Atlantic States Marine Fisheries Commission

Atlantic Menhaden Management Board

February 2, 2021
2:30 – 3:45 p.m.
Webinar

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 (*S. Woodward*) 2:30 p.m.

2. Board Consent 2:30 p.m.
   - Approval of Agenda
   - Approval of Proceedings from October 2020

3. Public Comment 2:35 p.m.

4. Review Recent Fishery Performance Relative to Commercial Allocations (*K. Rootes-Murdy*) 2:45 p.m.

5. Other Business/Adjourn 3:45 p.m.

The meeting will be held via webinar, click here for details.

MEETING OVERVIEW

Atlantic Menhaden Management Board
Tuesday, February 2, 2021
1:45 – 3:00 p.m.
Webinar

Chair: Spud Woodward (GA) Assumed Chairmanship: 03/20	Technical Committee Chair: Josh Newhard (USFWS)	Law Enforcement Committee Representative: Robert Kersey (MD)
Vice Chair: Mel Bell (ME)	Advisory Panel Chair: Meghan Lapp (RI)	Previous Board Meeting: October 20, 2020
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 October 2020

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

4. Review Recent Fishery Performance Relative to Commercial Allocations (2:00-3:00 p.m.)

Background

- Amendment 3 (2017), implemented in 2018, establishes that the Board will revisit quota allocations every three years following implementation.
- Recent landings relative to commercial allocations and quota transfers were compiled for the Board's consideration in revisiting the current allocations. **(Briefing Materials)**

Presentations

- Review Recent Fishery Performance Relative to Allocations by K. Rootes-Murdy

5. Other Business/Adjourn

Atlantic Menhaden

Activity level: High

Committee Overlap Score: High (SAS, ERP WG overlaps with American eel, striped bass, northern shrimp, Atlantic herring, horseshoe crab, weakfish)

Committee Task List

- TC, SAS, ERP WG – various taskings relating to management response to the 2019 benchmark stock assessments
- TC – April 1st: Annual compliance reports due

TC Members: Josh Newhard (USFWS, Chair), Corrin Flora (NC), Joey Ballenger (SC), Jason McNamee (RI), Lindsey Aubart (GA), Jeff Brust (NJ), Matt Cieri (ME), Ellen Cosby (PRFC), Micah Dean (MA), Kurt Gottschall (CT), Jesse Hornstein (NY), Rob Latour (VIMS), Chris Swanson (FL), Ray Mroch (NMFS), Amy Schueller (NMFS), Alexei Sharov (MD), Jeff Tinsman (DE), Kristen Anstead (ASMFC), Kirby Rootes-Murdy (ASMFC)

SAS Members: Amy Schueller (NMFS, SAS Chair), Matt Cieri (ME), Micah Dean (MA), Robert Latour (VIMS), Chris Swanson (FL), Ray Mroch (NMFS), Jason McNamee (RI), Alexei Sharov (MD), Jeff Brust (NJ) Kristen Anstead (ASMFC), Kirby Rootes-Murdy (ASMFC), Joey Ballenger (SC)

ERP WG Members: Jason Boucher (DE), Matt Cieri (ME, BERP Chair), Michael Celestino (NJ), David Chagaris (FL), Micah Dean (MA), Rob Latour (VIMS), Jason McNamee (RI), Amy Schueller (NFMS), Alexei Sharov (MD), Howard Townsend (NFMS), Jim Uphoff (MD), Kristen Anstead (ASMFC), Katie Drew (ASMFC), Sara Murray (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC MENHADEN MANAGEMENT BOARD

Webinar
October 20, 2020

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 CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Megan Ware, ME, proxy for Pat Keliher (AA)
Sen. David Miramant, ME (LA)
Cheri Patterson, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Nichola Meserve, MA, proxy for Dan McKiernan (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Conor McManus, RI, proxy for Jason McNamee (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Rep. Sosnowski (LA)
Justin Davis, CT (AA)
Rob LaFrance, CT, proxy for B. Hyatt (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)
G. Warren Elliott, PA (LA)
John Clark, DE (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Lynn Fegley, MD, proxy for B. Anderson (AA)
Russell Dize, MD (GA)
Allison Colden, MD, proxy for Del. Stein (LA)
Steve Bowman, VA (AA)
Bryan Plumlee, VA (GA)
Sen. Monty Mason, VA (LA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Jerry Mannen, NC (GA)
Bill Gorham, NC proxy for Rep. Steinberg (LA)
Mel Bell, SC, proxy for P. Maier (AA)
Malcolm Rhodes, SC (GA)
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Jim Estes, FL, proxy for J. McCawley (AA)
Sen. Thad Altman, FL (LA)
Marty Gary, PRFC
Derek Orner, NMFS
Sherry White, USFWS

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

Ex-Officio Members

Corrin Flora, Technical Committee Chair
Amy Schueller, Stock Assmnt. Subcommittee Chair
Jeff Kaelin, Advisory Panel Chair
Rob Kersey, Law Enforcement Representative

Staff

Bob Beal
Toni Kerns
Kristen Anstead
Max Appelman
Dustin Colson Leaning
Katie Drew
Maya Drzewicki
Chris Jacobs
Jeff Kipp
Laura Leach
Savannah Lewis
Sarah Murray
Caitlin Starks
Deke Tompkins
Geoff White

Guests

Karen Abrams, NOAA
Steve Atkinson
Pat Augustine, Coram, NY
Jerald Ault, Univ Miami
Doug Austen, Am. Fisheries Soc.
Joey Ballenger, SC DNR
Peter Benoit, Ofc. Sen. King
Alan Bianchi, NC DENR
Deidre Boelke, NEFMC
Jason Boucher, DE DFW
Rob Bourdon, MD DNR
Dick Brame, CCA
Delayne Brown, NH F&G
Jeff Brust, NJ DEP
Mike Celestino, NJ DEP
Benson Chiles, Chiles Consulting
Matt Cieri, ME DMR
Heather Corbett, NJ DEP

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

Guests (Continued)

Nicole Lengyel Costa, RI DEM
Jeremy Cox, *Bay Journal*
B. Crockett, Advantus Strategies
Jessica Daher, NJ DEP
Pam D'Angelo
Lorena de la Garza, NC DENR
Monty Deihl, Ocean Fleet Svcs.
Greg DiDomenico
William Dunn
Paul Eidman, Tinton Falls, NJ
AJ Erskine, Bevans Oyster Co
Jennifer Farmer, VMRC
Catherine Fede, NYS DEC
Cynthia Ferrio, NOAA
Tony Friedrich, SGA
David Frulla, ME
Thomas Fuda
Jim Gilmore, NY (AA)
Lacie Gaskins, Omega Protein
Shaun Gehan, Gehan Law
Lewis Gillingham, VMRC
Angela Giuliano, MD DNR
Walker Golder, Audubon Society
Willy Goldsmith, SGA
Zoe Goozner, Pew Trusts
Kurt Gottschall, CT DMF
Zack Greenberg, Pew Trusts
Pam Lyons Gromen, Wild Oceans
Robert Groskin
Carol Hoffman, NYS DEC
Jon Hare, NOAA
Marin Hawk, MSC
Peter Himchak, Cooke Aqua
Taylor Hinson, Omega Protein
Brett Hoffmeister, Assoc. Cape Cod
Edward Houde, UMCES
Asm. Eric Houghtaling, NJ (LA)
Adam Kenyon, VMRC
Aaron Kornbluth, Pew Trusts
Ben Landry, Ocean Fleet Svcs.
Wilson Laney
Tom Little, Ofc. Asm. Houghtaling
Carl LoBue, TNC
William Lucey, Save the Sound
Mike Luisi, MD DNR
Dee Lupton, NC DENR
Chip Lynch, NOAA
Don Lyons
Chip McLeod
Conor MacWilliams
Shanna Madsen, VMRC
John Maniscalco, NYS DEC
Patrice McCarron, Maine Lobstermen
Genine McClair, MD DNR
Kim McKown, NYS DEC
Steve Meyers
Mike Millard, FL FWS
Steve Minkkinen, FL FWS
Chris Moore, CBF
Thomas Moreland
Jerry Morgan
Brandon Muffley, MAFMC
Ken Neill
Robert Newberry
Josh Newhard, FL FWS
George O'Donnell, MD DNR
Gerry O'Neill, Cape SeaFoods
Rachel Pacella
Morgan Paris, NC DENR
Paul Piavis, MD DNR
Nick Popoff, FL FWS
Brandon Raguz, NOAA
Jill Ramsey, VMRC
Dave Ress, *Daily Press*
Harry Rickabaugh, MD DNR
Mike Ruccio, NOAA
Tim Sartwell, NOAA
Brett Scholtes, Omega Protein
Amy Schueller, NOAA
Tara Scott, NOAA
Alexei Sharov, MD DNR
David Sikorski, CCA
Melissa Smith, ME DMR
Somers Smott, VMRC
Brandy Stargell, Ocean Harvest
Nick Sterrett, Omega Protein
H. Takade-Heumacher, FL FWS
Beth Versak, MD DNR
Meg Viviano, *Ches. Bay Magazine*
Mike Waine, ASA
Anna Weinstein, Audubon Soc.
Kate Wilke, TNC
Angel Willey, MD DNR
John P. Williams
Charles Witek, W Babylon, NY
Chris Wright, NOAA
Daniel Zapf, NC DENR
Erik Zlokovitz, MD DNR
Rene Zobel, NH F & G

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, October 20, 2020, and was called to order at 9:00 a.m. by Chair A.G. "Spud" Woodward.

CALL TO ORDER

CHAIR A.G. "SPUD" WOODWARD: Good morning everybody. This is Spud Woodward, your Chair of the Atlantic Menhaden Management Board. Welcome to our Board meeting this morning. As has been happening most of this year, we're scattered from Maine to Florida, once again, not where we want to be necessarily, but grateful to have business done. We have three hours this morning to complete the items on our agenda.

APPROVAL OF AGENDA

CHAIR WOODWARD: You have a draft agenda before you for consideration. Are there any recommended additions or changes to the agenda as presented?

MS. TONI KERNS: You have Megan Ware.

CHAIR WOODWARD: Go ahead, Megan.

MS. MEGAN WARE: I just had one quick item under other business, if there is time.

CHAIR WOODWARD: Okay, we will take care of that. We'll add that for other business. Very good, are there any other changes, additions to the agenda? If so, raise your hand, if not then I will consider the agenda approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR WOODWARD: You also have available in the briefing materials the approval of proceedings from our last meeting in August, 2020. Are there any additions, deletions, corrections to those minutes?

MS. KERNS: I see no hands.

consider those proceedings approved by consent.

PUBLIC COMMENT

CHAIR WOODWARD: This is the time that we will take public comment for items that are not on the agenda. Is there anyone in attendance who would like to make a comment? Any hands?

MS. KERNS: We have Don Lyons.

CHAIR WOODWARD: Okay, go ahead, Mr. Lyons. You've got three minutes.

MR. DON LYONS: Thank you very much for the opportunity to make a brief comment today. My name is Don Lyons, and I'm Director of Conservation and Science for the National Audubon Society. I lead research, monitoring, and conservation activities for Audubon's Seabird Institute, who's goals are to promote the understanding and protection of seabirds, and the ecosystems that they rely upon. Our work primarily in Maine, but also elsewhere, contributes data on seabird prey, forage fish, to inform fisheries management in the Gulf of Maine ecosystem and others along the Atlantic Coast. Audubon's over two million members care deeply about marine and coastal birds, and are dedicated to protection and recovery of these species. We applaud the Board's decision in August of the ERP framework that will allow the Board to used ecosystem-based management for this vital forage species, to protect its role coastwide.

Now it is time to properly implement the ERP when setting catch levels for menhaden. We submitted the letter, along with three other groups, in support of your action today, to adopt a total allowable catch of menhaden for 2021 and 2022 that is less than or equal to a 50 percent probability of exceeding the ERP target of F equal to 0.19, or a total allowable catch of 176,800 tons or less.

This TAC level would not significantly limit commercial catches, but would ensure that myriad coastal and marine predators, including striped bass, other large predatory fish, coastal birds, sea turtles, and marine mammals have sufficient access to this critical food

resource, which will benefit other coastal businesses as well.

In addition, the Board should consider a buffer to further reduce the TAC to more fully account for risks and uncertainties associated with the ERP model, and the menhaden stock assessment, plus the overfished condition of herring, striped bass, bluefish, and weakfish, among other species. Thank you very much for your efforts today to sustainably manage Atlantic menhaden, and for consideration of these remarks. Thank you very much.

MS. KERNS: Have you heard from Peter Himchak?

MR. PETER HIMCHAK: This is Peter, I wanted to comment later on the motion.

MS. KERNS: Thanks, Peter. Spud, I think we might have lost you; I'm not hearing you speak.

CHAIR WOODWARD: You muted me, somebody muted me.

MS. KERNS: Sometimes the system is muting people automatically. We don't know when it's happening, so we'll keep an eye on that.

CHAIR WOODWARD: Pete, I hear you. I'll afford an opportunity for some comments after we start deliberations on the TAC. But you know this public comment period is for items that are not on the agenda, so you'll have an opportunity later.

MR. HIMCHAK: I understand that.

CHAIR WOODWARD: Any other hands, Toni?

MS. KERNS: No other hands, but Peter, did you know your hand went back up? Okay, no others, Spud.

UPDATE ON FECUNDITY ESTIMATES ASSOCIATED WITH ECOLOGICAL REFERENCE POINTS AND SET 2021-2022 AND SET FISHERY SPECIFICATIONS

CHAIR WOODWARD: Seeing no more public comment, we will move on to Item Number 4. The way we're going to handle this is we're going to have a Technical Committee report from Corrin Flora, but we want to split it up. We're going to ask her for a report on the fecundity estimates part, and after that stop.

I'll go to Jeff for opportunity to provide perspective from the AP on the fecundity estimates, and then we'll discuss and deliberate on that. We need to take action on fecundity estimates targets. Then once that's taken care of, we will move on to the Total Allowable Catch presentation, and I'll go to Jeff after that for an AP report. Hopefully that makes sense to everybody. With that, Corrin, you're up.

TECHNICAL COMMITTEE REPORT

MS. CORRIN FLORA: Thank you to the Board for allowing me to speak today. My name is Corrin Flora, and I am the TC Chair. My presentation today will deliver some background on the process. Then I will review the fecundity reference points. As stated, I will pause there and allow the Board to discuss.

Then we will go over the Board TAC levels, and at that time we'll take questions on that part of the presentation. At the August Board meeting ecological reference points were approved. This adjusts the fecundity reference points outlined in Amendment 3. Also, at that meeting the Board tasked the TC to develop a range of TAC alternatives for the 2021-2022 season. In September the ERP Workgroup developed a memo for the Board on the revised fecundity reference points, and additionally the TC met twice to develop the TAC alternative passed by the Board.

The ERP fecundity target and threshold, decide the equilibrium fecundity that results from the population of fish at the ERP-F target and threshold, respectively, were calculated using the same methodology used to produce the single-species fecundity reference points in the past. As shown in this table, the 2017 estimates of fecundity were above both the ERP target and threshold, indicating the stock is not overfished. This

is the only slide I have on the reference points, so at this point we can discuss the service.

