 mean Chesapeake Bay reduction harvest. Note: if Sub-Option C1e is selected, the lower limit for this option will be 25,500 mt.

3.2 Chesapeake Bay Cap Distribution

3.2.1. Quota Periods

These options consider dividing the Bay Cap into quota periods to moderate reduction fishery landings in the beginning and middle of the reduction fishery season as a precautionary measure to support the availability of menhaden to other fisheries and predators.

Option A. Status Quo
The Bay Cap remains an annual measure only with no division into quota periods.

Option B. Three Quota Periods
The Bay Cap would be divided into three quota periods defined by one of the sub-options in Table 4.

Table 4. Options to divide the Bay Cap into three quota periods. Note: Because the reduction fishery begins the first Monday in May and ends on the third Friday in November, depending on the year, the length of the fishing season is either 28 weeks and 5 days or 27 weeks and 5 days. The table outlines the length of each quota period for a season of 28 weeks and 5 days. For years with 27 weeks and 5 days, one week is removed from the final quota period. Example dates are given for 2027.

Option	Description	Length of Quota Periods	2027 Time of Year Example*	Percent of total Bay Cap
B1	Even Length & Even Harvest	9 weeks	May 3–Jul 4	33%
		10 weeks	Jul 5–Sep 12	33%
		9 weeks and 5 days	Sep 13–Nov 19	34%
B2	Even Length & Uneven Harvest	9 weeks	May 3–Jul 4	25%
		10 weeks	Jul 5–Sep 12	25%
		9 weeks and 5 days	Sep 13–Nov 19	50%
B3	Uneven Length & Even Harvest	11 weeks	May 3–Jul 18	33%
		6 weeks	Jul 19–Aug 29	33%
		11 weeks and 5 days	Aug 30–Nov 19	34%

Options B1 and B2 contain three quota periods of roughly equal length, with Option B1 intended to provide an equal distribution of harvest whereas Option B2 gives greater emphasis on delaying harvest until later in the season. Option B3 presents three periods of unequal length, with the extended first period intended to delay some reduction harvest until later in the year compared to recent performance and the short middle period intended to allow the fishery to continue to operate as it has been during what has been the peak period in recent years.

To help understand how Options B1-B3 may alter the reduction fishery's operation, Table 5 provides the 2018–2024 average percent of reduction fishery effort and landings that occurred in the proposed quota periods. Furthermore, Figure 10 contrasts the options' projected reduction fishery cumulative harvest by week with the 2018–2024 average cumulative harvest by week for the reduction fishery and the Maryland, Virginia, and PRFC pound net fisheries.

Table 5. Approximate average percent purse seine reduction landings and effort in the Chesapeake Bay 2018-2024 corresponding to the quota periods as presented in Options B1-B3.

Option	Length of Quota Period	2027 Dates	Average % Landings (2018-2024)	Average % Effort (2018-2024)
B1/B2	9 weeks	May 3 - July 4	30%	39%
	10 weeks	July 5 - Sept 12	54%	48%
	9 weeks + 5 days	Sept 13 - Nov 19	16%	13%
B3	11 weeks	May 3 - July 18	38%	44%
	6 weeks	July 19 - Aug 29	36%	34%
	11 weeks + 5 days	Aug 30 - Nov 19	26%	22%

