

Atlantic States Marine Fisheries Commission

Atlantic Menhaden Management Board

November 13, 2017; 1:00 – 5:00 p.m.
November 14, 2017; 8:00 a.m. – 5:00 p.m.
Linthicum Heights, Maryland

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.

November 13, 2017

1. Welcome/Call to Order (*R. Ballou*) 1:00 p.m.
2. Board Consent 1:00 p.m.
 - Approval of Agenda
 - Approval of Proceedings from August 2017
3. Public Comment 1:05 p.m.
4. Amendment 3 for Final Approval **Final Action** 1:15 p.m.
 - Review Management Options (*M. Ware*)
 - Public Comment Summary (*M. Ware*)
 - AP Committee Report (*J. Kaelin*)
 - LEC Committee Report (*M. Ware*)
 - Consider Final Approval of Amendment 3
5. Recess 5:00 p.m.

November 14, 2017

6. Amendment 3 for Final Approval Con't **Final Action** 8:00 a.m.
7. Lunch 12:00 p.m.
8. Set 2018 Atlantic Menhaden Specifications **Final Action** 1:00 p.m.
 - Review of Stock Projections (*J. McNamee*)
9. Elect Vice-Chair **Action** 4:25 p.m.
10. Other Business/Adjourn 4:30 p.m.

The Commission's Business Session will meet immediately following the conclusion of the Atlantic Menhaden Board meeting to consider final approval of Amendment 3.

The meeting will be held at the BWI Airport Marriot; 1743 W. Nursery Rd; Linthicum Heights, MD; 410.859.8300

MEETING OVERVIEW

Atlantic Menhaden Management Board Meeting

November 13, 2017; 1:00 – 5:00 p.m.

November 14, 2017; 8:00 a.m. – 5:00 p.m.

Linthicum Heights, Maryland

Chair: Robert Ballou (RI) Assumed Chairmanship: 05/16	Technical Committee Chair: Jason McNamee (RI)	Law Enforcement Committee Representative: Capt. Kersey (MD)
Vice Chair: Russ Allen (NJ)	Advisory Panel Chair: Jeff Kaelin (NJ)	Previous Board Meeting: August 2, 2017
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 August 2017

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

4. Draft Amendment 3 (November 13th from 1:00 p.m. – 5:00 p.m.; November 14th from 8:00 a.m. - 12:00 p.m.) Final Action

Background

- The Board initiated Draft Amendment 3 in May 2015 to consider the implementation of ecological reference points (ERPs) and revisit allocation methods.
- The Board approved Draft Amendment 3 for public comment in August 2017. Public hearings were held in ME, NH, MA, RI, CT, NY, NJ, DE, MD, PRFC, VA, NC, and FL.
- The Advisory Panel met in person on October 26th to provide recommendations regarding Draft Amendment 3 and 2018 fishery specifications.
- The Law Enforcement Committee met on Octobers 17th to review Draft Amendment 3

Presentations

- Overview of options, public comment summary, and LEC Report by M. Ware
- Advisory Panel Report by J. Kaelin

Board actions for consideration at this meeting

- Select management options and implementation dates
- Approve final document

There will be a lunch break from 12:00 – 1:00 p.m. on November 14th

5. 2018 Menhaden Specifications (November 14th from 1:00 – 4:25 p.m.) Final Action**Background**

- The Board sets an annual or multi-year TAC using the best available science.
- The TC completed projection runs for the 2018 year based on recommendations from the Board. **(Briefing Materials)**

Presentations

- Review of 2018 stock projections by J. McNamee

Board actions for consideration at this meeting

- Approve fishery specifications for 2018.

6. Elect Vice Chair (4:25 - 4:30 p.m.) Action**Background**

- Bob Ballou's chairmanship will end February 2018
- Given pending retirements, the vice-chair seat will be empty in 2018.

Board actions for consideration at this meeting

- Elect Vice Chair

7. Other Business/Adjourn

The Commission's Business Session will meet immediately following the conclusion of the Atlantic Menhaden Board meeting to consider final approval of Amendment 3.

Atlantic States Marine Fisheries Commission

Business Session

*November 14, 2017
Linthicum, Maryland*

Draft Agenda

The order in which these items will be taken is subject to change; other items may be added as necessary. This meeting will start immediately following Atlantic Menhaden Board Meeting on November 14, 2017.

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|---|-----------|
| 1. Welcome/Call to Order (<i>J. Gilmore</i>) | 4:30 p.m. |
| 2. Committee Consent | 4:30 p.m. |
| • Approval of Agenda | |
| 3. Public Comment | 4:35 p.m. |
| 4. Consider Final Approval of the Atlantic Menhaden Amendment Final Action | 4:45 p.m. |
| 5. Consider Final Approval of the Cobia Fishery Management Plan Final Action | 4:50 p.m. |
| 6. Other Business/Adjourn | 5:00 p.m. |

DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC MENHADEN MANAGEMENT BOARD

The Westin Alexandria
Alexandria, Virginia
August 2, 2017

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

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Adjournment..... 82

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1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of May 2017 by Consent** (Page 1).
3. **Main Motion: Move to maintain all options for Reference Points in Draft Amendment 3** (Page 38). Motion by Ritchie White; second by John McMurray.
4. **Motion to Substitute: Move to substitute to remove Options C and D from the Reference Point options** (Page 38). Motion by David Bush; second by John Clark. Motion failed (Page 40).
5. **Main Motion: Move to maintain all options for Reference Points in Draft Amendment 3.** Motion by Ritchie White; second by John McMurray. Motion carried (Page 40).
6. **Move to eliminate the 2 percent sub-option under the fixed minimum category from the Draft Amendment** (Page 42). Motion by Robert Boyles; second by Rachel Dean. Motion failed (Page 45).
7. **Move to replace the opt-out clause with an opt-in clause for all the fixed minimum options** (Page 47). Motion by David Borden; second by Pat Keliher. Motion failed (Page 48).
8. **Move to remove the three-fleet option** (Page 49). Motion by Robert Boyles; second by John Clark. Motion carried (Page 49).
9. **Move to remove the regional allocation option as a standalone option** (Page 49). Motion by Robert Boyles; second by John Clark. Motion carried (Page 50).
10. **Move to remove the Virginia reduction landing only options** (Page 51). Motion by Nichola Meserve; second by David Borden. Motion failed (Page 53).
11. **Move to remove the historical (1985-2005) reduction landings from states which no longer have a reduction fishery** (Page 53). Motion by John Clark; second by Rob O'Reilly. Motion carried (Page 54).
12. **Move to include New York's proposal to recalibrate the landings in Amendment 3 per the recommendations of the Plan Development Team** (Page 55). Motion by Jim Gilmore; second by Sen. Miner. Motion carried (Page 56).
13. **Move to simplify the dispositional allocation to two options (bait reduction): 30/70 and 25/75 split** (Page 57). Motion by David Borden; second by Roy Miller. Motion carried (Page 58).
14. **Move to remove the fleet capacity only options** (Page 58). Motion by Nichola Meserve; second by Ritchie White. Motion carried (Page 59).
15. **Main Motion: Move to eliminate Options B and C from the indecision clause** (Page 59). Motion by Cherie Patterson; second by Nichola Meserve. Motion substituted.