CHAIR WOODWARD: Thank you Corrin, it is a fairly straightforward analysis, so I'll open up the floor for questions for Corrin for our FEC reference points component of menhaden.

MS. KERNS: I don't see any hands raised, Spud. Oh, here we go, we have Emerson Hasbrouck, and then Lynn Fegley.

CHAIR WOODWARD: Okay, go ahead Emerson.

MR. EMERSON C. HASBROUCK: Thank you Corrin for your presentation. What are the current 2020 fecundity levels? Is that what is in that column on the single-species fecundity, or is it something different?

MS. FLORA: This is based on the terminal year of the assessment. It is the 2017 estimated fecundity.

CHAIR WOODWARD: Did that answer your question, Emerson?

MR. HASBROUCK: Yes, thank you.

CHAIR WOODWARD: Go ahead, Lynn.

MS. LYNN FEGLEY: I would be willing to make a motion if you're ready.

CHAIR WOODWARD: I tell you what, if you'll hold on just a second. Let me call on Jeff Kaelin. When the AP met recently, they talked about this, not in great length. I would like to give them an opportunity just to provide the AP perspective on this. Jeff, would you mind doing that for me?

MR. JEFF KAELIN: No, Mr. Chairman. Good morning to the Board. I'm speaking to you about 100 miles south of Long Branch, New Jersey. I'm very sorry that we're not all together at the Ocean Place Resort, and I look forward to the opportunity for us all to get back together in person again.

I'll just make a brief introduction about our AP meeting at 5:00 p.m. on October 8. I will comment at this time just briefly on the ERP portion of the discussion. We had pretty good representation of the AP. A number of people, however, were not able to actually get on the call, so I provided them an opportunity to provide written comments.

Really what we've done in the past, and as long as I've been Chair, is give everybody a chance to offer their own individual comments, and try to have those reflected, or at least the sense of them in the memo. I think Max did a good job with that. On the ERP fecundity target and threshold discussion, Max reviewed what we've just seen.

There were some clarifying questions about better understanding the ERP assessment, and how the ecosystem reference points were calculated. That was similar to Emerson's question, I think, trying to compare the 2017 fecundity projection against how it has been calculated in the ERP model. There were no recommendations made by the AP, Mr. Chairman, and the remainder of our meeting focused on the TAC alternatives. That's all I have, thank you.

CHAIR WOODWARD: Thank you, Jeff, I appreciate that. Okay, Lynn, back to you.

MS. FEGLEY: I would move to approve the Ecological Reference Points fecundity target and threshold, which correspond with the fishing mortality ERPs approved in August 2020, for the management of Atlantic menhaden. The ERP fecundity target and threshold are to be defined as the equilibrium fecundity that results when the Atlantic menhaden population is fished at the ERP-F target and threshold respectively.

CHAIR WOODWARD: Thank you, Lynn. We have a motion; do we have a second?

MS. KERNS: Malcolm Rhodes.
CHAIR WOODWARD: All right, we have a second from Malcolm Rhodes. Okay, so we have a motion and we

have a second. You can see the motion. Is there any discussion on the motion?

MS. KERNS: No hands are raised.

CHAIR WOODWARD: Any opposition to the motion, if so, please raise your hand.

MS. KERNS: I don't see any hands raised.

CHAIR WOODWARD: Motion on the Total Allowable Catch projections.

MR. MAX APPELMAN: Sorry, Spud, you broke up a little bit there.

CHAIR WOODWARD: Let's go ahead and move on to the Total Allowable Catch part of the presentation.

MS. KERNS: Spud, I'm not sure if Maya heard you say, just so you know Maya, **it was motion carried without objection.**

MS. FLORA: Okay Maya, whenever you are ready next slide, and we will continue, thank you. With the ERPs established we moved to the TAC specifications. As a reminder, in the past the Board has set annual or multiyear TACs based on best available science. With the established ERPs the projections were run using the BAM, since this model is better at short-term projections.

Based on the ERP difference in the BAM from the last time the Board reviewed projections in 2017, there was also an update on how recruitment is projected. The terminal year of data for these projections is still 2017, as that is the terminal year of the assessment. We are projecting out a few years now at this point.

As discussed at your previous meeting, under the single-species reference points the Board suffered acceptable risk to a lower probability. Now that the Board has established ecological reference points, you may consider a level of risk is acceptable, which is higher or lower than when we were using the single-species reference points.

The TC undertook the analysis of Board task for projections. These were to provide the TAC that have a 25 to 60 percent probability of exceeding the ERP fishing mortality rate, or F target in 5 percent increments using 2021 and 2022 combined, and separate by years, and the percent risk of exceeding the ERP F target and threshold if the current TAC was changed, by negative 10 percent to positive 10 percent, also in 5 percent increments.

This includes a 0 percent change, or the current TAC. As referenced, here is Table 1 from your memo. Again, 2017 is the terminal year of the assessment. In 2017, F was below both the ERP target and threshold at 0.16. However, the TAC was lower in 2017, and landings were below the TAC.

To adjust the first Board TAC to provide TACS that have a 25 to 60 percent probability of exceeding the ERP target. In 5 percent increments using 2021 to 2022 combined, and as separate years, a TAC was then calculated for the projections using 2021 and 2022 or separately. Table 2 in the memo is presented here. There were two approaches for combining the year that the TC discussed. One approach was to provide the average value of the risk at the probability level. However, there was not one unique solution with respect to the average. There were confirmed by the TC that this would result in confusion.

The second approach was to provide the TAC that does not exceed the level of risk for either year, or the lower of the two TACs provided in the Table 2. Therefore, the TAC for 2021-2022 combined would be the TAC of 2021, when the years were calculated separately. Associated TACs for combined years ranged from 148,000 metric tons at 25 percent probability to 197,200 metric tons at 60 percent probability.

To address the second Board task, percent risk of exceeding the ERP target and threshold under the current TAC and levels above and below this TAC, the TC calculated percent risk in both years. Increasing the current TAC has a 0.5 percent chance of exceeding

the ERP threshold. As for the ERP target, risk ranges from 52.5 percent risk with a 10 percent reduction from the current TAC, to a 70.5 percent risk of exceeding the target with a 10 percent increase in the TAC.

To inform the Board further, the TC has provided in the memo figures displaying the fecundity, recruit, full F fishing mortality rate and landings for projections done with a current TAC of 215,000 metric tons, a 10 percent increase, 25 percent risk of exceeding the ERP target, and 60 percent chance of exceeding the ERP target.

This slide represents the current TAC. The blue lines indicate the ERP threshold. The orange lines indicate the ERP target. The dashed black line is the 50th percentile or the medium. The dotted black lines are the 25th and 75th percentile. The solid black lines are the 5th and 95th percentile. Another way to visualize fishing mortality is with a density plot of F by year. The density plot in 2021 illustrates a 50 percent risk probability with the current TAC.

The dotted vertical line represents the F mean. The dashed vertical line is the F target, and the solid line is the F threshold. F has the highest chance of being close to the target, and a lower chance of being at the extreme values. The same analysis was run for 2022. Peaks in density are similar in F for years from 2021 to 2022, just at a higher magnitude. With that I can take questions from the Board for any clarification.

CHAIR WOODWARD: I tell you what. If it's all right with you, Corrin, what I think I'll do is ask Jeff Kaelin to give his AP report, and then we'll do questions for both you and Jeff, if that sounds good.

MS. FLORA: That sounds good.

CHAIR WOODWARD: Okay, so Jeff, if you will go ahead and give the AP report for me please, sir.

ADVISORY PANEL REPORT

MR. KAELIN: We had 13 of 18 members present. There are one or two people who wanted to drop off, or who have dropped off, and I think Max knows who those folks are. What we did, as Chair I did not make any comments. I normally don't, I use the meeting to take comments from the other AP members. In this case, Mr. Chairman, we have 12 members of the AP, 7 making comments in support of the status quo TAC, and 5 that had other perspectives. If we have time, I think it would be useful for me to talk through these bullet points. I'll ask you that, Spud, as the Chair, whether I should take that time. Perhaps there will be the same arguments or discussion that the Board itself will have, but I can go through those quickly if you would like me to.

CHAIR WOODWARD: Yes, please do, Jeff, I think that would be good for the Board.

MR. KAELIN: Seven AP members spoke or submitted comments in favor of the status quo TAC. The rationale was as follows. Given the precautionary nature of previous TAC decisions, which resulted in an F below the interim or F target in recent years, a risk of 66 percent of exceeding the new ERP-F target will not adversely impact the role menhaden play in the environment.

It's overly precautionary to set the TAC for menhaden based on the risk of exceeding the ERP-F target. For example, the federal risk policy for setting an ABC is based on risk of exceeding the OFL, the overfishing limit, a value akin to the ERP-F threshold. Status quo has 0 chance of exceeding the F threshold in both years.

Since the striped bass population is overfished, there is less demand for menhaden right now, and it was explained previously that even setting the TAC to 0 for menhaden would not be enough to restore the striped bass population. Then, given the precautionary nature of the TAC in recent years, maintaining the TAC at current levels for the next two years is reasonable, and supportive of the environment and the fishery.

Then the TAC should remain status quo, particularly during this time of economic crisis, due to the COVID-

19 pandemic. Additionally, harvest in 2020 will be well below the TAC due to lost fishing opportunity, thus providing an additional buffer to the fishery. In other words, there were some fishermen that spoke about their inability to get a complete season out of this fishing year, due to the virus. Not in all cases, but it was brought up.

Then there were five AP members that spoke or submitted comments in favor of setting the TAC at a level associated with the 50 percent probability exceeding the ERP-F target in both years. The rationale included the statement that fishing at the ERP-F target is intended to maintain a forage base for striped bass and other predator species that support important commercial and recreational fisheries, 50 percent risk tolerance exceeding the F target is appropriate, and consistent with past decisions.

Then the Board should continue on the path of ecosystem-based management, and not revert back to single-species management approaches. These TAC values are guided by newer modeling and management approaches, which the Board committed to in August, with the adoption of the Ecosystem Reference Points.

Another comment was that its important the Board give the ERP models every opportunity to do what they are intended to do. Future decisions should be consistent with the ERPs that have been implemented. These decisions go beyond helping rebuilding the striped bass population. Anything less than a 50 percent probability relative to the target, is inappropriate. The value of other fisheries that depend on menhaden as forage must continue to be considered. Then yes, there is good abundance of menhaden right now.

That is the result of precautionary management actions. These new ERPs allow for continued success. Those were the specific comments on this portion of your meeting, Mr. Chairman. I think I'll close out thought by saying that one of the other issues that was on our agenda was the election of a new AP Chair. I guess when you get to be my age, you get put out to pasture.

I will no longer be your Chair, but I will look forward to remaining on the AP. Meghan Lapp from Rhode Island was elected the new AP Chair, and she will assume the Chair position after this meeting this week. By the way, Meghan just became the Chair of the New England Herring Advisory Panel with Bert Jongerden retiring. I think Meghan will do a good job as the Chair, she is with Seafreeze in Rhode Island, many of you know her all ready.

I was pleased to pass the torch to Meghan, and then finally Mr. Chairman, there were a couple of AP members who talked about their on-the-water experiences in recent years, and commented that there have been more small fish and fewer larger, older fish in the catch, particularly in the northeast, this was inshore in the Gulf of Maine, I think.

Then the AP also did express some concern about the 6,000-pound incidental catch provision, and that participation and effort has really increased to concerning levels in recent years. The harvest under the provision does not count towards the TAC. The AP recommended that these issues be addressed in the next management measure that you move, that the Board would move ahead for Atlantic menhaden, Mr. Chairman. The AP adjourned the meeting at 6:45, and that ends my report. Thank you, I am happy to answer any questions.

CHAIR WOODWARD: Thank you, Jeff, I appreciate your report, and I appreciate your service to the Commission. I can just tell you, being put out to pasture is a relative term, because a lot of us thought we would return and be put out to pasture and we were not, so we look forward as you continue to participate on the AP. At this point I will open up for questions for both Corrin and Jeff.

Just raise your hand and we'll take them in the order in which the hands are raised. We also have the menhaden brain trust with us, both from the Commission and from NMFS, Beaufort Labs. If you've got questions that sort of harken back to the models and some of the other analyses, then we can certainly

try to see who those are addressed to. With that, Toni.

MS. KERNS: You have Justin Davis, John McMurray, and Jim Estes.

CHAIR WOODWARD: Okay, go ahead Justin.

DR. JUSTIN DAVIS: I have a question for Corrin, and it goes back to those density plots of fishing mortality under the 216,000 metric ton TAC. I'm wondering if we could possibly, yes there they are. These are interesting. I've got two questions. One is, what is the explanation for sort of the bimodal kind of distribution here, and also if I'm interpreting these correctly. This suggested under a status quo TAC most model outcomes would suggest that we're going to end up with a fishing mortality rate that is above the target. I'm just wondering if that is a correct interpretation. Thanks.

MS. FLORA: Katie may be better at answering the bimodal portion of this.

DR. KATIE DREW: Sure, I can jump in there, and hand it back to you when we're done. But basically, so the way these projections are done is that we're taking output from our uncertainty runs the MCB runs, where we take different combinations of parameters, and to figure out sort of the uncertainty about where we are in the terminal year, and then project that forward with additional uncertainty about recruitment and things like that.

One of the things that we found when we did the initial set of uncertainty runs, kind of about the terminal year, is that there is some combinations of fecundity and natural mortality that result in a much larger population, and a lower F rate. That sort of represents that little peak to the left, where that same set of landings will give you a lower F rate. Then there is also a big chunk of those runs come out centered around that higher F rate and a lower biomass.

When you pull from that combination of runs, you get that same set of landings will give you a higher fishing mortality rate, which is that bump further to the right. It's related to some of the uncertainty in the model, about where we are in 2017, and how that gets folded into these projections. I think actually Amy Schuller is also on the line, so if she has anything that she would like to add to that answer, she would be a good choice as well.

MS. KERNS: Amy, if you raise your hand, I will be able to find you quickly, so I can unmute you, just in case you are not unmuted.

MS. AMY SCHULLER: Hi, Kristen already unmuted me. Yes, it's just a function of the uncertainty analysis, which is what Katie just described. A lot of these plots can have that kind of an appearance.

CHAIR WOODWARD: Okay, Corrin, anything to add to that?

MS. FLORA: Nothing else from me. That was much more concise than I would have been able to put it, so thank you very much, Katie.

CHAIR WOODWARD: Justin, any follow up on that?

DR. DAVIS: I'm good, Mr. Chair, thank you for those answers, those were great.

CHAIR WOODWARD: All right, John McMurray.

MR. JOHN G. McMURRAY: I have a question about the AP report, but I suppose it's for Corrin. It seems to be a common theme that no matter how much we reduce F on menhaden, it's not going to bring striped bass back, and of course that's true. It will take a significant reduction in F along with probably a few good JAIs to get us where we need to be. But at the AP meeting the industry seems to be arguing that the striped bass population is reduced to such an extent right now that we don't need all that menhaden. Now, my understanding is that striped bass was used for its sensitivity to the model, and it is not necessarily the only species affected. In other words, if there is enough striped bass at target SSB, then there would likely, if there is enough for striped bass to target SSB.