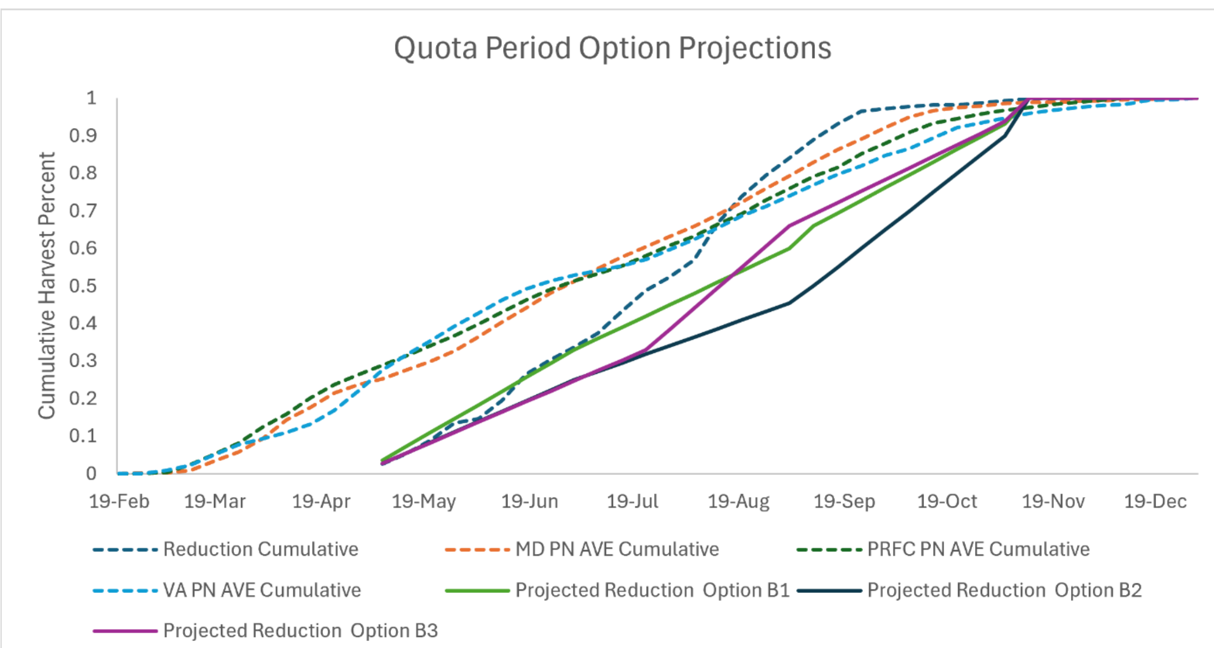


Figure 10. Historical average cumulative harvest by week (2018 - 2024) for the reduction fishery and the Maryland, Virginia, and PRFC pounds net, and a projection of the reduction fishery cumulative harvest under Options B1-B3.

3.2.2 Quota Period Overages and Underages

Note: This section is only required if Option B is selected above in section 3.2.1 to implement quota periods.

The following options outline how overages and underages within quota periods would be addressed. Without any overage payback provision, there would be little incentive for industry to abide by the in-year quota periods. Without any underage rollover provision, the quota periods may inhibit industry's ability to harvest the Bay Cap.

Option A. No payback for quota period overages with rollover of unused quota within a fishing year.

There would be no payback for exceeding the allocation of a quota period unless it causes the Bay Cap to be exceeded. An overage of the total Bay Cap would be deducted from the following year's total Bay Cap before it is allocated into the quota periods. Any underage of Quota Period 1 or 2 can be used in any subsequent quota period within the year.

Example: A three-quota period split was selected with allocations of 25%/25%/50%. The total Bay Cap is set at a fixed 20,000 pounds, resulting in period allocations of 5,000/5,000/10,000 pounds.

- If the fishery catches 7,000/3,000/10,000 pounds (i.e., a Period 1 overage with no Bay Cap overage), then the following year allocations will remain 5,000/5,000/10,000 pounds.
- If the fishery catches 7,000/5,000/10,000 pounds (i.e., a Period 1 overage and Bay Cap overage of 2,000 pounds), then the following year the Bay Cap would be reduced by 2,000 pounds and then allocated to the periods as 4,500/4,500/9,000 pounds.
- If the fishery catches 5,000/3,000/12,000 pounds (i.e., a Period 2 underage rolled into and harvested in Period 3 without exceeding the total Bay Cap), then the following year allocations will remain the same. A Period 2 underage could only be harvested in Period 3 whereas a Period 1 underage could be harvested in Period 2 and/or 3.

Option B. Quota period overage payback with rollover of unused quota within a fishing year.

Any underage of Quota Periods 1 or 2 would be rolled into Period 3 of the same fishing year. Any underage in Quota Period 3 would not be reallocated.

Quota Period 1 or 2 overages would be deducted from the same quota period in the following year and that poundage would be redistributed to Quota Period 3. If a Quota Period 1 or 2 overage also results in a Bay Cap overage, the Bay Cap overage would be accounted for prior to the Quota Period overage. A Quota Period 3 overage would always also result in a Bay Cap overage (due to the underage rollover provision); when this occurs, the Bay Cap overage would be deducted from the Bay Cap in the following year.

If an overage in Quota Period 1 or 2 cannot be paid back in full by the subsequent year's Quota Period allocation, the remainder of the overage will be subtracted from the next earliest quota period (if available). If that quota period allocation is insufficient, the remaining balance would be deducted from the subsequent quota period. Quota period overages that cannot be paid back in full by one quota period will be accounted for last should there be overages of multiple quota periods.