16. **Motion to substitute: Move to substitute, “to eliminate Options A, B, and C from the indecision clause”** (Page 61). Motion by Rachel Dean; second by Robert Boyles. Motion carried, becomes Main Motion (Page 63).
17. **Motion to amend: Move to also add an option to set the TAC at zero** (Page 63). Motion by Nichola Meserve; second by Ritchie White. Motion failed (Page 63).
18. **Motion to substitute: Move to substitute ‘to remove the indecision clause’ from the document** (Page 65). Motion by Dennis Abbott; second by Pat Keliher. Motion carried and becomes the main motion (Page 66).
19. **Main Motion as Substituted: Move to remove the indecision clause from the document.** Motion carried (Page 66).
20. **Move to include a statement that describes the TAC setting process with a provision that if the Board fails to reach a decision by the end of the calendar year, then the TAC will be set at the previous year’s TAC** (Page 67). Motion by Robert Boyles; second by Kyle Schick. Motion carried (Page 69).
20. **Move to eliminate Option D under Quota Transfer Section** (Page 70). Motion by Cherie Patterson; second by Michelle Duval. Motion carried (Page 70).
21. **Move to remove Option B, 100 percent quota rollover from the Quota Rollover options** (Page 70). Motion by David Borden; second by Roy Miller. Motion carried (Page 72).
22. **Move to Remove Option C from the Episodic Events Set Aside Section** (Page 72). Motion by Cheri Patterson; second by Emerson Hasbrouck. Motion failed (Page 72).
23. **Move to approve Draft Amendment 3 to the Menhaden FMP as modified for public comment** (Page 74). Motion by Robert Boyles; second by Dennis Abbott. Motion carried (Page 74).
24. **Main Motion: Move to postpone specification setting for the 2018 season until November 14** (Page 77). Motion by Dennis Abbott; second by James Estes.
25. **Motion to substitute: Move to substitute “to postpone specification setting for the 2018 season until the February meeting”** (Page 81). Motion by Eric Reid; second by Andrew Shiels. Motion failed (Page 81).
26. **Main Motion: Move to postpone specification settings for the 2018 season until November 14.** Motion by Dennis Abbott; second by James Estes. Motion carried (Page 82).
27. **Motion to adjourn** by Consent (Page 82).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Cheri Patterson, NH, proxy for D. Grout (AA)	Roy Miller, DE (GA)
G. Ritchie White, NH (GA)	Rachel Dean, MD (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Dave Blazer, MD (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Nichola Meserve, MA, proxy for D. Pierce (AA)	Allison Colden, MD, proxy for Del. Stein (LA)
Raymond Kane, MA (GA)	Cathy Davenport, VA (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Rob O'Reilly, VA, proxy for J. Bull (AA)
Robert Ballou, RI, proxy for J. Coit (AA), Chair	Michelle Duval, NC, proxy for B. Davis (AA)
David Borden, RI (GA)	David Bush, NC, proxy for Rep. Steinburg (LA)
Sen. Craig Miner, CT (LA)	W. Douglas Brady, NC (GA)
Mark Alexander, CT (AA)	Sen. Ronnie Cromer, SC (LA)
Colleen Giannini, CT, Administrative proxy	Malcolm Rhodes, SC (GA)
Jim Gilmore, NY (AA)	Robert Boyles, Jr., SC (AA)
Emerson Hasbrouck, NY (GA)	Patrick Geer, GA, proxy for Rep. Nimmer (LA)
John McMurray, NY, proxy for Sen. Boyle (LA)	Spud Woodward, GA (AA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Jim Estes, FL, proxy for J. McCawley (AA)
Tom Fote, NJ (GA)	Rep. Thad Altman, FL (LA)
Russ Allen, NJ, proxy for L. Herrighty (AA)	Martin Gary, PRFC
Loren Lustig, PA (GA)	Derek Orner, NMFS
Andy Shiels, PA, proxy for J. Arway (AA)	Sherry White, USFWS
John Clark, DE, proxy for D. Saveikis (AA)	

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

Ex-Officio Members

Jason McNamee, Technical Committee Chair

Staff

Bob Beal	Shanna Madsen
Toni Kerns	Megan Ware

Guests

Kelly Cates, NOAA	Jeff Kaelin, Lunds Fisheries	Robert Newberry, DelMarVa Fisheries Assn.
Benson Chiles, Chiles Consulting	Arnold Leo, E. Hampton, NY	Chris Moore, CBF
Zach Cockrum, NWF	Jennifer Goebel, NOAA, GARFO	Patrick Paquette, MSBA
Justin Davis, CT DEEP	Joseph Gordon, PEW	Lauren Pudvan, CBF
Jeff Deem, VMRC	Pete Himchak, Omega Protein	Jack Travelstead, CCA
Monty Deihl, Omega Protein	Mike Jarbeau, Save the Bay, RI	Kate Wilke, TNC
John Gans, TRCP	Aaron Kornbluth, PEW	
Jimmy Kellum, Kellum Maritime	Dan McKiernan, MA DMF	

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, August 2, 2017, and was called to order at 11:10 o'clock a.m. by Chairman Robert Ballou.

CALL TO ORDER

CHAIRMAN ROBERT BALLOU: I am going to call this meeting of the Menhaden Management Board to order. My name is Bob Ballou; I have the honor of serving as Board Chair. We have a full agenda today, and a decent amount of time to get through it; so with no further ado, let's get rolling.

APPROVAL OF AGENDA

CHAIRMAN BALLOU: The first item on the agenda is the agenda itself. Does anyone on the Board have any recommended modifications to the agenda? Eric Reid.

MR. ERIC REID: I would like to move Item 9, the episodic event report to earlier in the agenda; whether you incorporate it into Item 7 or something else, I would appreciate that. I will leave it up to you.

CHAIRMAN BALLOU: Thank you. I would suggest that it might work well just prior to Item 7; so we would take it up after Item 6 and before Item 7 as the agenda is currently structured. That is the proposal. Does anyone have any objection to moving that agenda item in the way that I just indicated? Seeing none; we'll do that. Does anyone have any other suggested changes; yes, Dr. Rhodes.

DR. MALCOLM RHODES: I don't know if we'll need it, but since we're starting this meeting 25 minutes early. Do we need to have just possibly prior to our recess another time for public comment, in case people are coming for 11:30; or at least put a marker there in case we need that, so we don't disadvantage their ability to speak.

CHAIRMAN BALLOU: I think that's an excellent suggestion, and I will do that. I will circle back to public comment after we undertake, I think the next agenda item after public comment and before lunch. That will be my plan. Thank you, good suggestion. Other suggested changes?

Seeing none; any objection to approving the agenda as modified? Seeing none; the agenda as modified stands approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN BALLOU: And we're on to the next item which is the approval of the proceedings from the Board's last meeting held on May 9, 2017.

Are there any recommended changes to those minutes? Seeing none; is there any objection to approving the minutes as proposed? Seeing none; the minutes stand approved by consent.

Item 3 is Public Comment. We don't have anyone signed up right now. Is there anyone from the public who would like to comment on any issue that is not on the agenda? Seeing no hands, we'll move on; but we will come back to that opportunity after we undertake our next agenda item; which is the 2017 Stock Assessment Update.

REVIEW OF 2017 ATLANTIC MENHADEN STOCK ASSESSMENT UPDATE

CHAIRMAN BALLOU: The recently completed stock assessment update for menhaden, in essence is an update to the 2015 benchmark assessment, incorporating the most recent three years of data; that would be 2014 through 2016. Before I turn to Jason McNamee, the Board's TC Chair for his presentation, I want to note for those members of the public who may be in the room or listening in that there are two documents in the Board's meeting materials pertaining to the update.

One is the very detailed and very well done 180 page report, put together by the Commission's Menhaden Stock Assessment Committee; chaired by Dr. Amy Schueller. The other, which is in the supplemental meeting materials, is a very well written and readily digestible six-page summary; which I believe Tina Berger had a hand in authoring. On behalf of the Board, I want to thank everyone who worked so hard and so effectively to develop both documents. With that and the recognition that we have about 45 minutes slated for this agenda item in its entirety, Jason the floor is yours.

MR. JASON McNAMEE: Good morning everyone. I've got about 40 slides here; so I'll try to go relatively quickly through this, but not so quickly that you can't see what's going on. Just a quick overview, I'm going to go through the data that we used for the assessment. I am then going to get into the stock assessment itself.

I'll talk to you a little bit about sensitivity runs that we did and the retrospective information, all of that model diagnostic kind of stuff. There are some changes that occurred in the output. The model is performing well, the diagnostics are decent, but the information has changed a little bit. I'm going to dig into that a little bit or a lot actually, to give you some good detail; and hopefully it makes you understand why that occurred.

The same thing with the reference points, I've got a number of slides on that to really detail, and hopefully clarify what's going on there for you. Data, we have life-history data in the model. The maturity data for menhaden is historical data from some research that was done. We modified our interpretation of that data during the benchmark; and we are continuing to use that interpretation.

We have a natural mortality vector in there, it is age varying but time constant; so it's one vector that is the same year to year, but different by

age. That information is scaled to the estimates from some tagging data that was done on menhaden. Growth is estimated from fishery dependent data, and all of this is consistent with what was used in the benchmark assessment.

I am going to talk about, just to make sure everyone's clear, a benchmark that was the peer reviewed benchmark assessment that was completed in 2015. Then the new assessment information is updated; so benchmark and update just to make sure you're clear on that. Because I use those two terms a lot during the presentation. First plot, this is reduction landings. What you see on this plot is the northern reduction landings are in blue. The reduction landings from the south are in; I'm going to call it orange.