Then there would likely be enough for everything else, bluefish, weakfish, dogfish. In other words, it's being used as an indicator species. Is that correct? I mean it's not simply that we don't need all this menhaden in the water, because striped bass are depleted. That is my question. I have a follow up too, depending on what the answer is.

MS. FLORA: Yes, the ERP target and threshold are both based on the ability to reach the maximum F of menhaden that sustains the striped bass at their biomass target. This is when striped bass are fished at their F target. We are using the striped bass target of biomass in the menhaden target and threshold.

MR. McMURRAY: Okay, I understand that. I guess what I was asking is that it's not really just based on, I mean stripe bass was picked because other species would theoretically do well if there was enough menhaden for striped bass at target SSB. Is that correct?

MS. FLORA: For the most part, yes. The striped bass, it was the most consistent model and yes, the assumption is that if we sustain the striped bass the other fisheries will also be sustained.

MR. McMURRAY: Okay, thank you. Going back to striped bass, a theme on the other side is that the continued intensive fishing on menhaden does reduce the probability of a striped bass recovery. It's common in the comments to reference that menhaden fishing at its current level actually reduces the striped bass stock by 30 percent.

Can you clarify that, and what specifically are they referring to when they mention that 30 percent number? I would also like to ask about the viability of maintaining a menhaden population a level high enough to provide for that continued availability as the stock rebuilds.

DR. DREW: This is Katie, I can maybe jump in on some of the ERP questions. The 30 percent comment I don't think is one that I've heard before. The idea is that if you, we said originally that if you don't reduce fishing mortality on striped bass, there is no level of menhaden harvest, including a moratorium, that would bring striped bass back to the target.

That obviously doesn't mean that striped bass would not benefit from less fishing mortality on striped bass under that scenario, but changing F on menhaden isn't sufficient to bring F back to their target. However, when it's combined with a reduction in F on the striped bass side, then fishing menhaden does have an impact on the striped bass recovery trajectory.

If you consistently fish menhaden above the ERP-F target, then you're going to jeopardize the recovery of striped bass to their target, even if you bring striped bass F down to their target, down to the striped bass F target. You need kind of that combination of fishing menhaden at the ERP target, and fishing striped bass at the F target to bring stripe bass back up to their biomass target. If one of those Fs is significantly off, then it's going to affect the trajectory of that recovery. I think people were talking, one of the things that came up maybe was this idea that right now striped bass has taken a cut on the fishing mortality side. We put in new regulations to bring F down to the target.

Starting in 2020, although it looks like declines in catch in 2018 and '19, have also benefited the stock. But that if we kind of continue where we're at the F target for striped bass, then at the end of our rebuilding plan we'll have a 41 percent chance of being at or above the SSB target. I'm not sure if that is where that number came from, but I don't know if this is helpful, or if this helped answer your question, or if there is anything you want to clarify about your question.

MR. McMURRAY: Actually, no that was very helpful, thank you, Katie.

CHAIR WOODWARD: Thank you, John, Jim Estes.
MS. KERNS: Spud, you also have Adam Nowalsky had his hand up next.

CHAIR WOODWARD: All right, I'll call on him after Jim.

MR. JIM ESTES: Good morning, Mr. Chairman. Corrin, thank you for the memo and the explanation, in fact I think I almost got it. If you wouldn't mind going back to Table 2, I have a couple questions about that, if you don't mind. My question is, it appears to be as you go from TAC for 2021 to TAC for 2022 underneath each scenario, there is an increase, and so I have two questions about that. Why does it increase? Secondly, could we expect a similar trend for the third year?

MS. FLORA: When you do the years individually, the reason the second year has an increase is due to recruitment. In theory, without the additional years of landings, if we kept projecting forward, there is a possibility that the third year would also increase. But all of that is based on the model and the recruitment from year to year.

MR. ESTES: Okay thank you. That is what I expected, thank you.

CHAIR WOODWARD: Adam Nowalsky.

MR. ADAM NOWALSKY: This is a good slide to be on here, but I'll refer back to what I believe was the first bullet point in the first slide that talked about our task here today to set annual specifications for 2021-2022 specifications. The question I have is, does annual mean something different for 2021 and 2022? Are we looking to set a single number for 2021 and 22, or do we have the option before us today to set a single annual number just for 2021, and then revisit that for 2022? Once I get an answer to that I would like to have a follow up question.

CHAIR WOODWARD: Yes, we have the option as a Board to set.

MS. KERNS: Spud, you're cutting out. We can't hear you right now.

CHAIR WOODWARD: I think it is our intent to set it for two years. We can set it for one year. I'll remind everybody, if we do not make a decision about 2021 and 2022, then the current TAC would carry forward. Max, Toni, anything we need to clarify on that? Did I get it right?

MS. KERNS: Spud, you cut out in the middle of your beginning. I think probably what you said, and just to make sure Adam has an answer is that you can set it for multiple years or not, it's the Board's choice. As you just said, you thought it was the intention to set it for two years. But Adam, if you only set it for one year you don't have to revisit for the second year, you would just set the second year later on. If you set it for two years, you can always revisit what you have set. If you revisit and want to make a change, then it would be two-thirds majority vote to change it.

MR. NOWALSKY: Okay great, so basically there are five options on the table. Do nothing, which means we roll over with status quo measures. Next option is set the TAC for one year for 2021, which would require us to take this process up again same time next year. Next option is to set a TAC that would be the same for 2021 and 2022. Fourth option is to set a TAC that would be different in 2021 and 2022, and then the last option would be to set some number, either the same or different for 2021/2022, but revisit it for 2022 with a two-thirds majority.

If we went the route of just one year, setting only 2021, is there anything from a technical nature that could be brought forth? We know that a lot of work went into this ERP work. It's an ongoing task. Is there anything that would come forward to us that would better inform us for 2022, if we only took action for 2021 today?

MS. FLORA: The additional data that we would have would be the actual landings for 2020 that we would be able to put into projections. Beyond that I don't think that there is any other data or analysis that would be available at that time.

CHAIR WOODWARD: Thank you, Corrin. Toni, anymore hands raised for questions?

MS. KERNS: I don't see any hands currently.

CHAIR WOODWARD: Okay, any questions? It's your last opportunity.

DR. DREW: Toni, I see several hands up, actually.

MS. KERNS: Allison Colden had her hand up, then Ritchie White, and somebody else just had their hand up and then they put it down.

MS. TINA L. BERGER: Toni, you have a bunch more.

MS. KERNS: We have John Clark and Conor, Nichola and Dennis, and then Justin Davis.

CHAIR WOODWARD: We had Allison, Ritchie, John Clark, who else?

MS. KERNS: Conor, Nichola, Dennis, and Justin.

CHAIR WOODWARD: Okay, we'll start with Allison, go ahead.

DR. ALLISON COLDEN: I just wanted to get some feedback from the Technical folks, so about one of the comments from Jeff Kaelin's AP report, and I want to make sure I'm understanding this correctly. I think Jeff reported from those who are in support of status quo that the F is below the ERP-F target, and I think that that is referring to the 2017 terminal year F.

My understanding of that is that the terminal year F was under a lower TAC, and also a TAC, or a harvest level that was lower than some of those that we're considering today. I was curious if the technical folks could sort of walk us through that and explain where the 2017 harvest levels and TAC were that got us to that F that was realized in 2017.

MS. FLORA: This is Corrin, so Allison, you are correct that in 2017 the TAC was lower, and the associated landings were also lower. Those are associated with that F, which is under the target and the threshold. Is there more to the question than that? I know that gets the first part of your question.

MS. COLDEN: Yes, that pretty much covers it. I was hoping we would have those numbers on hand, but if you don't have them at the ready, then that will suffice, thank you.

MR. APPELMAN: There is a table in the report, Allison, we showed in this presentation. Maya, if you could go back one slide. I think this shows what you're asking for pretty well. The 2017, that is the terminal year from the assessment, and that 0.16, which is below the ERP-F target and F threshold, represents the harvest level that occurred in 2017, which is in that last column, 173,000 metric tons, which in turn was below the TAC of 200,00 metric tons.

We've been hearing a lot about a TAC of 216,000 metric tons. That has been the TAC since 2018. That is the number that is everyone's mind, so I think this is a good reminder that that terminal year estimate 0.16 reflects the landings that occurred in 2017, which was also under a lower TAC.

MS. COLDEN: Thanks, Max, that is what I was looking for, I appreciate it.

CHAIR WOODWARD: Ritchie White.

MR. G. RITCHIE WHITE: I have a question for whoever is able to answer. I would like to know, are there any species that the Commission manages that we maintain a population at or above the target?

MR. APPELMAN: I can jump in. Just with my experience with striped bass, I mean that's a good example of a management program that also manages towards the target, both the fishing mortality and biomass targets. I'm sure there are other examples, but that is the one I'm most familiar with.

MR. WHITE: Follow up, Mr. Chair.

CHAIR WOODWARD: Yes, go ahead, Ritchie.

MR. WHITE: I was trying to get at what we're doing here today would be to keep a population at or above

the target, and I'm wondering if we have any species we manage, where we accomplished that. Are there species? I know we attempt to reach the target on all our species that have target and thresholds, but are there any species that we actually accomplish maintaining a population at target or above?

DR. DREW: Spiny dogfish is actually currently above their biomass target. As just one example, that actually is in this model already.

MS. KERNS: Black sea bass is also above its target.

MR. WHITE: Thank you, that's helpful.

MS. KERNS: Cobia is as well, maybe?

CHAIR WOODWARD: Thank you, Ritchie, all right, John Clark you're next.

MR. JOHN CLARK: Thank you for the presentations they were very informative. My question is for Jeff Kaelin about the AP, and I'm glad this slide is up here, because it shows that the landings have been below the TAC for the past three years. Jeff, it wasn't clear from the report what the economic impacts of reducing the TAC would be at this point.

Obviously, menhaden is a critical bait for so many other commercial fisheries like blue crab, and now increasingly for lobster. The members of the AP, did any of them express concerns about being able to meet the demand for other fisheries, and what impact this might have on the economics, because we really don't see much about the economics at all in what we've been looking at here?

MR. KAELIN: Well, unfortunately, you know I spent a lot of time at the Councils too. You know we see a lot more economic evaluation at the Councils than we typically do at the Commission. I think that the people who were in favor of status quo perspective is that the stock is in very good condition right now. Getting back to John McMurray's questions about striped bass, in relationship to where we are today.

With striped bass not being rebuilt until 2029, I think we feel the stock is in very good condition. All I know, I'm also on the New Jersey Council, I'm not representing the New Jersey Marine Fisheries Council right now, but I am the Chairman of that committee, and we had an AP meeting the other night.

I know here in New Jersey in round numbers, we were at 80 million in 2011, we were down in the 40 million range after 2012. The Commission has allowed us to get 20 percent back since then. Over the last eight years we've gotten back to about 50 million. At a ten-cent fish that's a five-million-dollar fishery, so here in New Jersey, and I appreciate the opportunity to answer your question, John. A 20 percent cut is a million-dollar loss to fishermen in this state, and most of their small-scale fishermen in the bait market. You're right about the extent of that market, it is significant. It's an opportunity, frankly, to sell more menhaden into the lobster fishery, now that herring is down. By the way, those striped bass estimates, I think there were like four stomachs that had herring in them, so I'm not sure we need a herring buffer here.

I know I'm the Chair, I'm not supposed to editorialize, but it's a lot of money. It's millions of dollars coastwide to not realize the catches that we have now, and have had in the last three years. You can see last year for 2019, it was darn close to the TAC, and in a range that most management bodies would look at it as success.

Frankly, I think my last personal comment is, we should be declaring success with this fishery, frankly. It's difficult, looking at the science, looking at the BAM projections and what you have in front of us with these extremely conservative ERP projections that we could all be declaring victory here and saying, you know what we're already there.

I think we would like to minimize the potential to lose a million dollars in the menhaden fishery this next two years. The last thing I'll say is, you know to Adam's point about setting a TAC for this year, and then taking

a look at what happened next year. You would have another year of 216,000 to look at.

Determine what percentage of that TAC was taken, and create new projection to give you a sense of security about your risk tolerance today, rather than taking a hit over a couple of year period that's generated. Thank you for the opportunity to speak, I know that's not traditionally what I'm allowed to do, but that's my swan song, so thanks for the question, John, it's a good question.

CHAIR WOODWARD: Any follow up to that?

MR. CLARK: I'm good, thanks, Mr. Chair.

CHAIR WOODWARD: Conor McManus is next.

MR. CONOR McMANUS: My first question is for Corrin, and I just wanted to clarify this for the edification of the Board. When we look at Table 2 and 3 within the TC memo, obviously the range of TACs within the overlap in a course of different uncertainty, as well as the probability of exceeding the target ERP.

I just wanted to confirm that as we look at those values, we should, particularly from 2021 to 2022, we should consider those analyses mutually exclusive, because they have different risk associated with them, correct, so we shouldn't be thinking about how a TAC in year 2022 of a scenario in Table 3 relates to a scenario in Table 2 that is associated with probability of exceeding the ERPs, correct?

MS. FLORA: You are correct that these should be mutually exclusive, that you shouldn't compare between the two tables.

MR. McMANUS: Great, and my second question is more perhaps maybe for Toni or the Commission. But you know as we think about, and just a follow up to Adam's comment earlier. When we think about years 2021 and 2022, a one vs two-year TAC setting. I'm just curious as to how those timelines may interact, if some of the risk and uncertainty policies that the Commission is also working on, and perhaps timelines at which those tools would be available in the context of our discussions for today.

MS. KERNS: That is a great question, Conor. I believe we're very close to the risk and uncertainty policy being almost complete. I haven't got an update from Jason or Sarah recently on where exactly they are to finalizing. I would need to go to them to be able to give you a better idea of when it would be available. I think there is a possibility it would be available to you next year. Sarah, would that be misspoken?

MS. SARAH MURRAY: No, Toni, that is correct. We're closing in on the finish line, I think, and should have that available, hopefully for the winter meeting.

MR. McMANUS: Great, thanks, I just want folks to consider that. That seems to be a tool that would really aid us in this effort, thanks.

CHAIR WOODWARD: Nichola.

MS. NICHOLA MESERVE: Thank you, Mr. Chairman. I just wanted to come back to the 2020 landings. There was a comment in the Advisory Panel report about lost fishing opportunity in 2020, and an assumption that we would come in below the TAC again this year. (cut out)

MS. KERNS: Nichola, you are cutting out, almost like you have frozen. Hey Nichola, do you think you could try to type your question?

MS. MESERVE: Assumption is that staff has not put any type of preliminary landings data together that would be able to inform us otherwise.

MR. APPELMAN: This is Max. Nichola, you definitely cut out for a good chunk of your question. I think I might be able to piece together what you were asking for. The answer is no. We don't have landings data for 2020 right now, at least we don't have complete landings data. Aside from the number of transfers that have been coming in, we really don't have an indication of which states have utilized or caught their quota this year, 2020.

CHAIRMAN WOODWARD: Any follow up to that, Nichola?

MS. MESERVE: No, thank you.

CHAIRMAN WOODWARD: Dennis Abbott.