<u>Underage Sub Option 1.</u> Rather than an underage in Quota Period 1 being rolled over entirely to Quota Period 3, an underage in Quota Period 1 would be rolled over in equal halves to Quota Periods 2 and 3. (An underage in Quota Period 2 would still be rolled over entirely to Quota Period 3.)

Example: A three-quota period split was selected with allocations of 25%/25%/50%. The total Bay Cap is set at a fixed 20,000 pounds, resulting in period allocations of 5,000/5,000/10,000 pounds.

- If the fishery catches 7,000/3,000/10,000 pounds (i.e., a Period 1 overage with no Bay Cap overage), then the following year, Period 1 would be reduced by 2,000 pounds and Period 3 would be increased by 2,000 pounds, resulting in allocations of 3,000/5,000/12,000 pounds.
- If the fishery catches 5,000/3,000/12,000 pounds (i.e., a Period 3 overage with no Bay Cap overage), then the allocations remain unchanged the following year at 5,000/5,000/10,000 pounds.
- If the fishery catches 7,000/5,000/10,000 pounds (i.e., a Period 1 overage and Bay Cap overage of 2,000 pounds), then the following year the Bay Cap would be reduced by 2,000 pounds resulting in baseline period allocations of 4,500/4,500/9,000 pounds. Then, the Period 1 overage would be deducted from Period 1 and redistributed to Period 3, resulting in final period allocations of 2,500/4,500/11,000 pounds.
- If the fishery catches 5,000/5,000/12,000 pounds (i.e., a Period 3 overage and Bay Cap overage), then the following year the Bay Cap would be reduced by 2,000 pounds resulting in baseline and final period allocations of 4,500/4,500/9,000 pounds.
- If the fishery catches 1,000/12,000/7,000 pounds (i.e., a Period 2 overage of 7,000 pounds that cannot be paid back in full by Period 2 the following year and no Bay Cap overage), then the following year Period 2 would be set at zero, 2,000 pounds would be deducted from Period 1, and 7,000 pounds would be redistributed to Period 3, resulting in period allocations of 3,000/0/17,000 pounds.
- If the fishery catches 3,000 pounds in Period 1, the 2,000-pound underage is applied entirely to Period 3 that year resulting in Period 2 and 3 allocations of 5,000 and 12,000 pounds, unless Underage Sub-option 1 is selected in which case the 2,000-pound Period 1 underage is applied in equal amounts to Periods 2 and 3 that year resulting in Period 2 and 3 allocations of 6,000 and 11,000 pounds.
- If the fishery catches 6,000/12,000/2,000 pounds (i.e. a Period 1 overage of 1,000 pounds and a Period 2 overage of 7,000 pounds that cannot be paid back in full by

Period 2 the following year and no Bay Cap overage), then the following year Period 1 would first be reduced to 4,000 pounds, then the Period 2 overage would be applied to set Period 2 to zero, the remaining 2,000 pounds would be deducted from Period 1, and 8,000 pounds would be redistributed to Period 3, resulting in allocations of 2,000/0/18,000 pounds.

3.3 Chesapeake Bay Reduction Fishery Cap Revisit Provision

These options consider setting a timeframe for the Board to revisit the Chesapeake Bay Reduction Fishery Cap periodically due to the uncertainty of menhaden's status in the Bay and ongoing work to develop a scientifically-based Bay Cap. Revisiting the Bay Cap does not require the Board to initiate an action to consider changes to the Bay Cap. In either option, the Bay Cap can be reconsidered at any time through the adaptive management process (i.e., an addendum or amendment). A similar revisit provision exists for the quota allocations (every three years).

Option A. Status Quo. There is no set timeframe for the Board to revisit the Bay Cap.

Option B. Revisit Provision. The Chesapeake Bay Cap will be revisited every three years following implementation of this draft addendum.

4. COMPLIANCE SCHEDULE

The Atlantic Menhaden Management Board would need to determine a compliance schedule when considering approval of the draft Addendum.

Atlantic States Marine Fisheries Commission

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

MEMORANDUM

TO: Atlantic Menhaden Management Board

FROM: Committee on Economics and Social Sciences

DATE: July 13, 2026

SUBJECT: Updated: Evaluation of potential employment and economic impacts resulting from a TAC reduction

Executive Summary

In the fall 2025 and spring of 2026, the Committee on Economics and Social Sciences (CESS) was tasked with looking into how changes in menhaden management could impact jobs within the commercial reduction and bait sectors of the menhaden fishery. This memorandum provides a summary of available information, including model-based approaches used to estimate the economic impacts of changes in Atlantic menhaden landings. Key findings from these prior studies are highlighted, along with study limitations, data gaps, and considerations for future work.