I don't know what it looks like up there, yes it's orange-ish. One thing that's important here is we have now a spatially structured model; it's structured by way of fleets, and the line that divides north and south is set on the eastern shore of Virginia. That's why their northern reduction landings indicate on here, even though they're low, there is some fishing that takes place out on the ocean side of Virginia. But you can see generally a downward trend in the southern reduction landings, and a large drop off early on in the dataset with the northern reduction landings. Bait landings, so just to orient you to these plots, again on the Y-axis is landings in metric tons.

Along the bottom in both cases is year. The orange line is the information from the update assessment; so that's the very newest information. Then you'll see a little green that kind of pokes out there. What that is, is the information that we had put into the benchmark assessment. Just to start off. We, the Stock Assessment Committee, decided to use the updated landings.

The orange line in total is what we used in the assessment. The reasons for these differences, and remember the scale here. If you think back to that previous plot, the scale on these Y-axes is an order of magnitude different. These differences are small, and they are in the beginning of the dataset there.

The reason they occurred is we found a couple of errors. There was some double counting during the benchmark; specifically in Florida and Maine reduction landings during that early time period. We corrected those. Then we all went back and reviewed the bait landings throughout the entire dataset; and found a couple of errors, nothing major though.

These aren't big changes, and we tested the model's sensitivity to these differences as well. Recreational landings, so this is based off of MRIP. Again, same structure here as you saw in the last slide; and again the Y-axes is yet another order of magnitude different. These are a very small component of the overall removals.

But these differences, and again we decided to use the updated orange line for the update assessment. These differences are due to changes in the MRIP; the auditing and things like that that goes on each year for MRIP. That's where those differences came from. Fishery independent, so the datasets reviewed and used during the benchmark were used to create standardized indices; and so we followed that same procedure for the update.

The reason for doing the standardization is it accounts for catchability differences, due to factors such as time of year, temperature, or other environmental covariates. It kind of removes those effects from the information. That is the idea behind that. This treatment is consistent with that used for the benchmark, and we had a little subcommittee that we developed, the FIG; the Fishery Independent

Working Group, and we had that same structure here.

Everything is really consistent with the benchmark approach. We have three indices of relative abundance that go into the model. There is a young-of-the-year index. That represents not shockingly, young-of-the-year fish. There is a Northern Adult Index, and you'll see that referred to as the NAD from here on out.

That is age two and older, so that is our broadest set of ages that are represented in the fishery independent information. Then there is the Southern Adult Index. That is predominantly Age 1, with a few Age 2s in it. But that is a much smaller range of ages in the SAD index. Here is a plot of that information. The index values on the Y-axis, year across the bottom. I'm hoping that we were consistent with the color scheme, no; it looks like we've flipped it in this case. Sorry about that. The blue is the update assessment information for the Southern Adult Index, and the orange is from the benchmark. Basically what I would suggest to you here is they are pretty close, considering this is a modeling approach that we used these two datasets with the benchmark information, then the three additional years of information are producing the same historical information, so that's good news.

Then the Northern Adult Index, same color scheme. Orange is from the benchmark, blue is the update. Again, the models fit really well. That really big peak changed with the most recent information. But I will focus you in on, I forgot, so I'm going to pop back up one slide. The Southern Adult Index consists of the SEAMAP Trawl Survey and the Georgia Trawl Survey.

That's what's in that index, so it is a combination of two different surveys. Then back down to the Northern Adult Index. These are all trawl surveys. It's the VIMS ChesMMAP,

ChesFINS, New Jersey, Connecticut, Delaware 16 and Delaware 30-foot Trawl. Again, a bunch of trawl survey information represented in this index.

Back to the point I was just about to make. If you look at the most recent three years, so the blue line where the orange line doesn't overlap with it, keep those in the back of your head. They will become important later on in the presentation. But you can see in the most recent period of time the Northern Adult Index is increasing in magnitude.

Then here is the young-of-the-year index. There are 16 different surveys, they are of different flavors. They are seine surveys, there is I think the electro-fishing surveys; all kinds of stuff in here. I am not going to itemize them out for you. But again, you can see that the information from the benchmark to the update assessment is all pretty similar.

Again you see a little uptick in that young-of-the-year information in the most recent years. Reduction catch at age, the number of collections, number of fish aged were all updated. The bait catch at age number of collections and number of fish aged were also updated. Then the length composition for the southern adult and northern adult indices was updated.

There was some updating that occurred there just like I was talking about, like with the MRIP data. As we went back and reviewed, we made some adjustments to that data; corrected errors more or less. But none of them were large, and as I just showed you, they didn't have a big impact on the information that was produced.

Okay, now onto the stock assessment itself. The start year is 1955, the terminal year is 2016. We have six ages in the model. That last age group is a plus group; meaning it contains all of the animals six and older. The Day 1 for each

year in the model is March 1st. This is a Fleet-as-Areas model.

I talked a little bit about there is a north and a south in this model. That becomes important in the model structure when we talk about things like selectivity, and how we split out the landings data and things like that. But it's not a spatial model in that these are being assessed as discreet spatial units.

But there is some spatial structure in the model developed as the jargon for it is fleets. There are four fisheries with landings and age compositions. The north and the south bait and reduction, if you add those up it equals four. There is one young-of-the-year index, two adult indices, and two sets of length composition sources of data that go into the model. Again the data were split into northern/southern regions. The reason why we did this and the justification for it is the migration of these fish throughout the year. It becomes important by way of selectivity with the older, larger fish moving further to the north. Fishery dynamics as well are important, and the tagging data, all of this stuff supported our use of these two areas in the model.

Again, the reason we did this is it better accounts for population dynamics and fishery removals over time. We used the stock assessment run that was recommended by the SEDAR Review Panel. If you think back a couple years ago, what this is, it's basically the base run that the Stock Assessment Working Group suggested.

All of the model parameterization is exactly the same as, between the Peer Review recommendation and the Stock Assessment Committee recommendation for the base run, the one difference is the reviewers recommended we down weight some of the length composition information. That's the run that we used.

It has this down-weighted-length composition information in it. What this does within the model is it allows the length information to inform selectivity. We need it to inform selectivity. That is how it functions in the model. But it is not influencing the other model outputs. I think there was some confusion on which run we were using, and so I just wanted to clarify that.

In the benchmark report this is in the addendum of the benchmark report; for folks who are really interested and want to get into the details of that. Here is some output information. This first one is recruitment. The Y-axis here is in billions of fish. Year across the bottom, you can see there was some really high recruitment or a really high recruitment event early on in the time series.

Then again in the middle of the time series there, kind of peaking in the early eighties, and it's declined going into the 2000s, with some more recent, I'll call them notable recruitment events. I think one of them is in 2010; and then the most recent year indicates a decent recruitment event.

Biomass, Y-axis is in thousands of metric tons. It sounds like, who's that Carl Sagan, millions and millions of – so that's thousands of metric tons. This is the biomass vector through time, so year is across the bottom. You can see there was high biomass early on in the time series. Then it peaks up again in the eighties, just like the recruitment did.

Then biomass expands again in the most recent period of time, and a lot of that is due to the age structure expanding in the population. That's a good sign. Here is another look at that same type of information. This is the numbers of fish, so this is billions of fish on the Y-axis, year across the bottom; similar trend to the last two datasets that we looked at.

You can see in the most recent period of time the numbers aren't as impressive as the biomass appeared to be, and again that is because a lot of that increase in biomass is coming from older, bigger fish being in the population. It is hard to see that the orange on this plot is the young-of-the-year; and hopefully you can read that scale on there. As the colors go from the bottom of the chart to the top the fish are getting older. The signal gets swamped by how many young of the year there are. But you can see the signal in the biomass that age structure is expanding. Okay here is fecundity. This is in billions of eggs. That is the Y-axis year along the bottom. The reason we have fecundity up here is this is our metric of stock productivity. This is what our reference point is based on. That's why we wanted to show you this one independently. Again, similar trend to what we've been talking about with decent signal in the most recent period of time; although the fecundity seems to be going down.

This metric is based on some research that was done on fecundity and size of fish, and so that's how this is a calculation that's done by the stock assessment; where you take the age and length structure of the population and then multiply that by a relationship to fecundity. We weren't out there counting eggs in the water or something like that.

Okay, fishing mortality rate. That is the Y-axis year along the bottom. You can see that fishing mortality was really high in the early time series; and then has dropped down significantly. I'll focus you in on, if you look to about the mid-nineties you can see that from the mid-nineties to current there has been a downward trend in that fishing mortality information, bouncing around at a low value in the most recent period of time.