MR. DENNIS ABBOTT: We've heard a lot of things this morning. I would like to make a few comments, and then ask a question at the end of my comments. Adam talked about setting specifications for one year, possibly two years, then we would have data from this year. But it would be my opinion that the data from this year, I think Nichola just eluded to that that it might not be very useful, because of earlier comments that COVID had affected fishing habits, so on and so forth. Secondly, I think that we've found, in my opinion in the past, that setting one-year specifications just finds us back doing what we're doing this morning over and over again, and we're better when we do specifications for multiple years, as we've done in herring, shrimp, and other things I'm sure.

Not a proponent of setting specifications every year, unless there is mitigating circumstances. The Board, as the Chair said earlier, we do have that opportunity at any time to take Board action. Earlier too, John McMurray talked about relationships with striped bass, and as he said it's like an indicator species. There are so many other factors, or so many other things that we considered when we went to ERPs.

That being said, we do have to consider you know, the whales and the birds. Another thing that I find up here in the corner of New England is that when there is a robust population of menhaden, we're more apt to see menhaden. When we see more menhaden in our waters, we see more striped bass.

A good indicator of that was 2019, where we had menhaden right in close to the coast for a good part of the summer, and the striped bass fishery was excellent. Not so much this year. All that being said, a final comment would be that too bad that Jeff is going out to pasture, but I'm sure we've not seen the last of him, and we always appreciated having him provide input, and his AP report today was excellent.

But again, he had comments 7 on one side, 5 on the other. If we knew who the participants were, you know we would know what they were going to say, just by knowing who they are and who they represented. That's always the case with the APs. My question would be, this would probably be directed to Katie Drew. What are the implications if we exceed the target for menhaden, in the long term looking out to 2030? What are the implications for striped bass if we're exceeding the target on menhaden?

DR. DREW: I think, you know in the short term, the next couple of years, if there is too much uncertainty in the models to really be able to tell you what's the effect of say going over in 2021 versus 2022? But in the long term, if we consistently fish above the F target, then the ERP model suggests that we won't be able to get striped bass back to their biomass target, even if we are fishing striped bass at their F target.

CHAIR WOODWARD: Thank you, Katie, and thank you Dennis for the comments and the questions. Okay, I have Justin Davis.

DR. DAVIS: I had raised my hand earlier, because it seemed like we were sort of unexpectedly winding down discussion and comments quickly, based on the number of hands that were up, and thought we might be ready for a motion to help focus discussion. It seemed like there were more hands up than we thought at that point. I'll just put it out there that I am prepared to make a motion to help further the discussion, but I'll leave it up to your discretion if we're at that point now, or if we want to take some more questions and comments.

CHAIR WOODWARD: Toni, do we have more hands?

MS. KERNS: I just want to confirm. Allison, your hand is still up, and John McMurray's hand is still up, and I don't know if they had put them down and then raised them back up again.

MR. McMURRAY: Yes, I put my hand back up.

CHAIR WOODWARD: Your hand is back up, John?

MR. McMURRAY: Yes, it is.

CHAIR WOODWARD: Okay well, go ahead.

MR. McMURRAY: Okay, so Jeff brought up the herring buffer, and I'm curious if there was any discussion on that, either at the AP meeting or otherwise, even at the staff level. I know it was a recommendation at some point, but then it seems to have disappeared from all of this.

CHAIR WOODWARD: Corrin, Katie.

DR. DREW: I would say that we had put that out there as sort of a source of scientific uncertainty that the Board might want to consider when they think about how comfortable they are with their levels of risk for this fishery. But we don't have any further quantitative guidance to give the Board on that topic. Maybe if Jeff Kaelin wanted to expand on that I think he could, from the AP perspective.

MR. KAELIN: Yes, thank you, Katie. I did look into this issue. I know that the model that we're going to use projects a significant demand on herring by striped bass on a seasonal basis. For that reason, you know that interaction hasn't been modeled specifically, or at least not peer reviewed, if I remember correctly.

I went to Jon Deroba, and I asked him about the data that was available to make this, create this link between the two species, the demand for herring by striped bass. This is what he said to me. He said from 1985 to 2014, the average number of striped bass stomachs sampled in the spring and fall bottom trawl surveys was 41. The number of striped bass stomachs that actually contained an Atlantic herring averaged 3.

The take home is that the bottom trawl surveys don't sample many striper stomachs at all, and very few actually contain herring. I did not use that information at your AP meeting, but I did at the New Jersey AP meeting, because I wanted to go right to the source, and that is what Jon Deroba, who is the Herring Assessment Biologist at the Fisheries Science Center said to me about this relationship, so that is the only data that I have.

DR. DREW: Just to add to that. You know the Northeast Fisheries Science Center food habits database was not the only source of data that we were using on food habits for striped bass, or for the other species. We do have some other sources of data that included striped bass and the herring relationship. But it's true that the ERP model is kind of sensitive to the levels of herring, which is why we're recommending that sort of status quo intermediate level of herring as part of the reference point calculations, as opposed to the threshold, the below threshold levels of Atlantic herring, when we're actually calculating the reference points.

CHAIR WOODWARD: Any follow up on that, John?

MR. McMURRAY: No, not right now, thank you.

CHAIR WOODWARD: Any other hands, Toni?

MS. KERNS: I'm giving it a pause just to make sure there is none. You just have Justin Davis.

CHAIR WOODWARD: All right, Justin, go ahead.

DR. DAVIS: At this point I would like to make a motion, and I think staff has that motion, so if we could get that up on the screen that would be great.

CHAIR WOODWARD: If you would, please read it.

DR. DAVIS: I move to set the total allowable catch at 176,800 metric tons for 2021 and 187,400 metric tons for 2022 which are the levels associated with a 50 percent probability of exceeding the ERP fishing mortality target, respectively. If I get a second, I would be happy to speak to the motion.

CHAIR WOODWARD: Thank you, we have a motion for consideration, do I have a second?

MS. KERNS: Jim Estes.

CHAIR WOODWARD: We have a second from Jim Estes from Florida. All right, Justin, as maker of the motion, I'm going to allow you to make some comments.

DR. DAVIS: I think we're faced with a pretty significant and precedent setting decision today, but in my mind, I view it as a pretty straightforward decision. I was really proud to be a member of this Commission when we took the vote at the last meeting to adopt the ERP framework for managing menhaden.

It's been a constant backdrop of my, you know about 20-year career now in fisheries management, this discussion about the need for ecosystem-based management, and also sort of the challenges and the frustrations in implementing it. I think it was a really big moment when this Commission took the vote to implement ERPs at the last meeting.

I think it's really telling that we heard sort of an outpouring of support, and positive thoughts about that decision from a wide spectrum of the public across multiple stakeholder groups. To me there is a lot of challenges in implementing ecosystem management. One is developing kind of the scientific machinery or infrastructure to provide the scientific advice you need to do it. You know we were fortunate that we had some really talented people working for a number of years to develop the science to allow this move. There is also kind of the administrative challenge of making the jump to ecosystem management, in the face of the uncertainty of what that means for your current management framework. We had to sit in discussions about that at previous meetings at the Policy Board about, what does this mean for the Commission to make this move? There is uncertainty how it will play out in the future, but we took that brave step of doing it anyways. I think one of the, kind of, sneakier aspects of what's difficult about ecosystem management is that it really makes you make clear value judgments about what you want out of an ecosystem, and then using those value judgments to inform how you make decisions on tradeoffs.

One of the problems with single-species management is that we get stuck in this sort of fallacy of thinking we can have our cake and eat it too, by looking at species in a vacuum. We try to manage them for high abundance, manage everything for high abundance, manage all fisheries for high output.

What ecosystem management makes us do is recognize we can't possibly do all those things at once, that we're going to have to make some tradeoffs. When we adopted this ERP framework, I think what this Board was saying was that we were going to value and prioritize menhaden as a forage fish.

That we would make decisions about menhaden management with that in mind, and that we would take a precautionary approach to menhaden management in the future, giving its value to all the other species that we're managing, and that we would look at tradeoffs through that lens. You know given that, and given that today we're making a pretty precedent setting decision, because this is the first time, we're really implementing this new approach.

I think it's important that we take a risk averse approach. To me, a 50 percent probability isn't really even risk averse necessarily. It's this default probability we use quite a bit, and it's because it's right in the middle. It is really neither risk averse nor risky, it's sort of splitting the difference. You know we use this 50 percent probability all the time when we're making decisions.

For me that's why I feel it's appropriate here. You know we are working on a more robust risk and uncertainty approach that Conor McManus mentioned earlier. We saw a great presentation on that at a previous meeting. Hopefully we'll be able to use that in the near future, but for right now, without

that I think this 50 percent probability is really an appropriate approach.

For sure there is uncertainty here about this decision. We talked earlier today about some of the uncertainties in the model with biomass, natural mortality and recruitment. There is uncertainty about future states of other species that are part of this ERP framework, uncertainty about fishery performance. There is also the fact that the menhaden stock is in a very robust state.

All of these things, I could see how these would lend towards an idea, well maybe we can hedge here a little bit, and sort of try not to take as much of a cut on the fishery side. To me those arguments are not very persuasive. I don't think it's in line with what the majority of the public and our stakeholders want. They want to see us take a precautionary approach to menhaden management. You know at a previous meeting we discussed, this came up again today, the idea of the herring buffer, that there are sources of uncertainty here that indicate we should maybe be more precautionary than 50 percent. Also, looking at the menhaden stock by itself, and saying it is really robust, we're nowhere near the F threshold.

To me that is not persuasive, because that is backsliding into that single-species mindset of just looking at menhaden in a vacuum. For all those reasons, I would really like to see this Board make a decision today to adopt these TACs that represent the 50 percent probability. I think to me this is sort of us making final delivery on the promise that was encapsulated in this ERP approach we have adopted, so I am hopeful that the Board will support this motion.

CHAIR WOODWARD: Thank you, Justin, I appreciate that, very well said. We have a motion, so I want to open up the floor for some discussion on this motion, so Toni, what have you got for hands?

MS. KERNS: You have Allison Colden and Nichola Meserve.

CHAIR WOODWARD: Go ahead, Allison.

DR. COLDEN: I think the maker of the motion did a great job sort of laying this out. There are a couple points that I would like to emphasize here. With respect to the adoption of ERPs, you know this is a long time coming, and something that this Board had committed to, and we finally took that step in August.

But this decision is really the first opportunity that we have to walk the walk of ERPs, and I think it's important to demonstrate to all those who supported the adoption of ERPs that the Board is committed to not only adopting that framework, but making sure that it's implemented in a way that it exceeds its intended goals.

Even talking about the broad swath of individuals that supported the adoption of ERPs. Even the industry supported the adoption of ERPs, and indicated their willingness to work with the Board in the implementation of ERPs. I hope that is the case moving forward, no matter what our decision is here today. But you know industry did indicate their support for the adoption of ERPs, and I think that we have that support behind us when we're making these decisions.

One important point I think Katie Drew has also made clear through our questions and discussion this morning is that we need to be achieving this menhaden F target, if we are going to be effectively implementing ERPs. We talked about the fact that striped bass is simply an indicator species for the full suite of animals and organisms that are in the ecosystem model, and that the Striped Bass Board has already taken actions to try and deal with striped bass, and bring striped bass to its F target.

But if we are not doing our due diligence on our end as a Menhaden Board, to make sure that we're achieving fishing mortality rate at the menhaden ERP target, then we're not going to achieve rebuilding of striped bass. (breaking up) at some point earlier about economic impacts. There are economic impacts

on both ends. If we don't achieve rebuilding of striped bass, there could be huge economic impacts throughout the entirety of the coast, considering what an important fishery it is among a lot of states.

I just wanted to lend my support for this motion, reiterate Justin's points too that really a 50 percent probability comes down to a coin flip, and maybe we should be shooting for more than that. But I think that this should be our primary consideration, as we move through this discussion that we really need to focus on implementing a TAC that will achieve the ERP goals and objectives that we adopted at the last meeting. Thanks, Justin.

CHAIR WOODWARD: Thank you, Allison, okay, Nichola.

MS. MESERVE: I wanted to support a large amount of what Dr. Davis and Colden just said. I do agree that 50 percent probability is the appropriate probability to be setting the TAC to manage this fishery using the ERPs that were unanimously supported by the Board, and it's important that we act in a way that upholds that decision and meets the expectations that we would actually implement the ERPs in a credible manner.

But I do think the Board could use a bit of discretion into how we achieve that that could balance the ecosystem objective with the fishery objectives, just in a minor way that fazes in attaining that 50 percent probability over two years. Unfortunately, the projections that we have present two options to achieve that 50 percent probability, one which is part of the motion, which would cause I believe undue instability in the fishery, by causing an 18 percent reduction, only to be followed by a 6 percent increase.

The other option, if we set it constant at the lower level for two years would forego that increase in quota in 2022. I wish we had asked the TC, no fault of their own, hind sight is 20/20 that we didn't ask for this, would be a TAC that achieved the 50 percent probability by the second year, and that way phases it in.

That type of approach would still achieve our end goal in just two years, but provide more stability, as I said, for the menhaden fishery and the secondary users. Lacking that particular analysis, there is one projection in the TCs memo for the 10 percent quota decrease to 194,400 metric tons, which results in a 52.5 percent probability of exceeding the ERP target in 2022.

When you consider that the projections for 2020 include the TAC for 2020, 2021, and '22, and then being taken in full, which as we discussed is inconsistent with the recent fishery performance, due to some inherent inefficiencies in a state-by-state quota allocation system. It is very possible that the actual probability would be at 50 percent for 2022. I would, if you would entertain it now, Mr. Chairman, like to make a motion to substitute this.

CHAIR WOODWARD: Just hold that for a minute, and let me make sure that we don't have any more discussions on this primary motion. Toni, are there any hands raised, waiting to be called on?

MS. KERNS: Robert LaFrance just put his hand up just now, so I don't know if that is in response to what Nichola is talking about, or earlier.

CHAIR WOODWARD: All right, Rob, go ahead.

MR. ROBERT LAFRANCE: I guess I wanted to make certain that I was on the record as supporting Dr. Davis's motion for the many reasons that he talked about. I just wanted to sort of reiterate the point of view that this is a first time ERP evaluation that the Board is working on. I think it's really important that we do it the way it should be set out, looking to that 50 percent probability, as opposed to something less than that.

I guess I just wanted to strongly support Dr. Davis's motion, and make certain that people understand that. This has kind of been really significant for a lot of reasons, in terms of the Board's action, and to be at the 50 percent, based upon what we've seen thus far, I think makes a lot of sense, and I think it's, as Dr. Davis mentioned, scientifically defensible, as well as

something that I think many of the folks who are watching this deliberation this morning would like to see us do, so thank you for the time, sir.

CHAIR WOODWARD: Thank you, Rob, appreciate it. Are there any other hands up?

MS. KERNS: I don't believe so. Allison, your hand is still up, if you wanted it to be up. All right, she took it down, so she didn't really mean for it to be up, so there are no other hands that are currently up.

CHAIR WOODWARD: All right, so Nichola, back to you, and I'll certainly entertain a motion.

MS. MESERVE: Okay, thank you, Mr. Chairman. On the basis of producing landings that would result in no more than a 50 percent probability of exceeding the ERP-F target by 2020, I would like to move to substitute to set a total allowable catch of 194,400 metric tons for 2021, and 2022.