Leontief input–output models are commonly used to evaluate how changes in production by one sector or industry affect regional economies. These models apply fixed production relationships to estimate how output changes in one industry translate into direct, indirect, and induced effects on output, employment, and income across all sectors. While these models can be useful for understanding inter-industry responses and evaluating short-run economic impacts of marginal output changes, the approach assumes constant input proportions in industry production functions, no price adjustments, and no behavioral responses or business adaptation. As a result, firms are assumed to not substitute inputs, shift sourcing, or modify production processes in response to changing constraints (e.g., input prices, output constraints, etc.). Thus, use of this modeling approach to evaluate large-scale or long-term policy changes may overstate impacts.

There were two studies identified that address employment impacts associated with landings changes in the Atlantic menhaden fishery: Kirkley et al. 2011 and Whitehead and Harrison 2017.

Kirkley et al. (2011) assessed the economic importance of the reduction sector under alternative harvest scenarios in the Chesapeake Bay, including an approach that allowed for increasing costs associated with shifting harvest to coastal waters in response to reductions in the Chesapeake Bay quota. The study estimated that the reduction sector supported approximately 519 full- and part-time jobs in Maryland and Virginia, including 347 in Northumberland County, Virginia, associated with total landings of about 141,000 metric tons, of which roughly 85,000 metric tons were harvested from the Chesapeake Bay. Under an

extreme scenario in which no harvest was allowed in the Bay and effort could not be shifted to coastal waters, employment losses in Northumberland County were estimated at up to 176 jobs, including 98 direct losses in the reduction sector. The analysis also indicated that a reduction of 1,000 metric tons in the Chesapeake Bay quota corresponded to an estimated loss of approximately 3.7 total jobs, including 2.1 direct jobs in the reduction sector. Whitehead and Harrison (2017) applied a similar modeling framework and produced employment impact estimates consistent with Kirkley et al. (2011). In addition, this study estimated that employment changes in Northumberland County scale with output at approximately one job per $45,000 in landings (roughly $60,000 in 2026 USD).

Whitehead and Harrison (2017) characterize the bait sector as a geographically diffuse, relatively low-volume and higher-unit-price fishery, as compared to the reduction sector, with landings spread across 41–55 Atlantic coast counties and individual harvesters generally maintaining diversified catch portfolios. Economic modeling estimated that the 6.45% increase in the 2017 TAC (12,120 mt) supported approximately $1.5 million in direct and indirect output, $431,000 in earnings, and 18 jobs in the coastwide bait sector, with impacts concentrated primarily in New Jersey and Virginia. This equates to ~$124k in output, ~$36k in earnings, and ~1.5 jobs per 1,000 metric ton increase in coastwide TAC. However, county-level regression analysis found no significant relationship between bait landings and employment and only a very small negative relationship with income, suggesting limited detectable effects on broader county economies.

These estimates should be interpreted cautiously in a management context. Because Leontief input–output models do not account for market adjustments or adaptive behavior, they likely overstate long-term employment effects. It is likely that economic impacts and employment effects associated with output reductions in the reduction sector would respond non-linearly and be characterized by threshold triggers due to high fixed costs in the industry. This would suggest that there are critical output levels, past which employment could change dramatically. Conversely, the bait sector is more diversified and regression analysis did not detect substantial county-level employment or income changes associated with changes in the TAC. Importantly, these studies note that the reduction industry is a critical and central sector for the local economy around Reedville, Virginia. Job losses in this sector could, potentially lead to structural unemployment rather than frictional transition, as we might expect in larger or more diversified economies.

The CESS recommends additional socioeconomic research to support menhaden management decisions. In particular, studies that evaluate industry employment over time and in relation to changes in quota, landings, or other exogenous factors, assess costs and estimate production functions for the reduction sector, or expand consideration of the bait sector, including its costs, demand drivers, and economic contributions, would be strongly supported.

I. Introduction

The Atlantic menhaden (*Brevoortia tyrannus*) serves as an important resource for communities throughout the Atlantic Coast. The fishery is characterized by a geographically concentrated reduction sector based in Reedville, Virginia, and a more geographically diverse bait sector that supports various other fisheries. While the Atlantic menhaden stock is not overfished, there has been a downward trend in TAC to help maintain ecosystem function and predator-prey balance. Management actions are driven by updated stock assessments that have indicated higher than estimated fishing mortality and the full implementation of Ecological Reference Points (ERPs).