I'm going to walk through now some sensitivity runs. Here the sensitivities that we're looking at are we did a fixed Q for the Northern Adult Index. The reason why we did that is, and I'm

going to talk about this in more detail, but I'll kick the conversation off here. One of the things that happened in the update assessment is, if you think back when I showed you the Northern Adult Index, the most recent period of time had these pretty high spikes in information.

What that did to the stock assessment is it leveraged a lot of the population dynamic information. It leveraged it, depending on which metric it went up or down. The reason why that happened is there is this quantity called Q in the model. That is the catchability. What that does is it scales, in this case the fishery independent information, up to the full population size. That Q changed from the benchmark to the update. That is an important thing to keep in mind; and again I'll talk about that in more detail in subsequent slides.

One of the sensitivities we wanted to test was, well what happens if we fix that Q to what was in the benchmark? We also, because of this leveraging that the Northern Adult Index had on the assessment, we dropped it and looked at what that did to the assessment information. We tested some sensitivity to natural mortality.

We did an upper and lower bound, kind of picked the high and the low and ran them at those different levels. Then we did another catchability sensitivity for the young of the year; another Q sensitivity for the young-of-the-year index. We did an additional set of sensitivities. This was based on our initial vetting of this information with the Technical Committee.

We did a sensitivity with the benchmark bait landings; so we didn't use those updated numbers. I had mentioned that already. Then we tested a couple of different fixed Q values from different time periods for that northern adult index. I'm not going to show you all of those sensitivities; because I'm probably going to run long anyways. Just know that the

information that I'm showing you is indicative of all of these different sensitivity runs.

For instance, the bait landing sensitivity has shown no influence on the model; they were virtually the same as the base run. Here is the first set of sensitivity information. The plot on the left is the geometric mean F values. I think it's for Ages 2 through 4. On the right hand plot is recruits in billions of fish again. What you can see here is I'm guessing it's hard to read. It is hard to read on my screen too. It is probably really bad up there. But you'll have to trust me when I say that the one that really influenced the information and moved it away from the baseline is that green line; and that is where we dropped the Northern Adult Index from the assessment altogether.

The point of that is that's a really important index in the stock assessment. It's providing a lot of information for the assessment. It's why the most recent three years of information had such a strong influence on the model output. Recruitment, again the big one there is the blue line kind of shifts everything way up.

That one, not shockingly for recruitment, that was the high natural mortality. If you dump in a bunch of additional mortality into the stock assessment, it tries to fill the gap by making a bunch of new fish. That was not a surprising finding for us. But in general the other sensitivities that we did didn't have a large influence on the model.

Here is the next sensitivity. We have biomass on the left and fecundity on the right. Again, that high natural mortality run was the most influential in these sensitivity runs; again, not a surprising finding. But then the green line on the left and the right, those were a bit more of something to note.

Again that is the dropping that Northern Adult Index altogether. You can see for the fecundity it is really influential on what that does to the

model. That Northern Adult Index is an important source of information for the model. The next set is the Northern Adult Index on the left, the Southern Adult Index on the right.

Sensitivities were not particularly influential on the model output; with the exception again of the no Northern Adult Index. That one obviously does not exist in the left hand plot, but it does on the right; and you can see in the early time series it decreases the fit to the Southern Adult Index if the Northern Adult Index is not in the model.

Here is the fit to the young of the year, and then the big influential sensitivity here was the one Q for the young-of-the-year index. We have that split out into two time periods. I won't get into the details of why. You can ask me a question after if you're really interested in that. But just note that we have two time periods where we allow it to define different catchabilities; and if we get rid of those two time periods it decreases the fit of the model to that dataset.

That was the most influential sensitivity for the young-of-the-year fit. These are now sensitivities for some of your reference point information. On the left is the threshold, and on the right is the target. The dotted line, so what these are showing is not the actual value; but showing the proportion of current F to those different reference points.

If they were exactly equal to each other, if you were right at the threshold or right at the target it would be one. That's what that dotted line represents. In the case of fishing mortality, which is what this first set of plots represents. You want to be below that dotted line. Hopefully that makes sense. We've got here the sensitivity runs. Here you can see the most influential information on how this information performs relative to the reference points is if the natural mortality is low, I think about that logically what the model has to do is then

increase fishing mortality to make up the gap for what all of the rest of the information is telling it. That is the top. That light blue line, which you can kind of make out up there. Then the other two are again the no Northern Adult Index and the high natural mortality has the opposite effect.

If there is a lot of natural mortality out there it deflates the fishing mortality. Same, they're both relatively similar from left to right. Those are the most influential assumptions and pieces of information that we're using in the model. Here is our fecundity metric. Same setup here, this is a ratio; threshold on the left, target on the right.

Here you want to be above that dashed line. Again, if you drop the Northern Adult Index out it has a pretty significant impact on the assessment information. Natural mortality was the other important piece of information that the model has some sensitivity to. A little bit of information on the retrospective.

There is a retrospective pattern in the assessment with regard to what you're looking at on the screen here. We have geometric mean F on the left and recruitment on the right. Here the retrospective is not bad. They're pretty similar. There is some separation at certain points in the dataset, but they all then reconvene towards the beginning of the dataset there.

That's good that it can kind of find that beginning again; but in general the Stock Assessment Committee didn't find this or the Technical Committee didn't find this retrospective to be overly alarming, and isn't much different from what we had during the benchmark. Here is again this is that fishing mortality ratio, you want to be below the, in this case solid black line.

We ran Monte Carlo bootstraps on this information; to get a sense of the uncertainty

around our reference points in the model information with regard to those reference points. That is what the grey area represents on this plot; that's the uncertainty bounds. I will note that the Stock Assessment Review Committee, one of the notes that they made is we have lumped a little too much uncertainty into our bootstrapping routine.

That is something we'll have to dig into for the next benchmark. You can see the uncertainty, in particular in certain years is pretty high. But in general this is kind of an aggregate plot, where you're looking at the uncertainty and the reference point and the retrospective all in one plot. This is the threshold, here is the target; same sort of information.

I guess the important thing here is both the retrospective and the uncertainty are all under the threshold reference point in this case. That's good. Here for the target you can see some of the retrospective runs; and a little bit of the uncertainty does jump up over the target in this case. That gives you, I don't know, a good concept of the risk you're dealing with for menhaden.

Here is retrospective information with regard to biomass and fecundity. Here there was a bit more of a significant retrospective, in particular in the fecundity and it has to do with how far back. It gets worse; and they kind of cluster around each other. We don't have a good explanation for that.

My recollection is this retrospective is not necessarily different from what we saw during the benchmark assessment. Again, a plot of retrospective, uncertainty and reference point, and so here we're looking at the threshold again. You can see all of the retrospective runs and most of the uncertainty is up above the threshold; with regard to fecundity. Here is the target, and the information is kind of straddling the target here, so you're right around the

target with regard to the center of the uncertainty and retrospective runs as well.

Getting close to the home stretch here, so all of the strategies, data, assumptions, they were all the same between the benchmark and the update. There is a scale and trend difference that has occurred between the benchmark and the update. I started talking to you a little bit about that already. We isolated the cause of this scale and trend change to the Northern Adult Index; and really it's those last three years that we added in just have a lot of influence on the model.

We talked about that a lot at the Technical Committee. What we decided in the end is, and we talked about the different options that we had available to us, and tested those sensitivities. That is why we chose those sensitivity runs. But in the end we recommended allowing the scale to be estimated by the model; and then to calculate the reference points using the same methods from the benchmark.

I'm going to detail what I mean there momentarily. I just wanted to note. Part of the discussion that we had is the merits of the Northern Adult Index. They are high. I showed you that. It's really influential on the model. But it also has a lot of information in it. There are a lot of age classes represented, and the signals even though we're taking surveys from different areas, the signals are all pretty similar to each other.

We think that information is good and therefore we give the Northern Adult Index high merit; and that is why we didn't mess around with it too much in the model. Here are now a set of slides with the changes from the benchmark to the update. What you're looking at up on the slide is the mean fishing mortality. This is the geometric mean for Ages 2 to 4.

It's what I've been showing you all along in the various plots. On the left is the update assessment; on the right is the benchmark. What you can see is we've got the target and the threshold represented on there. The threshold is the blue line up at the top; the target is the orange line at the bottom.