CHAIR WOODWARD: Okay, we have a motion, do we have a second?

MS. KERNS: Megan Ware.

CHAIR WOODWARD: We have a motion by Nichola Meserve, and a second by Megan Ware. Okay, so I'll open up the floor for comments, questions and discussion on the substitute motion.

MS. KERNS: We have Megan Ware, Maureen Davidson, Jon McMurray, Steve Bowman, and Nichola, your hand is still up. I didn't know if you wanted to speak to your motion or not. Your hand is down, so not Nichola.

CHAIR WOODWARD: Megan, go ahead.

MS. WARE: Good morning everyone. Kind of reading through the public comments we've received, I think there are two things that the public is watching for in the Board's decision today, and the first is kind of our signal on our level of risk with the F target. Then the second is a commitment to implementing ERPs. I thought Nichola's motion that I seconded addresses both of the points. I think this option is trying to find balance here, and takes measurable steps towards getting towards that 50 percent risk target in two years.

I also believe that as we are taking those significant and positive steps to the 50 percent target, this option is affirming that the Board is committed to implementing ERPs. I don't believe that this is setting a precedent for the Board moving away from that 50 percent target, but rather this is a critical step in our implementation of ERPs, which are new to all of us.

There are a couple things which some people have mentioned that make me comfortable with the motion to substitute. The first is that the projections do assume that full with 2020 TAC is harvested. To date we have not harvested a full menhaden TAC, so I think there is a bit of a buffer with that assumption. Then I'll also note, as others have mentioned, that I really wish we had our risk and uncertainty policy to kind of guide us in this decision.

But I do believe that stock status is something that can inform, kind of the window of risk that the Board feels is acceptable. Given the strong status of the menhaden stock, I am comfortable taking the two years to get towards that 50 percent target, knowing that this option is resulting in a significant reduction in the TAC and landings, which will further promote a healthy menhaden stock. I'm going to support the motion to substitute.

CHAIR WOODWARD: Maureen Davidson.

MS. MAUREEN DAVIDSON: Both Nichola and Megan, I agree with their reasons for moving to substitute the motion. I say that we definitely should continue to move towards achieving our ERPs and our ERP targets. But I think if we do it gradually, sort of in a stepwise motion, we will be able to bring all of our stakeholders along with us as we move forward.

I am uncomfortable with us taking a very large step in the beginning, which can adversely affect many of the

users of the menhaden resource. We can still move forward, we can eventually get to our 50 percent probability, but let's do it in a more gradual stepwise motion, so that we do not strongly affect some of our users.

CHAIR WOODWARD: John McMurray.

MR. McMURRAY: Nichola, can you clarify the probabilities of exceeding F in the first and second year with this TAC. Then I have a follow up comment.

MS. MESERVE: May I, Mr. Chair?

CHAIR WOODWARD: Yes, go ahead, Nichola.

MS. MESERVE: Looking at Table 3 in the memo from the TC. This is the analysis that represented the 10 percent quota reduction, and it results in a 58.5 percent probability of exceeding the ERP target in 2021, and a 52.5 percent in 2022, based on the landings in 2020, 2021, and 2022 achieving the full TAC.

MR. McMURRAY: Okay, thank you. I'm sorry I missed that in the material. I want to be okay with this, because I don't think it's unreasonable. But I'm having a difficult time doing that, because the way the general public will see this is that we agreed unanimously to adopt ERPs in August with the support of scientists, academics, anglers, conservationists, pretty much everyone.

But while the Board said it would manage menhaden for their role in the **(breaking up).** When it comes down to actually having to make a decision to constrain landings, one that will have at least a 50 percent chance of achieving that intent, well than no, we're not going to do that. We're going to take a gradual approach, and we'll continue managing menhaden as if it were just another industrial commodity.

It's the same old perception that the public has had about this management body since for as long as I can remember. We don't make difficult decisions that might impact industry, even when the science is clear that we should, and we capitulate to special interest. Frankly, it's hard to argue that that perception is incorrect.

A 50 percent probability of success should be the bare minimum, given all the uncertainties here, particularly given the recent status of striped bass, bluefish, weakfish, herring, and not in spite of their status. The model only includes a handful of species that depend on menhaden, it doesn't account for things like whales, which are probably the biggest consumer of menhaden in the ocean.

Really, we should probably be considering a buffer. I think anything over 50 percent would be inconsistent with the ERP objectives, and the public will certainly look at it as such. I think we need to do the right thing here, not just for menhaden and striped bass, whales, but also for the integrity of the Commission, so I don't support the motion.

CHAIR WOODWARD: All right, Steve Bowman.

MR. STEVEN G. BOWMAN: In all due respect to my colleague, Mr. McMurray, I am not going to strongly disagree, but I am going to disagree on a certain number of issues. When the tables came out and I started looking at them, Virginia has over the past several years demonstrated a very, very conservative approach to the managing of menhaden.

We don't have to rehash what the Commonwealth of Virginia has done, what we've asked for, and different things that we've done that have been supported by this Commission, and we are greatly appreciative for that. However, after taking the time to talk with my colleagues on the Commission, and also with the stakeholders that I also am responsible for representing.

I believe that this motion is a good one. One of my colleagues made the comment that, you know, and I think Ms. Davidson kind of alluded to it that the ERPs should have an opportunity to work. We should have a chance to take a look and see how things are going, but at the same time they should not be punitive in nature. One can argue whether they are punitive, and

whether that equates to kicking the can down the road. I don't believe so. I believe that the 10 percent number is an appropriate number to give us an opportunity for the two-year period of time, which in response to the question that Mr. McMurray made. We're at 52.5 percent in the second year, which approaches very closely to the 50 percent.

While we're looking at numbers and looking at different variations, we also have to consider the people that are involved in this as well. Whether you call them special interest, I call them just as much a part of the matrix, the bait industry, the reduction industry. We need to consider that in the grand scheme of the decision-making process, and that is the reason I am going to support the motion. I believe this is a good motion.

I did find it interesting that from the AP report, and I'll finish with this that the AP report and the AP meeting was not unlike the Fishery Management Advisory Committee meetings that we have in Virginia. There are those that are on one end of the spectrum, there are those on the other end of the spectrum, and nobody seems to be in the middle. Sometimes the middle road is the place to go, and for that Mr. Chairman, that is the reason I support the motion. I thank you for your time.

CHAIR WOODWARD: Thank you Steve, Toni, any other hands?

MS. KERNS: We have Conor McManus, Lynn Fegley, Joe Cimino, Allison Colden, and Roy Miller.

CHAIR WOODWARD: All right, go ahead, Conor.

MR. McMANUS: Unfortunately, I won't be able to support this motion for a couple reasons. One being with the suite of reasons that Dr. Davis has described in the original motion. I think as we move into the ERP framework, we are looking to try and inform our management practices with the best science available, and I think somewhat ignoring the Table 2.

I'm looking at actual percentage of probability of exceeding the ERP target, and relying on changes in TAC by 10 percent, in and of itself does not behoove us towards that effort. Also, in the context of the risk uncertainty policy framework, I think ultimately, we've been discussing 50 percent, but ideally come 2022 that percentage or probability of exceeding the ERP target will be identified or defined by that policy framework, which we would then move to that.

I think in the absence of that now, the 50 percent allows us to continue towards this effort of making science-informed management decisions. But ideally in a future year, we wouldn't necessarily be kind of burning into a 50 percent probability, we would be guided by this new tool.

CHAIR WOODWARD: Lynn.

MS. LYNN FEGLEY: You know, I just wanted to speak in support of this motion. I think this is a very measured and deliberative way for this Board to move into the realm of ERPs. This is a groundbreaking piece of management. It's new, we haven't done it before, and I think it is our responsibility to make sure that we're not punitive as we move forward, that we walk the path rather than jump off the cliff. I'll just say from a point of history. It was in the fall of 2011 when this Board adopted the first reference point for menhaden at F-30 percent target. I just will say that adopting a target of F-30 percent for this fishery, that is not a particularly conservative level.

But that was a step from what was essentially an unmanaged fishery. We actually set those reference points, and the controversy that surrounded that was enormous. I just want to take a moment to say that in nine years since 2011, we have moved from a fishery that was running with some spatial and temporal restrictions to this.

I don't think anybody, anybody, anybody, not our stakeholders on all sides should undersell the value of what we've done, and the direction that we are moving. I am so proud of our science and our scientists, and I really do think that when we're talking

about the difference between a 50 percent probability and a 52.5 percent probability in year two of exceeding the target, and a 0 percent chance of exceeding the threshold. I think that puts us on a very solid ground to take this forward.

CHAIR WOODWARD: I appreciate those comments. Sometimes it's easy to get caught up in the now, and forget where we've been. But we continue to strive to accomplish this. With that, Joe Cimino.

MR. JOE CIMINO: I'm going to speak in favor of the substitute. You know Justin Davis started this off and I found myself as usual agreeing with him, that this is highly complex modeling and you know something new for us to some extent. Then he kind of mentioned that the 50 percent probability is old hat, something we've done plenty of times.

But the 50 percent probability here plays into this modeling, and all the assumptions that are taking place, including recruitment and assumptions that landings are going to be at the TAC or similar to past landings. We're looking at something different. It's very clear that folks around the table, and in the general public, have a hard time understanding what 50 percent probability means. We hear this coin-flip example thrown out there.

The TC did a great job with the density plots, trying to show that it's a lot more complex than that, and we're talking about a certain number of model runs that fall within the certain bounds, right? In my opinion, and Katie Drew hinted at the fact that the uncertainty in the next two years on all those playing in, kind of changes where we're going.

We know long term we need to be conservative. Luckily, we're able to set a TAC every year. We know we can readjust in the future if we need to. You know to me I look at some of the other things in this model. We heard in both February and August that the reliance on Atlantic herring seems a bit unrealistic.

Sensitivity runs that they did kind of only look at that spatially and temporally are more realistic, more in line as Dr. Cieri said with the diet data. But they don't have that peer review yet to kind of add that to this equation. In that case, to me that gives us that buffer for Atlantic herring. I think that as we see the 2020 landings, as we get a better understanding for where we are, and hopefully get a risk policy that helps guide us here in making decisions in 2022. We will see that this substitute motion was getting us exactly where we needed to be.

CHAIR WOODWARD: Allison.

DR. COLDEN: I just want to make one specific comment. Those who are supporting the substitute motion have provided a lot of information in support of their position. But there is one very specific thing that I would like to respond to, because I think it could set a precedent, which at least for me personally makes me a little bit uncomfortable, and that is, you know in making this decision.

Making the assumption that the 2020 landings will continue to underperform the TAC. Based on the information that we're seeing, what we've heard from the AP about the struggles related to the Corona Virus pandemic, that may very well be the case. But I just find it difficult, and in an uncomfortable situation for the Board to allow that assumption to weigh in our calculus.

When we are looking at different risk probabilities associated with the decision we're making now, I just wanted to go on the record, making the point that we do not currently have any preliminary or final information on the 2020 landings. The risk associated with however far that may be under realized in 2020, personally I don't think should weigh in to the calculus here.

CHAIR WOODWARD: Roy Miller.

MR. ROY W. MILLER: I just wanted to weigh in in support of the substitute motion for a number of reasons, two of which I'll highlight. One, there were

no economic considerations factored into the decision making for the original motion nor the substitute motion directly. I favor the substitute motion, because it does at least give some consideration to the economic consequences of reducing the quota.

For that I find the substitute motion favorable. The actual value of 194,400 metric tons for 2021 and 2022 is within the range of what the industry has achieved over the past three years. I appreciate the eloquent arguments that were offered by the makers of the motion, and some of the responders of the original motion, and also, I appreciate the comments of Lynn Fegley for the substitute, and therefore, I think the substitute is a reasonable way to go at this point in time.

CHAIR WOODWARD: Thank you, Roy. All right, Toni, anybody else in the queue?

MS. KERNS: Yes, we have Thad Altman, Justin Davis. Conor, I don't think you put your hand down, and then Eric Reid, and I was correct on Conor.

CHAIR WOODWARD: Thad, go ahead.

REPRESENTATIVE THAD ALTMAN: I just want to say a few things. One, I'm against the substitute motion, it undoes the original motion that is a concept and an action that is extremely well thought out. It's based on good science, was an extremely well-crafted motion, and it's a measured approach. I think that is the direction we need to take, and therefore I'm against the substitute motion.

CHAIR WOODWARD: Justin.

DR. DAVIS: At this time, if it's appropriate, I would like to move to amend the substitute motion.

CHAIR WOODWARD: Okay, go ahead.

DR. DAVIS: I would like to amend the substitute motion to read, move to substitute to set a TAC of 194,400 metric tons for 2021 and 187,400 metric tons for 2022.

CHAIR WOODWARD: All right, we have a motion to amend the substitute for consideration, let me finish getting this up there.

MS. MAYA DRZEWICKI: Can you just repeat those values, please?

DR. DAVIS: Sure, so essentially the value for 2021 would stay the same at 194,400 metric tons, but the value for 2022 would be 187,400 metric tons.

CHAIR WOODWARD: Okay, so we have a motion to amend the substitute, do we have a second?

MS. KERNS: Eric Reid, are you seconding that or are you just wanting to speak?

MR. ERIC REID: I am not seconding it; I would like to speak.

MS. KERNS: I just wanted to confirm. You have Jim Estes.

CHAIR WOODWARD: Do we have a second?

MS. KERNS: Jim Estes.

CHAIR WOODWARD: Jim Estes seconded it. All right, so we have a motion to amend the substitute before the Board now. I will go ahead and go to you, Eric, and then for those who wish to speak to the motion to amend, raise your hand and we will get you in the queue. Go ahead, Eric.

MR. REID: Actually, as far as the amendment for the substitute, I'm not really sure what the difference is, because my guess is, we're going to be revisiting before 2022 anyway. But my point goes to Mr. Miller's point as well. What does concern me is the science that is lacking in this is the economic science, the socioeconomic science, which is a science.

Mr. Kaelin referenced an ex-vessel price of ten cents in his report, and at 94,400 tons that is 4.7 million dollars in ex-vessel revenue, and if you use an average or a modest economic multiplier, it's usually 3.1, which puts the value of that fishery, the loss at $14,758,000.00 in one year, and you take it over two years and it's pretty close to 30 million dollars. That does concern me. I supported ERPs when we voted on them, absolutely I support them. But I think the substitute, not amended, the substitute, is a step in the right direction.

It's not a giant step, I agree with that, but it is a step towards fully utilizing ERPs, and if we take it a little bit at a time, at least we'll have the direction will be the right direction, so we can at least analyze the effects of it over a little bit longer time.

CHAIR WOODWARD: All right, so I would like to invite those who want to speak to the motion to amend the substitute to weigh in now.

MS. KERNS: You have Justin Davis and Joe Cimino.

CHAIR WOODWARD: Okay, go ahead, Justin.

DR. DAVIS: I'll try to provide a little bit of rationale here for this amendment. I'm receptive to the arguments that are being made around the table about concerns about the original motion. I'm reading those concerns to be concerns about the large reduction in the TAC that the original motion proposes to move to next year, and also a sort of desire to make a more gradual move towards getting to this 50 percent probability, essentially not trying to get there in one step next year, but trying to get there over two years.