This literature review was conducted to support the Board's evaluation of potential employment and economic impacts resulting from the reduction in the TAC for the 2026 fishing year, as well as proposed changes to the Chesapeake Bay harvest cap under Addendum II. The review synthesizes the key findings from two documents: Kirkley et al. (2011) and Whitehead & Harrison (2017).

II. Review of Economic Assessments

A. Establishing the Baseline: Kirkley et al. (2011)

The study serves as the foundational text for understanding the localized economic dependency of the Chesapeake Bay region on the menhaden reduction fishery. It should be noted that the study characterizes the fishery using data from the United States Bureau of Census for the years 2000 and 2008 cost and earnings data from Omega Protein. These data represent conditions prior to recent management shifts (such as Ecological Reference Points ERPs) or any changes in the industry that may have occurred over the last two decades.

Key findings:

- The study highlights the extreme concentration of economic activity in Northumberland County, Virginia (Reedville).
- The study demonstrates that unlike many other fisheries where infrastructure is diffuse, the reduction fishery acts as a "monopsony-like" anchor for the local economy.
- The study notes the closure of other processing plants along the coast left Reedville as the sole processor for reduction landings, creating a high degree of vulnerability to regulatory changes.
- The study estimates the ripple effects of the various quota reduction scenarios on employment using an Input-Output model and generating estimates using the software platform IMPLAN.
- The study estimates that the reduction sector supported approximately 519 full- and part-time jobs in Maryland and Virginia, including 347 in Northumberland County, Virginia, associated with total landings of about 141,000 metric tons, of which roughly 85,000 metric tons were harvested from the Chesapeake Bay.
- The study suggests robust multipliers for the reduction sector, indicating that for every job directly in harvesting or processing, a significant number of support jobs (mechanics, logistics, local services) were sustained in the rural Virginia economy.

- The study underscores that alternative employment opportunities in the immediate vicinity of the reduction plant were limited, suggesting that job losses in this sector could lead to structural unemployment rather than frictional transition.
- Under an extreme scenario in which no harvest was allowed in the Bay and effort could not be shifted to coastal waters, employment losses in Northumberland County were estimated at up to 176 jobs, including 98 direct losses in the reduction sector.
- The analysis also indicates that a reduction of 1,000 metric tons in the Chesapeake Bay quota corresponded to an estimated loss of approximately 3.7 total jobs, including 2.1 direct jobs in the reduction sector.

B. Analysis and Valuation of Sectors: Whitehead and Harrison (2017)
The study was commissioned to update the economic understanding of the fishery and provide a more detailed analysis between the reduction and bait sectors. Whitehead and Harrison constitute the "best available economic science" currently on record for the Commission.

Key findings:

- The study characterizes the reduction sector as high-volume, low-unit-price, and high-fixed infrastructure cost, while the bait sector had a lower volume, higher unit price, and lower infrastructure costs, which were more diffuse across the Atlantic Coast. The study found that bait landings ranged from 41 to 55 counties along the coast during the period of 2000 to 2015.
- The study revealed that individual bait fishermen maintain highly diversified catch portfolios. Survey data indicated that for a majority (54 percent) of participating harvesters, menhaden constitutes less than 10 percent of their total annual earnings. This suggests that individuals in the bait sector may be able to shift effort to other species if faced with quota reductions or adverse fishing conditions.
- Similar to Kirkley et al. (2011), the study utilizes IMPAN software to generate economic impact estimates and provides estimates on the total economic contribution (i.e., direct, indirect, and induced effects) across the coastal states.
- The authors estimate that a baseline increase in the 2017 TAC of 6.45% from the 2016 quota (12,120 metric tons) generated approximately $1.5 million in direct and indirect output, with $431,000 in earnings, and created 18 jobs across the coastwide bait sector (~$124k direct and indirect output, ~$36k in earnings, and ~1.5 jobs per 1,000 metric ton increase in quota). However, a regression analysis assessing county-level employment and income changes associated with changes in bait landings from 2005–2013 found no statistically significant relationship with employment and only a very small negative relationship with income, which the authors did not consider economically significant.
- While the bait sector operates across multiple states, the study highlighted that its economic benefits are not evenly distributed. The majority of the bait sector's economic impacts are heavily concentrated in New Jersey and Virginia.
- In addition, this study estimates that employment changes in Northumberland County, Virginia scale with output at approximately one job per $45,000 in landings for the reduction sector.