You can see as you look from left to right those lines aren't lining up; and the reason for that is the reference points that the Board selected are an SPR approach. What that means is what we did, I'm going to make sure I don't jumble this up and make you even more confused. We're using a historical period of time.

I believe it's – I've got a slide on this – but it's 1960 through 2012, I believe. That period of time is locked in. That does not change. I've talked to you already about the fact that the update assessment changed the values of fishing mortality through the time period. You can see that in these plots.

If you look at the Y-axis on the left, it goes up to 7. On the right it only goes up to 5. Fishing mortality increased in the early time period in the update, and basically throughout, because the population size changed. If you take that locked in historical period of time, and calculate your reference point based on that; and the information within that window of time changed, your reference points changed. That's what happened with the reference point information. The model is fine. Nothing philosophically changed within the model. It's just that the information of the population changed in the most recent update. I'll kind of spoil the surprise and note, and you can see it in this slide. The information that you're getting for management advice hasn't changed.

It's still not overfished. Overfishing is not occurring. I just ruined the next couple slides for you, sorry. But the point is that even though the numbers that are on the graphs changed, what you have by way of advice has not

changed much at all. Again, now this is your fecundity reference point metric.

I won't talk about everything I just talked about again. But you can see here not only does the magnitude change for the fecundity metric, but also it kind of torque the trend a little bit. It's still similar in the most recent period of time in that you have an increasing period and then by way of the reference points you're in exactly the same spot; you're below the target but above the threshold.

Again, your advice is the same. The information changed a little bit, but in general the advice you are getting for management is the same. The 2015 benchmark reference points, they were calculated as F-57 percent, F-38 percent. That goes target and then threshold, and then the fecundity were the fecundity values that match those.

Then the update, those changed again for the reasons I told you. When you have that locked in period of time and you look at the information in that historical window, and the information changes in that window; it changes the values that you're using. But the philosophy that you used remains the same.

When you're looking at the update reference points, now you're talking about an F-36 and F-21 for your target and threshold. The reference points for the update were calculated using the exact same methods from the 2015 benchmark. Nothing has changed here other than the information used to calculate those reference points.

I'm again going to hit this again; because I know it was something that was of concern to people coming into this meeting. Why the difference? The reference points are calculated through a spawner recruit analysis; using mean values of time-varying components, so the growth and the maturity we use mean values of those for the entire time period.

The overfishing definition is based on the historical performance calculated as maximum and a median geometric mean F for Ages 2 to 4 during the period of 1960 through 2012. The reason that we picked those is that's a period of time where we believe the stock to be in a sustainable state. Again, that is the reason why the reference points have changed. I talked about the time period. But just to add into that the other thing you're doing is using a maximum.

If the information changed the maximum is also going to change, as will the median; because the information is different within that window of time. Because the update resulted in higher F values throughout the time series, that max and that median were estimated higher, compared to the 2015 benchmark. But based on the current reference points the stock status is the same as we brought to you during the benchmark; not overfished and overfishing is not occurring. Additionally the stock is below the F target, but it is also below the fecundity target in this case. I'm not going to spend too much time on this part. This is a phase plot. The dotted lines here again, represent that ratio of your reference point to the current state of the stock. On the Y-axis is the fecundity, fishing mortality along the X-axis. The dotted lines represent your one-to-one ratio, meaning you would be right at the threshold or the target; it will be the same on the next two slides.

But you can see this is just another look at the uncertainty in the estimate. Here the good zone that you want to be in is this upper left quadrant of the plot; and you can see the red dot in the middle of that banana shape there. That is the actual estimate. Then all of the black dots are the Monte Carlo bootstrap runs that we ran. You can see the vast majority of the bootstrap runs are in the good zone of this chart.

Then with regard to the target, you can see in this case we're not in that upper right-hand quadrant; and that is because we are below the fecundity target, just below it. But we are below the fishing mortality target. This is the target so that's not a terrible zone to be in there. Again, the majority of the information falls in that some of it actually goes up into that upper left-hand quadrant; but the majority of it is in that bottom left-hand quadrant.

Just a table, and one more slide after this; we're almost there. A table of the reference points again. You've got F-21 percent MSP is your threshold. That is set at 1.85. Your target is set at 0.80, and your current is 0.51; so you're below both of those with regard to fishing mortality. Then fecundity you can read those numbers up there.

But you can see you're between both the threshold and the target with regard to fecundity. You can see the magnitude. I can flip back to this table at the end if you would like. Summary slide, the model continues to perform well; very similar to the benchmark. There was a change in scale and trend that occurred with the additional information that we added in.

The main driver of that is that Northern Adult Survey that goes into the model. The assessment is still deemed useful for management advice by the Technical Committee, Stock Assessment Committee, and based on the current reference point, stock status is not overfished and overfishing is not occurring. That is it for me, Mr. Chair.

CHAIRMAN BALLOU: Another excellent presentation. There is no need for any action on this. There is no need for a motion. It's not an action item. But we are certainly open to questions and comments. Would anyone like to ask a question or make a comment? Yes, Loren.

MR. LOREN W. LUSTIG: Thank you for that excellent report, sir. I have a significant interest in historical perspective for this species. I took note in your second or third slide that there was data regarding the population numbers from around 1980 to current times, or soon to be current times if we were to extrapolate that. Giving us about 35 years of data forward from 1980, my question relates to what about the data going back approximately the same number of years?

For example, back to 1940s. I would like to see those numbers if they were available. I did notice in 1980 there was a major spike in numbers; unfortunately short lived. Is it your impression that that spike would not occur again, given our current management? Did such spikes occur more frequently in those previous or earlier years, 1940 to 1980?

MR. McNAMEE: I'll take a shot at that. I'll need a little clarification on part of it. I will start here. We do have information going back, I think before the '40s for menhaden. I think you can find some of that more historical information in the benchmark report. Again, this is an update so we didn't add in a lot of that background stuff; trying to make it a little more slim then. I think the benchmark was probably double the size of this update assessment.

That information does exist. We made a decision during that benchmark to only use the period of time that we have in there. The time period that we actually are using in the model starts in 1955; so we're not too far beyond the 1940 period you were talking about. I guess so that is where my confusion then exists.

You're talking about spikes. You said numbers, so we do have numbers going back all the way to 1955 produced by the model. I'm not clear if maybe you couldn't see the scale along the bottom well and you've got the wrong reference period, or if you were specifically looking at that period of the 1980s. Then I'll

better be able to at least try to answer your final question.

MR. LUSTIG: Yes, thank you for that explanation. I am concerned about the population numbers; and wondering if they were significantly higher before 1980 on a continuous basis. If that was the case, is it possible for us to recover numbers to approximately those levels for years coming ahead?

MR. McNAMEE: The way that I would answer your question is to say, per the reference points that we've put in, which are supposed to be protective of the population; and allow for full rebuilding, and the fact that we're below the threshold or above it, depending on which metric you're talking about.

I guess maybe I'll boil it down to say stock status is good. I would suggest that if the conditions were to present themselves, yes it could rebuild to those levels again. Menhaden, as we all know, are subject to a lot of additional things that influence the population like environment, predators, and things like that. Those also control the population, and so to answer your question.

If things were to line up across all of those different metrics you could rebuild this stock to its maximum level for the metrics that we can control as fisheries managers. We've got the population in the spot where we suggested we wanted it. That's why we set those reference points where we did. Stock status is good. I would suggest that the conditions on the other side were they to line up, it could rebuild to those numbers that we saw in the eighties.

CHAIRMAN BALLOU: Are you good, Loren?

MR. LUSTIG: Yes. I'm pretty good. I would like it. You know you spoke about full restored. I don't have any question in my mind that fully restored would be an excellent position to be

at, for a whole variety of reasons. I'm hoping that at some point we will be dealing with much larger population numbers.

CHAIRMAN BALLOU: Other questions or comments? Yes, John.

MR. JOHN McMURRAY: Jay, you noted and made reference to a number of times the Northern Index and how it's increasing in magnitude. I'm wondering if the TC has had a discussion on why that's happening; is it stock expansion, is it climate change, is it a change in age composition, or is it something else?

MR. McNAMEE: I think I understood your question. I'll kind of come at it at two angles. Logistically in the model it has a lot of information in it. It is one of the sources of information that we have independent from the fishery; where we are getting information on older ages of fish, and we haven't had that prior to the benchmark.