My concern about the substitute motion is that probability of exceeding F target in the first year, 58.5 percent. I just feel that is too high, it's not in keeping with what I think the vast majority of the public wants to see us do here. What I'm kind of proposing here is I'm trying to sort of split the difference, with the idea that if we have a TAC of 194,400 metric tons for 2021 that represents much less substantial drop in the TAC next year.

I think if you look at the table of TAC versus landings, this TAC of 194,400 metric ton represents, you know if the entire TAC is caught, not a substantial deviation from what landings have been in recent years. Then by setting it at 187,400 tons in 2022, we will essentially end up at the same point where we would have ended up with the original motion of getting to a level in 2022 that is associated with the 50 percent probability.

I understand that it is a little bit apples and oranges here, and that 187,400 metric tons was predicted to get us to the 50 percent probability under that scenario of setting different TACs in 2021 and 2022, but I think ultimately what this does is sends the signal to the public that we're committed to getting to that 50 percent probability, which is appropriately precautionary TAC. We'll do it in two years, we'll try to have less of a jump down for the fishery next year. That's my rationale for making this amendment.

CHAIR WOODWARD: Thank you, Justin, all right, Joe Cimino.

MR. CIMINO: I think I'm actually going to direct this maybe to Toni as a procedural question, instead of trying to put any of the staff who have developed these tables on the spot here. Toni, you had mentioned for setting 2022, and this is kind of an on-the-fly motion. If we were to approve this amended substitute, would it then take a two-thirds majority if we found that the math really didn't work, to come back and revisit this later? That is my question, thank you.

MS. KERNS: Correct, if you approve this motion then you would need to do two-thirds majority to change it later on.

CHAIR WOODWARD: Any other hands to speak to the motion to amend?

MS. KERNS: I don't see any other hands, but there was a member of the publics in the comments that said they wanted to comment at some point on the TAC motion.

CHAIR WOODWARD: All right, so we have three motions here that we've got to dispense with. In the interest of just letting us ponder on this a little bit, I will open it up for some limited public comment. If you're a member of the public and you wish to comment, raise your hand, and please try to keep the comments focused on the TAC related motions and limit them to three minutes. What do we have, Toni?

MS. KERNS: I know Peter Himchak had asked first.

CHAIR WOODWARD: All right, Pete go ahead.

MR. HIMCHAK: Yes, this entire exercise is about risk and uncertainty. My AP comments were along the line of what the federal councils are dealing with, with OFLs and not targets. The menhaden resource has been managed so precautionarily since 2013, that when an ERP model came up with reference points, we were already under it.

The NWACS MICE model is supposed to be used for illustrative purposes. To that end, I mean be careful about risks that may be unintended. The probability of restoring striped bass is 41 percent of reaching the target biomass in 2029. Leaving so many menhaden in the water, bluefish are closer to their SSB threshold, and striped bass needs a couple good recruitment years. We all recognize that.
But also recognize that the NWACS MICE model could also show, will, has also shown that bluefish moving ahead and being restored, could be to the detriment of striped bass by predation of bluefish on striped bass recruits. Again, tradeoffs are necessary in all this risk and uncertainty. Omega Protein still supports the status quo TAC for the next two years.

CHAIR WOODWARD: Thank you, Pete, anybody else, Toni?

MS. KERNS: Jeff Kaelin.

MR. KAELIN: Thank you, Mr. Chairman, and members of the Board. I pretend that I'm at the table now at the other end of the room, not sitting as the Chair. I just simply wanted to say that I really appreciate Ms. Meserve's and Ms. Ware's motion, and the support for that motion that I've heard from several people around the table who I have a lot of respect for. Not that I don't have a lot of respect for those who support the underlying motion. I don't mean to say that. We've all been at this for a long time, and I really appreciate the spirit of, not the amended substitute, but the substitute motion. I would hope that the Board could find a way to get to that today. You know we do also think the 216 is not going to cause any issues in a negative sense, but I think the optics is important too, so for that reason I just wanted to speak in strong support of the motion to substitute by Nichola and Megan. Thank you, Mr. Chairman.

CHAIR WOODWARD: Anybody else, Toni?

MS. KERNS: I don't see any other members of the public with their hands raised.

CHAIR WOODWARD: Very good, we've had some robust discussion, and we've got to work our way back up to our main motion, so how about we take five minutes to caucus, and when we return from caucusing, we will call the vote on the motion to amend and dispense with it, and (garbled). I've got 11:04, so we'll be back for a vote at 11:09.

(Whereupon a five-minute caucus was held.)

CHAIR WOODWARD: Okay, I have 11:09. If anybody feels they need a little more time for caucusing, if you'll raise your hand right now.

MS. KERNS: Emerson Hasbrouck put his hand up, as did Chris Batsavage and Justin Davis has his hand up.

CHAIR WOODWARD: Is that for a little more time? Is that what you're asking for?

DR. DAVIS: I actually just wanted to ask Toni if we're going to follow the procedure, we've kind of been following at these meetings with reading off the states that vote different ways, because you know, we're not around the table and can't see each other, so it's sometimes helpful to see which states voted which way.

MS. KERNS: Yes, I will read the states as they vote in favor or against, and then also do a check to make sure that your hand has been raised. If you don't hear me call your state or jurisdiction then it means I didn't have a hand for you.

CHAIR WOODWARD: Emerson, Chris, questions?

MR. CHRIS BATSAVAGE: No, I'm good, and we're done caucusing. Thank you, Mr. Chair.

CHAIR WOODWARD: Emerson, how about you?

MR. HASBROUCK: Yes, we still need a couple of more minutes here, thank you.

CHAIR WOODWARD: All right, let's just, I'll tell you what, in the interest of giving everybody plenty of time, let's take another five minutes, so 11:15.

(Whereupon the caucus was extended five more minutes)

CHAIR WOODWARD: Okay, if I can call us back to order after caucusing. Toni, if you will go over that voting procedure one more time, just to make sure everybody is clear on it.

MS. KERNS: You'll ask for those in favor, and one member from each state will raise their hand. We typically ask the Administrative Commissioners, unless the state has worked out somebody else. I will read the name of each state that has their hand up, and then staff will put all the hands down once we have all those states, and then you'll ask for those again, the same thing will happen, null votes or abstentions.

CHAIR WOODWARD: I'm going to assume that everybody has completed their caucusing, is ready to vote. With that I'll turn it over to you, Toni, to call the vote.

MS. KERNS: Looking for those in favor, please raise your hand. Then give it a second to let those hands get up. I have Connecticut, South Carolina, Pennsylvania, North Carolina, Florida, and Georgia. Put those hands down. Jim Estes, you just put your hand up, okay thank you, Jim. Those against.

I have New York, New Jersey, Fish and Wildlife Service, NOAA Fisheries, Delaware, Maine, Rhode Island, Virginia, Massachusetts, New Hampshire, Maryland, and PRFC. I'm going to put the hands down. Those null votes, I do not see any hands raised for nulls. Abstentions, I do not see any hands raised for abstentions. Max, can you give the count, please?

MR. APPELMAN: Yes, let me tally it up, one second. I have 5 in favor, 13 opposed.

CHAIR WOODWARD: I thought we had 6 in favor, it was Connecticut, South Carolina, Pennsylvania, North Carolina, Florida and Georgia, is that right?

MR. APPELMAN: I do not have Florida in favor, so if Florida could correct that.

MR. ESTES: Yes, we were in favor, this is Jim.

MR. APPELMAN: That would be 6 in favor, 12 opposed.

CHAIR WOODWARD: Okay, motion to amend fails, so now we are back to the move to substitute, there has been fairly robust discussion on this motion. Does anybody feel a strong urge to add anything else to the discussion on this motion? If so, raise your hand.

MS. KERNS: No hands.

CHAIR WOODWARD: Okay, then we will call the question on this motion, so Toni, I'll turn it over to you.

MS. KERNS: Is there a need for caucus, Spud?

CHAIR WOODWARD: I don't think so. I think we've had ample time to caucus, unless somebody feels otherwise. If so, raise your hand very quickly or move on.

MS. KERNS: All right, I don't see any hands raised for that. All those in favor, please raise your hand. I have New York, New Jersey, U.S. Fish and Wildlife Service, NOAA Fisheries, Delaware, South Carolina, Maine, Virginia, Massachusetts, New Hampshire, Maryland, and PRFC. I will put the hands down for the group.

All those against the motion. I have Connecticut, Rhode Island, Pennsylvania, North Carolina, Florida, and Georgia. I will put the hands down. Are there any null votes? I see no hands. Are there any abstentions? I see no hands. Max, just to confirm, I have 12 in favor and 6 against. Let me know if you get that same count.

MR. APPELMAN: Yes, that is the same count I have, 12 in favor, 6 opposed.

MS. KERNS: No nulls and no abstentions.

CHAIR WOODWARD: Okay, motion to substitute carries and now becomes the main motion.

MS. KERNS: Spud, if you'll just give Maya a moment to make a new main motion, so folks know what they're voting on, and Maya, I think you can do a new slide if you wanted to. Spud, I think maybe for the record, if you could read this motion as the main motion.

CHAIR WOODWARD: I will. Do we need to add any language in there about associated probabilities, or just it's fine the way it is? Is the way it was made.

MS. KERNS: I think it's on the record, and just Maya, there is no maker or seconder, it is the property of the Board at this point, I believe. If you are satisfied that it is in the record, Spud, and the Board is satisfied, then I don't think you need to add it.

CHAIR WOODWARD: I'm fine, I think we'll have plenty of documentation in the transfer of this to what the intent was here. We have a motion before the Board. Move to set a total allowable catch of 194,400 metric tons for 2021 and 2022. Do we need to add in TAC for Atlantic menhaden, or is it good the way it is?

MS. KERNS: I think it's fine. We know that this is the Menhaden Board, and you guys can't set any other species TAC.

CHAIR WOODWARD: Any need to caucus on this? I wouldn't think so, I think we've pretty much covered it. If so, raise your hand quickly if you feel the need to caucus.

MS. KERNS: I see no hands.

CHAIR WOODWARD: Okay, let's call the vote.

MS. KERNS: John Clark just put his hand up.

CHAIR WOODWARD: All right, go ahead, John.

MR. CLARK: No, I'm sorry, I thought you were calling the vote, I'm sorry, I'm just voting yes.

MS. KERNS: All right, I will call that vote. Just to note for Maya, if you could put in here that this is final action, so it is a roll call vote, but because I say the name of every state, it ends up being a roll call anyway. All those in favor, please raise your hand. I have New York, New Jersey, U.S. Fish and Wildlife Service, NOAA Fisheries, South Carolina, Maine, Pennsylvania, Virginia, Massachusetts, New Hampshire, Maryland, and PRFC. If I didn't call your state, please let me know if you had your hand raised. I'm going to put the hands down.

MR. APPELMAN: Sorry to interject, Toni, I thought I heard Delaware was voting yes, but I didn't hear that state called off.

MS. KERNS: I believe you're correct, but John, I didn't call your state, I apologize.

MR. CLARK: That's all right, we're a yes.

MS. KERNS: Okay, thank you, John. Eric Reid, your microphone is open, just so you know. Those against the motion. I have Connecticut, Rhode Island, North Carolina, Florida, and Georgia. I'm going to put the hands down. Any null votes? There are no null votes, any abstentions? No abstentions. Max, did you have 13, 5, 0, 0?

MR. APPELMAN: That is correct, 13 in favor, 5 opposed.

MS. KERNS: Maya, if you could please write roll call next to that. Thank you.

CHAIR WOODWARD: All right, thank you, Toni, and thanks everyone. We have made that decision. I appreciate the lively discussion; I think there were a lot of good points made. We have obviously entered a new era in fisheries management, and I'll kind of rephrase this to.

It's one thing to stand at the alter and say, I do, it's a whole other thing to make the marriage work. We're going to make this marriage work, and in any good marriage there has to be some compromise. We're moving in that direction. With that, we've come to other business, and I will call on Megan.

MS. WARE: This should be really quick. I did want to note that Amendment 3 has a provision which requires the Board to revisit allocation every three years, and time flies, and 2020 is the third year under Amendment 3. I think we've met this trigger. I'm not hoping to have this conversation today, but I'm wondering if this is something that could be added to the winter meeting agenda, just so we can start that conversation.

CHAIR WOODWARD: Yes, we've been talking about next year, looking ahead with the mandates, to do a fishery review. We will not have complete information for 2020 until April. We can certainly convene a meeting in February, and talk about how we want to approach the allocation review, what data sources we would ask to be reviewed and collated, as well as what other issues are a concern about menhaden management that we need to be discussing. It doesn't necessarily need to be a long meeting, but just a heads up that we'll have the discussion, but we probably really won't have any detailed, quantitative information on which to do a lot of discussion until the spring, but that is fine. It's on our plans, and I'll work with Toni and Bob and all to get, I guess a meeting on the winter schedule. Toni, anything you want to add to that?

MS. KERNS: I'll just state, if there is any information that the Board does want us to bring forward at that February meeting to aid in that discussion, to please send myself or Kirby an e-mail, and we'll start working on that.

CHAIR WOODWARD: Anything else? Any other business that has arisen during the course of today's meeting that we need to discuss? Any hands up, Toni?

MR. KERNS: No, no other hands are up.

CHAIR WOODWARD: Well again, I would like to thank everybody. These virtual meetings are a challenge, but I guess we're getting sort of used to them, hopefully not too used to them. We would all rather be doing this face to face in our old traditional way, and hopefully that will happen, sometime in the not too distant future. Before I call for a motion to adjourn, I just want to make sure that everybody knows that this will be Max's last meeting with us.

Max is moving to NOAA Fisheries; effective I guess November 1. Max has done a great job, he has filled in for Kirby at this meeting while Kirby was off enjoying fatherhood, and the lack of sleep that typically comes along with it. Actually, Max has done a great job, and I personally appreciate everything he has done to kind of help me.

All of us who chair boards know that it's the staff makes us or breaks us, and Max and Kirby, and Toni, all have done a great job. I want to just express my personal thanks. You know we're all giving him a virtual round of applause, and wish him the best. I have a feeling that we will probably be seeing him again in his new role. With that Max, would you like to say anything?

MR. APPELMAN: I'm not good with these thankful speeches, but I really appreciate that, Spud, and I look forward to working with everyone in the future.

ADJOURNMENT

CHAIR WOODWARD: Thank you. All right, with no other business to come before the management board, can I have a motion to adjourn, raise your hand.

MS. KERNS: Motion to adjourn by Mel Bell.

CHAIR WOODWARD: Very good, okay with that we will conclude our business, and I guess we'll reconvene this afternoon for South Atlantic Board. Well thanks everybody.

(Whereupon the meeting adjourned at 11:30 a.m. on October 20, 2020.)