- The assessment suggests that as volume decreases, profitability and employment stability may decline non-linearly.

III. Studies Relevance to 2026 TAC Reductions
Kirkley's work provides the historical baseline for the "Reedville dependency" argument. However, the data reflects the economic landscape prior to 2010. The cost structures, fuel prices, and labor markets have evolved, meaning the raw dollar values from this report must be inflation-adjusted and contextually updated.

Whitehead and Harrison constitute the "best available economic science" currently on record for the Commission. However, the ASFMC Menhaden Board should note that the reduction sector's economic footprint is highly sensitive to economies of scale. The study suggests that as volume decreases (e.g., via the 2026 TAC cut), the profitability and thus employment stability of the capital-intensive reduction plant may decline non-linearly.

IV. Methodological Limitations
Leontief input–output models are commonly used to evaluate how changes in production by one sector or industry affect regional economies. These models apply fixed production relationships to estimate how output changes in one industry translate into direct, indirect, and induced effects on output, employment, and income across all sectors.

While these models can be useful for understanding inter-industry responses and evaluating short-run economic impacts of marginal output changes, the approach assumes constant input proportions in industry production functions, no price adjustments, and no behavioral responses or business adaptation. As a result, firms are assumed to not substitute inputs, shift sourcing, or modify production processes in response to changing constraints (e.g., input prices, output constraints, etc.). Using this type of modeling approach to evaluate large-scale or long-term policy changes may overstate impacts.

Both Kirkely et al. (2011) and Whithead and Harrison (2017) utilize Input-Output models, which, as noted above, assume a linear relationship between input (fish landings) and output (revenue or employment). In reality, a processing plant would require a minimum volume of fish to cover its fixed costs of operation (e.g., maintaining shore-side facilities, maintaining its fleet, insurance). If the TAC reduction pushes landings below this break-even threshold, the result is not a partial layoff but potentially a 100% shutdown of the facility. Under this linear relationship, the employment impact for the reduction sector would likely be scaled incorrectly due to its high fixed cost.

Employment estimates from these studies should be interpreted cautiously in a management context. Because Leontief input–output models do not account for market adjustments or adaptive behavior, they likely overstate long-term employment effects. Results are also sensitive to parameterizations of costs and industry production functions, including assumptions regarding the ability of the reduction sector to shift harvest outside the Chesapeake Bay.

V. Conclusions and Recommendations

Based on Kirkley et al. (2011), the economic hardship of a TAC reduction will be acutely felt in Northumberland County (Reedville), Virginia. However, Whitehead and Harrison (2017) suggest that the bait sector, while economically valuable, has more elasticity and geographic diversity to absorb shocks and adapt to changing management. The CESS recommends the following considerations when assessing the forthcoming TAC reductions:

Whitehead and Harrison (2017) should be a directional guide, acknowledging that the employment figures are likely overestimates for marginal TAC changes.

While Kirkley et al. 2011 is more dated, it is more contextually relevant to Chesapeake Bay-related decisions as it specifically explores reductions in the Chesapeake Bay quota cap.

For comparison purposes, it's important to note that the inflation-adjusted estimates and caveats reflect change in current market conditions.

VI. Future Research Needs

The CESS recommends additional socioeconomic research to support menhaden management decisions. We strongly support additional studies that focus on the following core areas: 1) analysis of employment changes over time in relation to quota and landings changes, controlling for other factors and moving beyond simple correlative analyses in Whitehead and Harrison (2017); 2) updating information on the reduction fishery (vessel and plant cost structures), refining economic impact models and estimates, and considering output thresholds; 3) expansion of socioeconomic data collection in the bait fishery, specifically pound nets and including infrastructure and production costs, and considering bait demand drivers, harvester diversification and output substitution, and economic contributions of the sector.

VII. References

Kirkley, J.E., Hartman, T., McDaniel, T., McConnell, K. and Whitehead, J., 2011. An assessment of the social and economic importance of menhaden (*Brevoortia tyrannus*)(Latrobe, 1802) in Chesapeake Bay region. Virginia Institute of Marine Science, College of William and Mary, School of Marine Science, Department of Fisheries

Whitehead, J.C. and Harrison, J., 2017. Socioeconomic Analysis of the Atlantic Menhaden Commercial Bait and Reduction Fishery: A Report to the Atlantic States Marine Fisheries Commission. Arlington, VA: Atlantic States Marine Fisheries Commission, 180.