That is why I think it is having a lot of influence on the model. I think maybe another angle at your question is why are the northern indices going up? I think you mentioned a couple of potential hypotheses. But in general, what we can see from the stock assessment output is the population is increasing and expanding its age composition.

What we know about menhaden based on historical tagging data in a lot of the research that was done on this species is the older, bigger, fish migrate further north. As the age structure and the population size expand, it is part and parcel that those northern adult indices would also go up.

CHAIRMAN BALLOU: Yes, John Clark.

MR. JOHN CLARK: Thanks for the great presentation, Jay. That was a heck of lot of data you had there. I was just confused. Early on in the presentation you talked about catchability

changing from the benchmark to the update. Could you just explain that a little more?

MR. McNAMEE: I will try my best, John. What the model does is it takes your fishery independent information; which if you think about your trawl survey information for any species they are low numbers. We don't do millions of tows a year; it's a small number of tows. You get numbers on the order of, for some species it's below one. But you know, 1, 2, 3 – that kind of thing for the year.

What the assessment does is it then takes that information and scales it; to what it believes is the size of the population. That's what that Q parameter is, it's a scalar. Well, it works in both directions so it brings the population size on the same scale as your fishery independent information and vice versa. That's what that Q that catchability parameter does in the model.

What happened, and so mathematically we don't know, we've sort of isolated the cause of the Q to the Northern Adult Index. Exactly why the model decided to do that to try and find its overall lowest likelihood, we don't know; only the computer knows. The gist of it is those numbers went up; and when the model refit that dataset, and then tried to rescale it, it changed that Q parameter from the benchmark to the current assessment.

CHAIRMAN BALLOU: John to follow up.

MR. CLARK: I think I understand. You're just saying it's more just an artifact of the model. It is an abstract. There is nothing going on out in the system that you can say would change catchability.

MR. McNAMEE: Correct. This is a statistical estimation that is done within the model; to try and minimize all of that information altogether. It's one of the, I don't know hundreds of dials that the model is in there trying to tune. Yes, it is nothing that we can ascribe some biological

causation to. Some of the parameters we can. That's not one of them.

CHAIRMAN BALLOU: Rob O'Reilly.

MR. ROB O'REILLY: I read in the report that the fishery dependent indices were correlated with the fishery independent indices; and I guess in the benchmark the idea was to get some state specific, I'll say validation. I also remember, at least second hand that there was quite a hunt before the benchmark to improve on the fishery dependent indices; and it was a big task. Now I see that at least this update they weren't really taken into account. Is that something that will come back for the next benchmark; or how does that work out?

MR. McNAMEE: I'm not sure I understood you, Rob, but let me take a shot at it and you can correct me if I missed. I thought you had misspoken, you said fishery dependent indices, and that's what you meant. I'm kind of conflated with a number of different assessments that I've worked on in the past year.

I'm trying to tease out exactly what we reviewed for menhaden and all of the other things are a little foggy for me; but I'm assuming we did test some fishery dependent sources of information. During the benchmark process I think what we decided was well, now we have a bunch of fishery independent information that we can use. Therefore, we don't need to use fishery dependent indices of abundance.

We made that choice during the benchmark. The update is just a repeat, so that would be a big benchmark level decision; and we did not for this update change that. Could we review them again for the next benchmark, we certainly could. But that I believe is the choice we made during the benchmark process; which we just repeated here for the update.

CHAIRMAN BALLOU: Rob, a follow?

MR. O'REILLY: Yes, so that wasn't clear in reading through it; but the explanation is great. There is was Massachusetts pound net, New Jersey gill net, Maryland pound net, and PRFC pound net. It wasn't clear that they were already taken care of earlier; and if I may ask one other question?

CHAIRMAN BALLOU: Go ahead.

MR. O'REILLY: It's on the same situation, the Northern Adult Index. In looking at the chart that you had up there, you would almost say there was a sort of nullification of the trend in the last three years. It looked like 2014 was a spike, 2015 was a drop, and 2016 was up. Is the BAM model more sensitive to that terminal year, or is it more that the trend was a sort of a rising trend that the BAM model was fitting at that time?

MR. McNAMEE: Yes, I think we can actually go into the document. The fits to the indices are in there. They definitely go up and down. I agree with you on that. I would suggest they go up and down at a high level, and so I'm guessing, I can't remember specifically. I'm guessing the model probably shot right through the middle of that up and down; but in general that middle is up above the rest of the time series in the most recent period of time.

CHAIRMAN BALLOU: Pat Keliher.

MR. PATRICK C. KELIHER: Excellent presentation, Jay. Just on the line of questioning from Mr. Clark. This scaling of fishing mortality rate, does it give the TC any pause or any level of uncertainty associated with that? I am taking the way you've described that is the TC, even though there is quite a change because of that inclusion of data from the last three years, the TC is comfortable with the results that came from the model. Is that correct?

MR. McNAMEE: Yes, thanks Pat. I think the way I'll answer that is we talked about that a lot. That was probably the majority of our meeting. There were certainly concerns among the Technical Committee. But I'll maybe offer you the way that we get concerned about things is different than the way I think you all might.

The way that we thought about it, we were concerned. It was a big shift in scale in that Q parameter, and it did some things to the output. But overall the model diagnostics were still good. When you look at it comprehensively, we were comfortable with the model; the model outputs. We do already have a set of things that we're going to investigate for the benchmark; to try and figure out why that Northern Adult Index is so influential on the assessment.

We'll investigate that more; but we, I guess I'll say all made peace with it. The model diagnostics were good overall, and we tested the sensitivity. We did all of the things that we thought were necessary to kind of get us comfortable with it; and felt in the end that we were comfortable with the model outputs, even though they changed from the benchmark magnitudes.

CHAIRMAN BALLOU: We'll take a few more questions or comments; Emerson.

MR. EMERSON C. HASBROUCK: Thank you, Jason for your excellent presentation. I have two questions. One is, in the benchmark and then in the update, is M held constant throughout the time series regardless of biomass?

MR. McNAMEE: M is time static, so it does not change; it's a single vector that goes in for the entire time period. It does change by age though; so M is highest on the youngest age classes, lowest on the oldest age classes. It's a

little of both. It does change by age; but through time it is a static vector of information.

MR. HASBROUCK: This is the second part of the first question. As the numbers of individuals at the different ages, as that composition changes that is what changes M in the model, right or am I not following you then?

MR. McNAMEE: Yes, no, the numbers, it's sort of an independent entity that gets input into the model. It's based on this theoretical Lorenzen Curve that we scaled to some historical tagging information. But the numbers of fish do not influence what the M value is. They are not connected.

MR. HASBROUCK: As biomass goes up or down and predation may go up or down M remains constant through the time series.

MR. McNAMEE: Correct.

MR. HASBROUCK: Okay, thank you. The second question then is if age structure is expanding, particularly in the northern part of the range, then do you have any sense of why fecundity is dropping? Do we have more individuals who are perhaps outside of that sweet spot for fecundity; so we've got lesser numbers of adults at the age they're produced at the greatest number of eggs, or are the number of eggs at those different sizes changing with time?

MR. McNAMEE: I'm speculating on this one. It's an excellent question, and one thing I didn't kind of check in on. I noticed that as well, and I had meant to go back and see if I could figure out why that trend was occurring as well. Speculation on my part, it probably is in the document somewhere buried in there.

I'm guessing it is being influenced by the numbers at age, and it could be that the very oldest ages decline a little bit. If you think about it, it's an exponential relationship, and so even though those numbers of the very oldest

fish are small. If you change them at all it is going to have a big influence on that fecundity value. That again hypothesis, I don't know if I would even give it that much weight, but just one potential reason why that's occurring.

CHAIRMAN BALLOU: Yes, Doug.

MR. DOUG BRADY: Thank you for that great presentation. I'm not sure if this question is relative to this presentation, or maybe answered in some other one. On your historical Atlantic menhaden bait landings, I'm just trying to figure out. In 2010 it was 42,000, 2011 – these are round numbers – off the chart 52, and then it jumps up to 65. Then in 2013 it drops to 38,000 metric tons. I'm trying to get my arms around that sharp rise in bait landings and then that one year drop that is considerable. I'm not sure if this is the forum to ask that question or not.

MR. McNAMEE: Megan just whispered in my year that is probably management related. That was, was it the last addendum or two addendums ago or something like that; sorry, Amendment 2. That's a management influenced change, we believe.

CHAIRMAN BALLOU: Are you good, Doug?

MR. BRADY: I'm good.

CHAIRMAN BALLOU: Time for two more. David.