Tina Berger

Subject: FW: [External] Fwd: Menhaden comments for February meetings
Attachments: 2021-01-11_151504 concept 2.pdf; 2020-05-25_171450 Alexs story.pdf; 2020-08-25_220701 WATTS.pdf; 2020-10-12_095502 CBF Release.pdf; 2021-01-11_095931 concept 1..pdf

From: Tom Lilly [mailto:foragematters@aol.com]
Sent: Monday, January 11, 2021 4:31 PM
To: Tina Berger <tberger@asmfc.org>
Subject: [External] Fwd: Menhaden comments for February meetings

To: The ASMFC Policy Board, Staff and Menhaden Board

We are submitting two concepts for consideration (scans 5931,1504) The goal here is to begin a discussion at the Board level of the best way to begin restoring the fish and wildlife of Chesapeake Bay by getting them the menhaden they need at the right place and time and in a predictable amount.

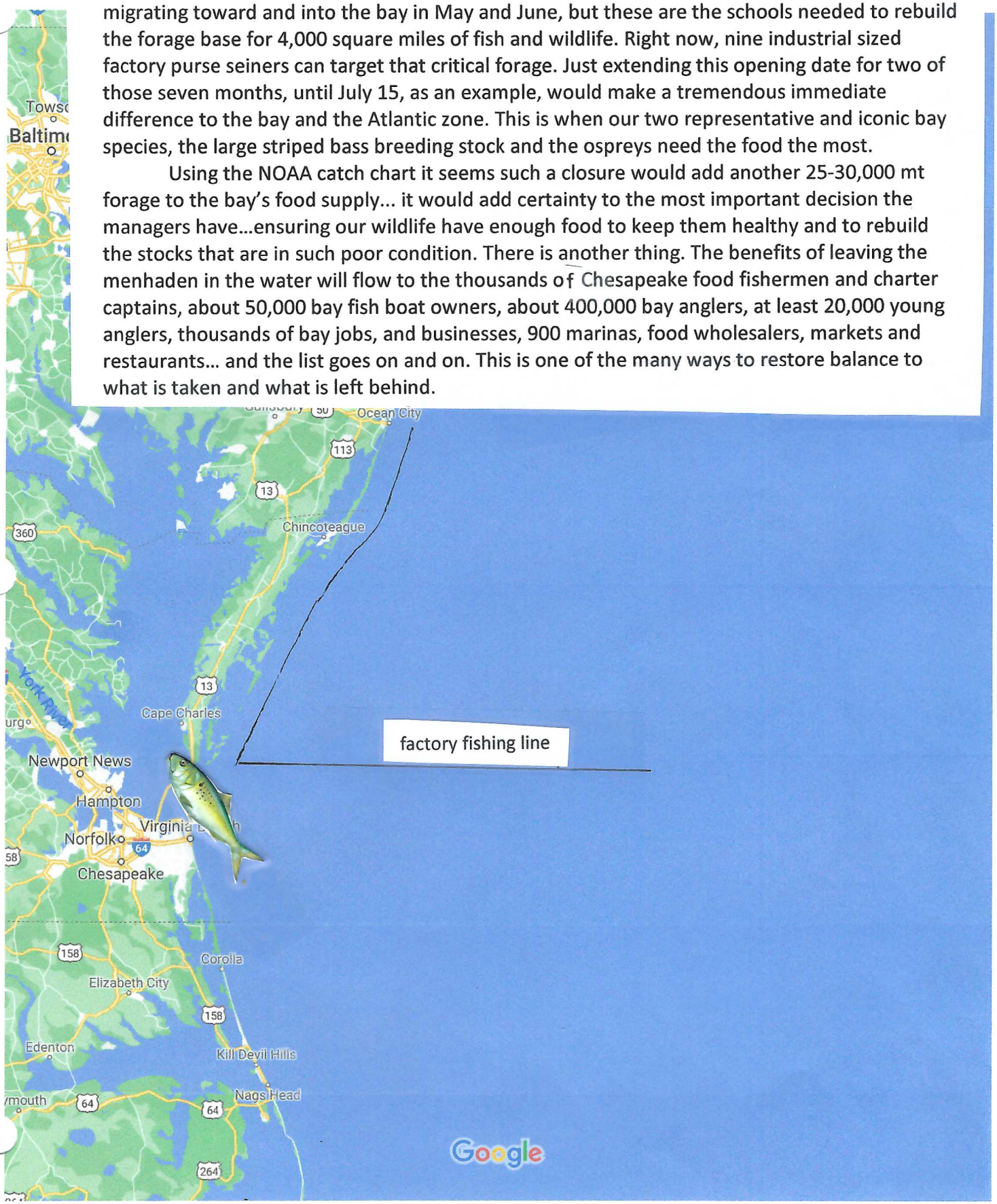
The pandemic has upended the lives of millions of ordinary famlies in the Chesapeake Bay area. There are hundreds of thousands of families on the bay that want to spend more safe time together on or beside our hundreds of creeks and rivers and the bay itself enjoying wildlife and fishing. Among them are the first line caretakes, police , emts and the grocery clerks , the fast food workers. the nurses and doctors and countless others who have put their life on the line for us. These hard working families include the food fish watermen,the charter captains and the anglers. We owe it to all these families to make the out of doors experiences that are so vital now the best they can be. You managers can change the situation on my part of the bay that is very quiet, where there is practically no one fishing. even on the nicest days. Where at least half of our treasured ospreys had nesting failures this summer where they have resorted to catfish and box turtles because they can't find menhaden, where the nearby great heron rookery has disapeared in the last three years, where the charter boats are dwindling and go out about a tenth of what they did and where sadly the fall schooling of the baby bunker that brought with it the great fall fishing here in Whitehaven for a month each year has declined to about nothing. Most of the resident fish we catch are very thin with empty stomachs even late in the day.

There are many sensible measures you can take to change this situation for the better (scans 5502,0701) The socio-economic benefits to the people should be an important part of that discussion. We know everyone is busy but please find time to think about this...can we please have a response from you about this before the meeting and what you think can be done now to help Chesapeake bay. Thank you Tom Lilly 443 235 4465

CONCEPT...DELAY OPENING THE SEASON FOR A TIME THE MANAGERS FIND APPROPRIATE, THEN ALLOW FACTORY FISHING ONLY IN THE US ATLANTIC ZONE NORTH OF CAPE CHARLES

The factory menhaden season is seven months starting in May. Relatively few schools are migrating toward and into the bay in May and June, but these are the schools needed to rebuild the forage base for 4,000 square miles of fish and wildlife. Right now, nine industrial sized factory purse seiners can target that critical forage. Just extending this opening date for two of those seven months, until July 15, as an example, would make a tremendous immediate difference to the bay and the Atlantic zone. This is when our two representative and iconic bay species, the large striped bass breeding stock and the ospreys need the food the most.

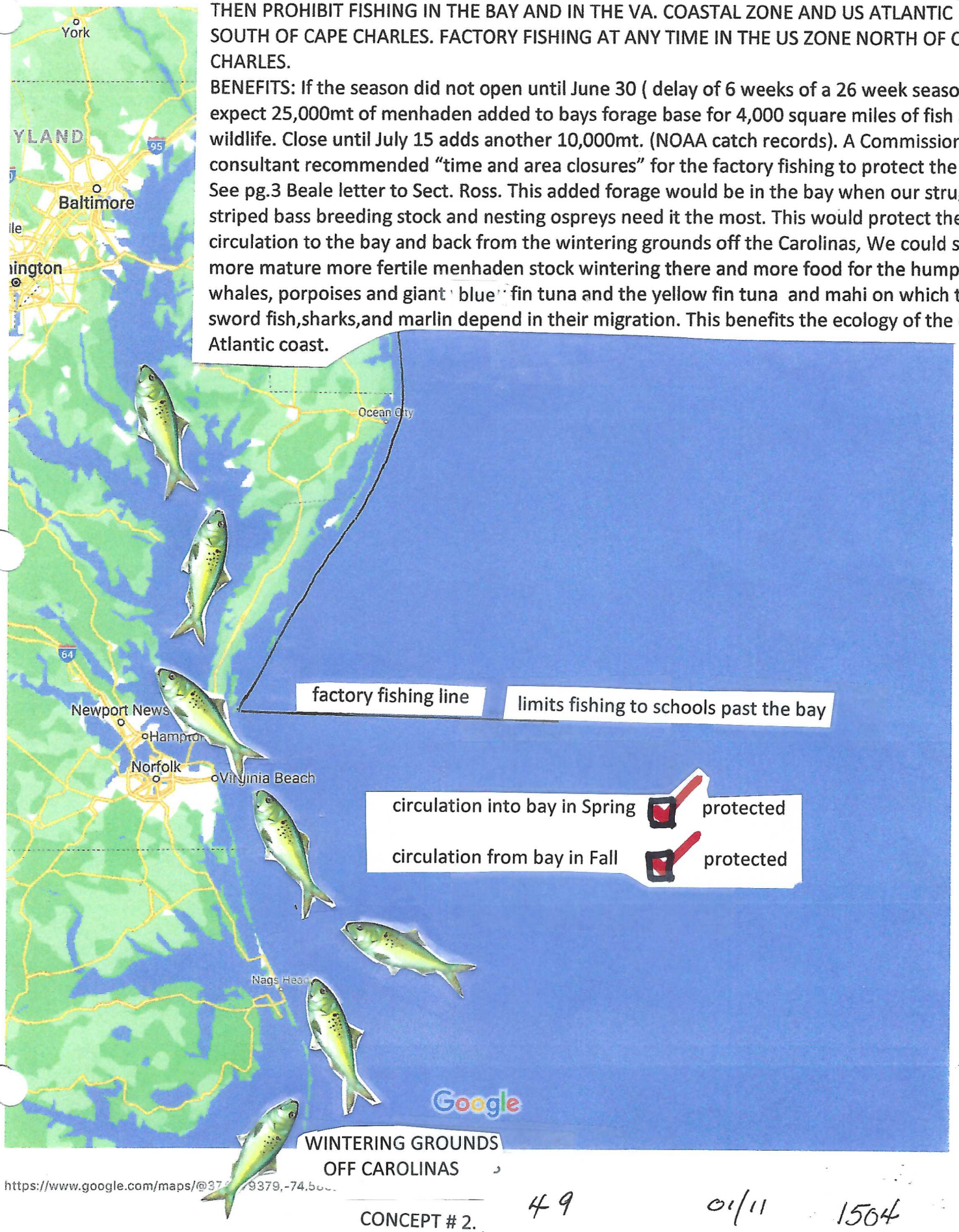
Using the NOAA catch chart it seems such a closure would add another 25-30,000 mt forage to the bay's food supply... it would add certainty to the most important decision the managers have...ensuring our wildlife have enough food to keep them healthy and to rebuild the stocks that are in such poor condition. There is another thing. The benefits of leaving the menhaden in the water will flow to the thousands of Chesapeake food fishermen and charter captains, about 50,000 bay fish boat owners, about 400,000 bay anglers, at least 20,000 young anglers, thousands of bay jobs, and businesses, 900 marinas, food wholesalers, markets and restaurants... and the list goes on and on. This is one of the many ways to restore balance to what is taken and what is left behind.



Concept 1. 48 01/21 5931

CONCEPT 2. (least change) DELAY OPENING FACTORY FISHING IN THE VIRGINIA BAY AND VA ATLANTIC ZONE FOR ENOUGH TIME TO HAVE THE BAY'S MENHADEN FORAGE BASE RECOVER THEN PROHIBIT FISHING IN THE BAY AND IN THE VA. COASTAL ZONE AND US ATLANTIC ZONE SOUTH OF CAPE CHARLES. FACTORY FISHING AT ANY TIME IN THE US ZONE NORTH OF CAPE CHARLES.

BENEFITS: If the season did not open until June 30 (delay of 6 weeks of a 26 week season) expect 25,000mt of menhaden added to bays forage base for 4,000 square miles of fish and wildlife. Close until July 15 adds another 10,000mt. (NOAA catch records). A Commission consultant recommended "time and area closures" for the factory fishing to protect the bay. See pg.3 Beale letter to Sect. Ross. This added forage would be in the bay when our struggling striped bass breeding stock and nesting ospreys need it the most. This would protect the circulation to the bay and back from the wintering grounds off the Carolinas, We could see a more mature more fertile menhaden stock wintering there and more food for the hump-back whales, porpoises and giant blue fin tuna and the yellow fin tuna and mahi on which the sword fish,sharks,and marlin depend in their migration. This benefits the ecology of the entire Atlantic coast.



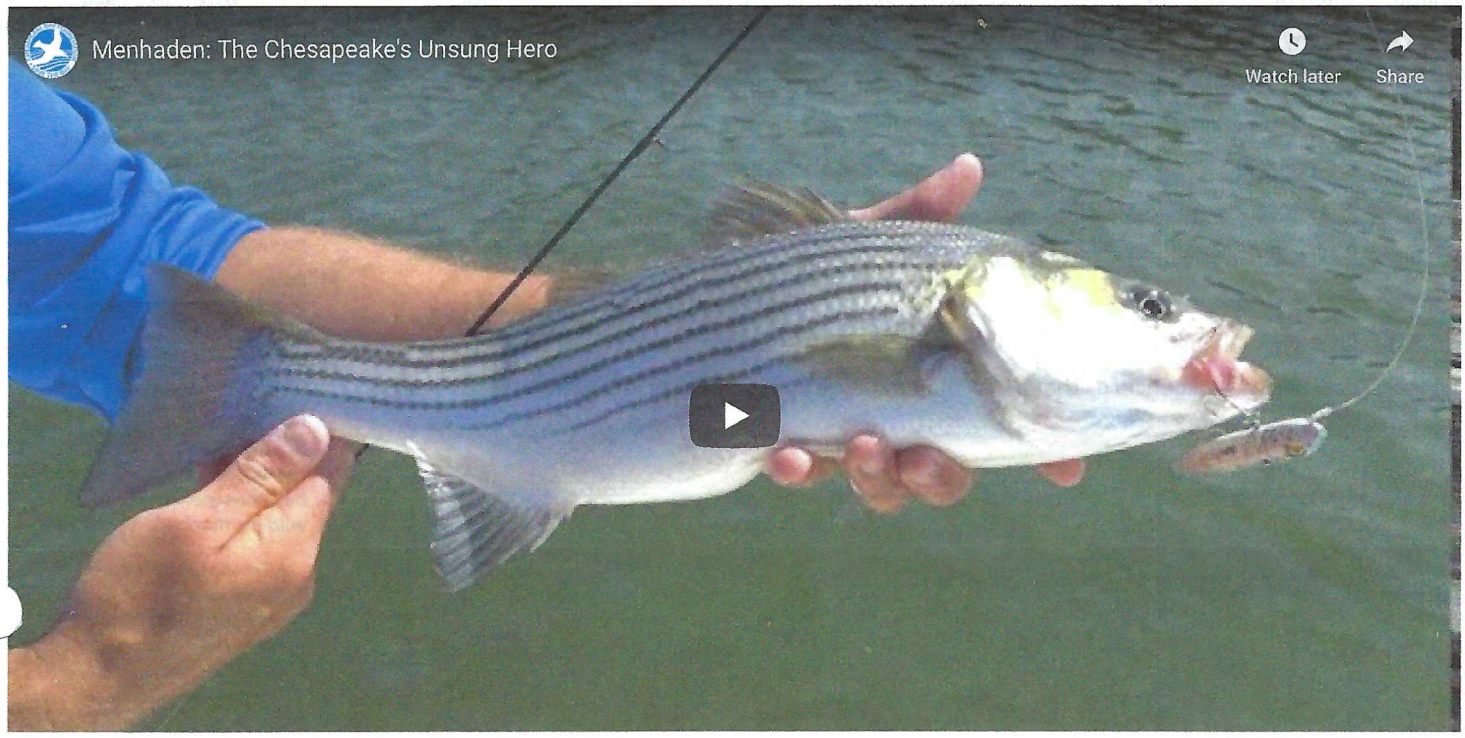
https://www.google.com/maps/@37.[illegible]9379,-74.5[illegible]

CONCEPT # 2.