MR. DAVID BLAZER: Jay, excellent presentation. I had a whole list of questions, but you've answered most of them. You've done a great job of explaining the change in reference points, but I still have some concern about going from the benchmark assessment that has the reference point at 57 percent of an unfished spawning potential, and then now it's at 36 percent.

I think you've explained kind of how it's worked in the model; and I've got a better understanding. I guess my question would be, when we do the benchmark assessment will that change again as we go forward? Would it be prudent for us to look at those reference points to have something a little more stable? I guess just for management how we're doing that. The model suggested difference, but does that equate into the actual fishery or for management?

I guess the bottom line is what are the ramifications based on that change? You've got your summary slide up here that kind of tells us we're in pretty good shape, and that's positive. But how does that change in the reference points? What are the ramifications to the fishery as we go forward?

MR. McNAMEE: I guess I'll start by saying, with regard to the stability of those reference points that's a policy decision; a Board type decision. But to answer your question directly, could they change again? As long as we're using these proxy reference points that are based on the procedures that we've chosen, yes. They'll change.

You know they could change very little if the information is really static and stable from update to update; or they could change a lot and then conceivably they could change because we changed the philosophy of the reference points we want. The broad answer to all of your questions is yes. But as far as how to make them more stable. That sort of thing I think is discussion for the Board to have.

CHAIRMAN BALLOU: Interesting exchange there. We have time for, I think just one more. If anyone wants to be the last you now have the opportunity. I see no hands up, so we'll wrap this – oh, Jay.

MR. McNAMEE: I neglected, I was trying to get through the presentation so quickly, just big

thanks. Amy Schueller did the bulk of the work on the assessment. Amy is fantastic. Thanks to her, and also the rest of the Stock Assessment Group did a lot of work getting the indices and things like that together. Then thanks to the TC. We got a lot of good feedback from the TC, which improved the document and the model as well. A lot of work went into this; even though it was just an update, and I just wanted to not forget to say thanks.

CHAIRMAN BALLOU: I know I echo the sentiments of everybody on the Board in saying we feel the same way. Thank you. At this point we're very close to lunch; but we do have a little time left for anyone who may have arrived late; and missed the public comment period.

I would afford an opportunity for anyone from the public who's here now; and would like to address the Board on any issue that is not on today's agenda to be able to do so now. Is there anyone who would like to address the Board? Seeing no hand that means we're on to Item 5, which is lunch. This is a non-debatable issue; so we're going to recess now for lunch, and reconvene. Should we stick with 1:20?

MS. TONI KERNS: Yes, please.

CHAIRMAN BALLOU: We'll reconvene promptly at 1:20; thank you.

(Whereupon a recess was taken.)

CHAIRMAN BALLOU: Okay before I call the meeting back to order, Toni Kerns has, I believe an introduction that she would like to make. Toni.

MS. KERNS: I just wanted to, while we have a coastwide board, introduce our new FMP Coordinator; Caitlin. She's talking to Kirby. This is Caitlin Starks; and she is new to the team. Yesterday was her first day. I think she's met a couple of folks; but if you haven't met her, please stop by the back table and say hello.

We'll send out new species assignments next week.

CHAIRMAN BALLOU: Thank you and welcome, Caitlin. I will call this meeting of the Menhaden Board back to order. I hope everyone had a good lunch; and we're ready to proceed with the rest of the agenda.

BERP WORKING GROUP REPORT

CHAIRMAN BALLOU: Next on the agenda is Item 6, which is the BERP Working Group report on the paper published this year by Hilborn et al. titled When Does Fishing Forage Species Affect our Predators?

As the Board will remember, at our May meeting this paper was on our agenda as an FYI, essentially. In response the Board tasked the BERP Working Group to review the paper and report back to the Board regarding their thoughts and perspectives. There is a memo from the Working Group to the Board summarizing their review in the meeting materials.

That's at Pages 224 to 225, and Shanna Madsen, the Commission's Fishery Science Coordinator is poised and ready to go with a brief presentation to the Board on that review. We plan to spend about 30 minutes on this agenda item. It is not an action item. I don't anticipate the need for any motions. It's more of a briefing for the Board. With that Shanna, the floor is yours.

MS. SHANNA L. MADSEN: Thank you for the introduction. Actually you kind of stole my first slide here, so that's great. Just to dive right in. Essentially what happened was after the Board tasked us with reviewing this paper, the Workgroup reached out to the lead on the paper; Dr. Ray Hilborn.

He agreed to present the conclusions of this research, and give us a few other examples of

research that supported those conclusions. The Workgroup decided to develop a list of questions ahead of time that were distributed to Dr. Hilborn prior to that call; to kind of help guide that discussion.

We wanted to let the Board know that these are the same steps that we took when the Board previously tasked us with reviewing the Lenfest report. To dive right in, we kind of wanted to provide you with the main conclusions of Dr. Hilborn's paper. The overarching conclusion of this paper is that modeling the impacts of fishing on forage fish needs to be approached on a case-by-case basis.

He recommends that the management consider the high natural variability of forage fish populations and the adaptation of predators to that variability. Predators that focus on young immature fish may not be affected by fishing pressure on forage species; since forage species production is heavily influenced by environmental conditions. These fisheries may also focus on a different prey size than predators typically eat.

However, there are cases where predators could potentially compete with the fisheries, if they end up eating the same size forage that the fishery is selecting for. Also according to this research, factors including flexible prey preferences by predators, size selectivity by the predators, fisheries size selectivity, and environmental effects on recruitment strength need to be considered when models are built for each specific system. The paper does conclude that trophic models such as ecopath with ecosim often do not incorporate these factors; and can therefore at times overestimate the effect of fishing forage fish on predators.

One of the things that Dr. Hilborn brought up was that he recommends folks using something called Models of Intermediate Complexity for

Ecosystem Assessments; or MICE models. These models are specifically built to kind of address the main management questions that are under consideration; and can be very useful for addressing the impacts of fishing on predator/prey dynamics.

We also wanted to kind of note that in the 2015 Atlantic Menhaden Peer Review Workshop report the peer reviewers recommended that ecosystem reference points also be developed through the use of what they were calling Minimum Sufficient Complexity Models; which is essentially the same as MICE, just without the jargon.

That would essentially couple Atlantic menhaden dynamics with that of their main predator species. The Workgroup did want to note that they are currently developing a suite of intermediate complexity, menhaden specific models. These are what we end up reporting out to you guys on during May and October meeting weeks. We do believe that these align with both the general recommendation from Dr. Hilborn, and the Peer Review Panel.

As I've said all the time, I'm sure you guys are tired of hearing this. The Workgroup anticipates that these models should be ready for peer review in 2019; along with the benchmark assessment, so those will be paired with the BAM model and will go to peer review at that point. Both Hilborn and Pikitch et al., which is in other words the Lenfest report, do agree that specific ecosystem models are preferred; when you're trying to get to these ecosystem reference points.

However, the difference between these two papers sort of lies in what reference points they believe should be used in the interim; while these ecosystem specific models are in production. Essentially Pikitch et al. recommend the use of these kinds of default, generic reference points based on this expectation that there should be a negative

response in predator populations, caused by forage fisheries.

In contrast, D. Hilborn and his colleagues decided that they found very little evidence that fishing on forage fish actually affects the population growth rate of predators; even when predators have a large portion of their diet made up of that forage species of interest. The Workgroup did want to note that as they've been kind of working through, trying to develop these interim reference points that are under consideration through Amendment 3.

We did run into some problems translating these more generalized reference points into their single species equivalents that kind of place emphasis on maintaining a portion of total biomass, rather than spawning potential; which is what we're usually calculating. I don't want to spoiler alert that too much.

But Katie is going to review those issues in her upcoming presentation; so you'll see some of those caveats and some of the problems that we ran into when working with those. Overall the Workgroup does note that the selection of reference points is going to be highly dependent on management goals and objectives that are determined by the preferred tradeoffs of the specific ecosystem, as well as the ability to actually test whether or not those reference points meet the goals and objectives for your system.

Overall the Workgroup does note also that the general conclusions of Hilborn et al. are consistent with previous conclusions of the Workgroup; in that we have recommended that ecosystem models should be built specific to the system of interest. I believe that in our memo to the Board we note back to a memo that we provided you in 2015 on that topic. With that I am happy to take any questions.