01/11

1504

ATLANTIC MENHADEN



42 9/05

The Most Important Fish in the Bay

UPDATE: August 5, 2020—the Atlantic States Marine Fisheries Commission has taken the first step to formally consider the importance of menhaden to other predators, including striped bass, bluefish, and weakfish, in its management framework. This is the first time that ASMFC has committed to including Ecological Reference Points, the value of the species to the ecosystem, in its fishery management plans. *(Read CBF's press release)* (http://www.cbf.org/news-media/newsroom/2020/all/asmfc-adopts-groundbreaking-change-to-menhaden-fishery-management.html)

Atlantic menhaden, *Brevoortia tyrannus*, are small, nutrient-packed fish that are central to the Chesapeake Bay's food chain and support one of the largest commercial fisheries on the Atlantic coast. As a result of their environmental and economic importance, management of the menhaden fishery is a political flashpoint across the region.

Why are menhaden (also called bunker or pogy) important in the Chesapeake Bay?

Menhaden have been called the "most important fish in the sea." In the Bay, they create a vital connection between the bottom and top of the food chain. They eat tiny plants and animals, called plankton, by filtering them from the water. In turn, menhaden are a rich food source for many predator fish—including rockfish (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/rockfish/) (striped bass), bluefish, and weakfish—as well as ospreys (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/ospreys/), bald eagles, dolphins, and whales. (See our video, *Why Whales Follow Menhaden into the Bay (http://www.cbf.org/news-media/multimedia/video/why-whales-follow-menhaden-into-the-bay.html).*)

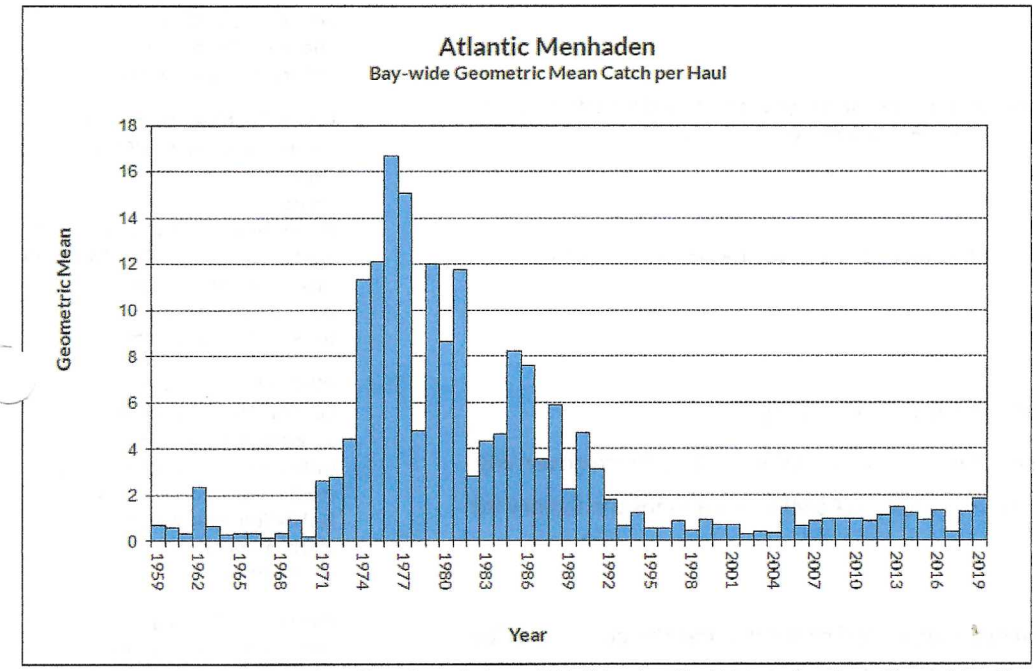
Rockfish, in particular, historically relied on menhaden for a large portion of their diet. Researchers have raised concerns that a lack of menhaden could make rockfish more vulnerable to disease.

Why should I care about menhaden?

If you enjoy feeling the tug of a big rockfish on the end of your line (and savoring the taste of it at dinner) or watching osprey snatch a silvery fish from the water, you have menhaden to thank! These small fish are the unsung heroes of the Chesapeake Bay, providing a rich food source for many of our favorite critters.

What are the threats facing menhaden?

The Bay is one of the most important nurseries for menhaden, helping to sustain the population along the Atlantic coast. Menhaden eggs hatch in the open ocean before drifting on currents into the Bay, where juvenile fish live and grow for their first year of life. But long-running scientific surveys show the number of young menhaden in the Chesapeake Bay dropped dramatically in the early 1990s and remains low.



This graph represents the average number of juvenile menhaden available ("abundance"), which has a direct impact for predators like striped bass and osprey. Unfortunately, the number of young menhaden produced in the Bay each year has been poor for the last 20 years.

DURELL, E.Q., AND WEEDON, C. 2019. STRIPED BASS SEINE SURVEY JUVENILE INDEX WEB PAGE. DNR.MARYLAND.GOV/FISHERIES/PAGES/JUVENILE-INDEX.ASPX. MARYLAND DEPARTMENT OF NATURAL RESOURCES, FISHERIES SERVICE

At the same time, almost three-quarters of all menhaden caught on the East Coast are harvested by the Omega Protein Corporation—a Canadian-owned company that fishes largely in or near the mouth of the Bay. Omega operates the sole remaining menhaden reduction facility on the U.S. East Coast in Reedville, Virginia. The plant reduces (cooks and grinds up) the fish for a variety of uses, such as nutritional supplements, food additives, and feed for livestock and fish farms.

Menhaden by the Numbers

70% The amount of an adult rockfish's diet historically filled by menhaden.

8% The amount of an adult rockfish's diet currently filled by menhaden.

of-menhaden-conservation.html)

Northern Green Frog (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/northern-green-frog-at-home-in-the-bog.html)

Ospreys (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/ospreys/)

Pelicans (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/moving-on-up-pelicans-are-at-home-on-the-bay.html)

River Otters (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/aquatic-ambassadors-river-otters-are-poster-pups-for-conservation.html)

Rockfish (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/rockfish/)

Sea Nettles (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/sea-nettles.html)

Smallmouth Bass (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/smallmouth-bass.html)

Sturgeon (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/sturgeon.html)

Terrapins (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/terrapins-swimming-for-shore.html)

Tundra Swans (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/tundra-swans-a-fading-winter-chorus-in-the-chesapeake.html)

Stay up to date about the Bay!

8%	*The rockfish population in the Chesapeake Bay is showing signs of malnourishment and increasing mortality.*
75%	The amount of an osprey nestling's diet filled by menhaden in the 1980s.
28%	The amount of an osprey nestling's diet filled by menhaden today. *Though the number of nests throughout the Bay region has improved, nestling mortality is as high as it was in the DDT era.*
65%	The annual removal of adult menhaden from East Coast waters.
2,500	The number of jobs supported by menhaden-dependent species in Virginia alone.
$236	In millions, the total amount fishing for menhaden-dependent species contributes to Virginia's economy.
8%	The current Atlantic menhaden population compared against historical levels.

Why is there a harvest cap for menhaden in the Bay?

Menhaden migrate along the Atlantic coast from Florida to Maine. An interstate governing body—the Atlantic States Marine Fisheries Commission (ASMFC)—manages the fishery for the 15 states that share the coastline.

Over the past two decades, **fishery managers have raised concerns that the concentration of fishing effort in Bay waters could disrupt the Bay's food chain**, harming populations of rockfish and other predator species. As a precaution, the ASMFC first set a cap for Omega's industrial menhaden harvest in the Bay in 2006. In 2017, the ASMFC voted to update the cap to reflect more recent menhaden harvest levels in the Bay.

In blatant disregard for the fishery management process, Omega knowingly exceeded the cap in 2019 (http://www.cbf.org/news-media/newsroom/2019/virginia/cbf-expresses-deep-concern-with-omega-proteins-announcement-it-will-violate-the-bay-menhaden-cap.html). The violation resulted in a unanimous ASMFC vote (http://www.cbf.org/news-media/newsroom/2019/virginia/fisheries-board-finds-virginia-out-of-compliance-with-menhaden-harvest-cap.html) referring Virginia to the U.S. Department of Commerce for noncompliance with interstate fishery rules. The Secretary of Commerce decided to uphold the ASMFC decision (http://www.cbf.org/news-media/newsroom/2019/virginia/us-commerce-department-takes-action-after-virginia-menhaden-limit-exceeded.html). The new harvest cap approved by the VMRC in April 2020 lowers the amount of menhaden that

SIGN UP (HTTP://WWW.US/STAY-UP-TO-DATE-ABOUT-THE-BAY.HTML)

In the News

08/05/20: ASMFC Adopts Groundbreaking Change to Menhaden Fishery Management (http://www.cbf.org/news-media/newsroom/2020/all/asmfc-adopts-groundbreaking-change-to-menhaden-fishery-management.html)

04/28/20: New Menhaden Limits Approved by VMRC, Preventing Fishery Shutdown (http://www.cbf.org/news-media/newsroom/2020/virginia/r-menhaden-limits-approved-by-vmrc-preventing-fishery-shutdown.html)

02/27/20: Menhaden Legislation Approved by Virginia House And Senate (http://www.cbf.org/news-media/newsroom/2020/virginia/n-legislation-approved-by-virginia-house-and-senate.html)

01/29/20: Menhaden Legislation Approved by Virginia House and Senate Committees (http://www.cbf.org/news-media/newsroom/2020/virginia/n-legislation-approved-by-virginia-house-and-senate-committees.html)

12/19/19: U.S. Commerce Department Takes Action after Virginia Menhaden Limit Exceeded (http://www.cbf.org/news-media/newsroom/2019/virginia/u-commerce-department-takes-action-after-virginia-menhaden-limit-exceeded.html)

11/21/19: CBF Statement on Gov. Northam's Call for Action on Menhaden (http://www.cbf.org/news-media/newsroom/2019/virginia/c

can be caught in the Chesapeake Bay to 51,000 metric tons per year. Due to Omega Protein's excess harvest during the 2019 fishing season, this year's level will be further lowered to 36,192 metric tons. The VMRC's action avoids a shutdown of the menhaden ishery due to noncompliance with the ASMFC.

statement-on-gov-northams-call-for-action-on-menhaden.html)

VIEW MORE (HTTPS://WWW MEDIA/NEWSR PRIMARY_ISSUI

How can better management protect menhaden and the Bay?

For more than 25 years (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/timeline-of-menhaden-conservation.html), CBF has worked with partners toward a healthy menhaden population in the Chesapeake Bay to ensure that this nutrient-packed fish can fulfill its key role in the food chain. In 2012, ASMFC's Benchmark Stock Assessment showed the total menhaden population was at its lowest level on record. Peer-reviewed population estimates showed menhaden have been overfished for 32 of the past 54 years. A strong fisheries management plan was needed to rebuild the population, and once rebuilt, to maintain it. (See *A Timeline of Menhaden Conservation* (http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/timeline-of-menhaden-conservation.html).)

For decades, management decisions and catch limits relied on "single species" stock assessments, independent of other species. In other words, **they accounted for demand from the fishing industry, but did not account for demand from rockfish, osprey, and other animals that rely on menhaden for food.** This did not necessarily mean there would be sufficient stock to sustain the larger ecosystem needs.

That changed in August 2020, when the ASMFC adopted benchmarks, known as ecological reference points (http://www.cbf.org/blogs/save-the-bay/2017/10/a-historic-opportunity-for-fish-and-fishermen.html), that will allow managers to **account for menhaden's role in the food chain** and set catch limits accordingly. CBF has been a strong proponent of this process and will continue to advocate for an ecosystem-based approach to menhaden management.

SAVE THE BAY

Founded in 1967, the Chesapeake Bay Foundation (CBF) is the largest independent conservation organization dedicated solely to saving the Bay.

The Center for Conservation Biology

William & Mary

20 August 2020

P.O. Box 8795
Williamsburg, VA
23187-8795

Phone
(757) 221-1645

Fax
(757) 221-1650

E-mail
info@ccbbirds.org

Dr. Bryan D. Watts
Director
(757) 221-2247

Dr. Mitchell A. Byrd
Director Emeritus
(757) 221-2236

www.ccbbirds.org

The Honorable Ralph Northam
Governor, State of Virginia
PO Box 1475
Richmond, VA 23218

Dear Governor Northam,

The menhaden is a keystone fish within the Chesapeake Bay ecosystem. Many of our most iconic species including the bald eagle, osprey, great blue heron and brown pelican depend on menhaden stocks to sustain their breeding populations within the Bay. Other species such as common loons and northern gannets that stage within the Chesapeake also depend on menhaden to fuel their migrations. Approximately 30% of the North Atlantic gannet population comes into the Bay during the spring to feed on menhaden before flying north to breeding grounds in Newfoundland.

Deep withdraws of menhaden stocks for the reduction fishery is having an impact on consumer species. We have conducted fieldwork with osprey throughout the lower Chesapeake Bay for 50 years and data demonstrate ongoing impacts. Through three generations of graduate students (1975-2006) we have observed shifts in diet and an associated reduction in productivity. Fish delivery rates were more than three times higher in 1975 compared to 2006. Menhaden, once the dominant fish in the diet now represents less than 30%. Shifts in diet away from menhaden have been coincident with a 90% reduction in menhaden stocks (Maryland, DNR haul surveys). No other fish species available to consumers provides the energy content of menhaden. Reductions in menhaden stocks have caused osprey productivity to decline to below DDT-era rates. These rates are insufficient to support the osprey population within the main stem of the Bay.

Menhaden provide critical ecosystem services within the Chesapeake Bay. We request that the needs of the broader ecosystem be considered when setting harvest policy and that menhaden stocks be maintained at levels that support a healthy Chesapeake Bay ecosystem.

Sincerely,

Bryan Watts

Bryan D. Watts, Ph.D.
Mitchell A. Byrd Professor of Conservation Biology
Director, Center for Conservation Biology
College of William and Mary

GRANDSON ALEX TAKEN ABOUT TEN YEARS AGO. MOST OF THE KIDS AND THEIR PARENTS HAVE LOST INTEREST .....FISHING JUST "ISN'T FUN ANYMORE"

Lets do the math. The bay's 400,000 fishing families aren't fishing much these days..the fishing has gotten worse and worse. Lets get the Chesapeake Bay the food their fish and wildlife need and deserve. Let's add more healthy fish to the equation. These families might get out on the bay a few more times a Summer and maybe have some great adventures. That could be another one million more precious days each year these parents and grandparents would have together enjoying the great sights and sounds Chesapeake bay has to offer. That is what is at stake here.