CHAIRMAN BALLOU: Great presentation. Before I open the floor to questions, and I will, I

just want to note that the draft amendment at Pages 34 and 35 does cover some of the key findings and perspectives that emanate from the Hilborn et al. paper; pretty much echoing the essence of what Shanna just presented.

Really the question is the Board comfortable with the way that's done, or does the Board feel that anything more or less should be done? With that in mind, I'll take any questions for Shanna or any comments on the way the draft amendment addresses the issues raised by the paper. I'm sort of jumping ahead with that draft amendment teaser question.

But I do think that was the whole point of having the BERP Working group look at this paper, to make sure that they both provided a response back to the Board as requested, and that the draft amendment sufficiently incorporates the work that's been done on all sides of this issue; including Hilborn, of course including Pikitch. With that are there any questions for Shanna, based on the working group's report?

MR. CLARK: I was just curious about that last recommendation. You said that Hilborn did not recommend using generic reference points until reference points were developed; and then you also said that the work group agreed with Hilborn to develop specific reference points. Did they agree with them that generic reference points should not be used until the specific reference points are developed?

MS. MADSEN: Yes. Essentially, back in 2015 when we started to talk about some of these more generalized reference points, the Workgroup did go through trying to see if they would work for the system. We had a bunch of kind of just caveats. We did conclude that we believe that the Pikitch reference points weren't applicable specifically for menhaden. We did in a follow up memo I believe, in October, state that we thought that in the interim we should continue to use the single

species reference points until ecosystem-specific models are built.

CHAIRMAN BALLOU: Other questions. Yes, Nicola.

MS. NICOLA MESERVE: Shanna, you mentioned that the ecopath for the ecosystem models might not be the best. In the supplemental materials there is another document from, I'm going to slaughter these names, but Buchheister, Miller and Hood; referencing the model that they've developed that is an ecopath and ecosim for menhaden. How is that tying into the BERPs development of ecological reference points?

MS. MADSEN: Essentially Andre's group is working on that outside of the BERP group. We have been working closely with him, to help provide information where we can. He does come in and provide us updates. I don't want to speak out of turn, so Jay and Katie, please feel free to correct me if I'm wrong.

I think one of the main concerns that the BERP Workgroup has with using an ecopath with ecosim model to provide reference points for the Board is the fact that it's extremely data hungry. It takes a very long time to update. You need a lot of outside data sources to kind of be able to provide timely management advice.

When we were starting to work through figuring out what models we wanted to present to you, we did really take to heart the 2015 peer review recommendations that we should look for something with an intermediate complexity; that's going to be able to provide the management advice that you all need in a timely fashion.

That's one of the reasons that we actually stepped away from the multispecies VPA model that we were previously using to kind of give you that M vector that was going into the single species model. It took a very long time to

update, it was very data hungry. We're trying to move towards something that is going to give you good management advice in a timely fashion.

CHAIRMAN BALLOU: Other questions; yes, Rob O'Reilly?

MR. O'REILLY: I guess I heard what John Clark asked you and the answer; but I wanted to make sure this was in sequence to the current assessment update. In the assessment update it indicates that the MSP or spawner recruit based reference points are intended to be interim reference points, while the ASMFCs Multispecies Technical Committee develops ecological-based reference points. Is that pretty much what you summed up for John Clark? Okay. Thank you.

CHAIRMAN BALLOU: That was a yes for the record. Are there any other questions? Seeing none; oh I see one more hand up, Emerson.

MR. HASBROUCK: What pages in the document did you say that this was summarized on?

CHAIRMAN BALLOU: Pages 34 and 35 of the draft amendment; you'll see the issue addressed. I'm not sure if that aligns with the number in the meeting materials.

MR. HASBROUCK: Yes, I'm not seeing it here on 34 and 35. I thought that was what you said, but I don't want to bog us down on that one.

CHAIRMAN BALLOU: Jeff Kaelin just confirmed that it is on Pages 34 and 35 of the Amendment, so you've got to translate that into the meeting material page numbers. If you find the amendment in the meeting materials and then go to Pages 34 and 35, you should find it. Thank you for that clarification.

UPDATE ON 2017 HARVEST UNDER THE EPISODIC EVENTS SET ASIDE PROGRAM

CHAIRMAN BALLOU: Are there any further questions? Seeing none; we will move on to the next agenda item now, and we have changed the order per the modified agenda that the Board adopted earlier today. We are now on what is now Item 7, an Update on 2017 Harvest under the Episodic Events Set Aside Program; and I believe Megan has a presentation.

MS. MEGAN WARE: It is just one slide, so I'll start talking. On June 30, staff notified states that 80 percent of the set aside had been used, and as a result the set aside program was closed on July 5th. At that time the states of Maine, Rhode Island and New York were actively harvesting under the set aside. After we totaled the landings they indicate that there has been a roughly 283 pound overage to the set aside; 283,000, my pardon overage to the set aside.

We have our table up here, which has our 2017 episodic events quota; which was roughly 4.4 million pounds. The three states collectively harvested just under 4.7 million pounds; so that's 106.4 percent of the quota. To give a heads up to the states, given that all the set aside was used there will be no redistribution of unused set aside on November 1st.

CHAIRMAN BALLOU: That's the summary. Are there any questions for Megan regarding that summary? Pat Keliher.

MR. KELIHER: The Addendum is fairly quiet on payback on this; so I'm assuming Rhode Island will cover the overage.

CHAIRMAN BALLOU: We'll leave that open as a rhetorical. Are there any other questions or comments on Megan's summary of the episodic events harvest in 2017? Dr. Duval.

DR. MICHELLE DUVAL: I've talked about this. We've actually been approached by a couple of

states, New York and I believe Maine for request for a quota transfer; just to cover overages in their existing quota allocations. During one of those conversations it came up as to whether or not North Carolina might be able to cover that episodic events overage, and transfer some of our unused menhaden quota from this year into there.

I've talked to staff, and we think we might be able to cover that. We certainly want to be able to cover the requests that we've received from New York and from Maine; it's likely that we could do that. We might want to do it in sort of two chunks, just to make sure that we don't go over our own allocation. I just wanted to put that out there for the Board's consideration.

CHAIRMAN BALLOU: Thank you for that; very helpful. Is there any other discussion on this issue? Seeing none; we're doing well with our agenda. But boy, the next issue may well change that. We'll try to stay on track, because the next issue is the review. Did I miss something? Oh, Eric, I'm sorry. Go ahead, Eric.

MR. REID: That's okay, Bob. I see that you had to combine the three states because of confidentiality rules. At some point we're going to find out what New York landed, because they're capped at a million pounds. Is that correct?

MS. WARE: I can't say individually what the states landed, because if you know one or two of the states you can calculate the third. I always will have to present episodic landings either as all three together or as a total state landing.

CONSIDER DRAFT AMENDMENT 3 FOR PUBLIC COMMENT

CHAIRMAN BALLOU: Okay, it is what it is, I think. All right, on to the next agenda item, which is Draft Amendment 3; this is the big enchilada for today. The purpose of the agenda item is to review and approve Draft

Amendment 3 for Public Comment. A lot of ground to cover here, but we have about three hours set aside to do it; and we're actually ahead of schedule. Let's get to it.

We're going to begin with a series of four back-to-back presentations; one from Dr. Drew, who is going to review the BERP Working Group's report on interim reference points. Then Megan is going to review the draft amendment pretty much in its entirety; to just kind of cover all the bases there, in terms of what the Amendment is all about.

Then Megan is also going to offer the PDTs as the third presentation; the PDTs report on the New York proposal to recalibrate its landings. Then Jeff Kaelin will provide the AP report on the draft amendment. We're going to just try to move through those reports relatively quickly; take the time that we need.

We're going to then move into the actual discussion on the amendment itself, and any changes that the Board wishes to make. The idea here is to first sort of set the stage with these presentations; and then roll up our sleeves and go at it as a follow. That is the game plan; we'll see how it goes. With that we'll begin with Dr. Drew's presentation on the BERP Working Group's report on interim reference points; and that can be found at Pages 376 to 378 of the meeting materials. Katie.

BERP WORKING GROUP REPORT ON INTERIM REFERENCE POINTS

DR. KATIE DREW: We'll be starting with the Interim Reference Point Option presentation. What I'm just going to go through today is how the reference points were calculated, how the BERP actually translated sort of these theoretical ideas into the numbers that you saw in the document; as well as go over what the actual values are, and some of the caveats and

concerns that the BERP had with how these reference points ended up being calculated.

As a reminder, just to set the stage for some of the issues that we dealt with. The single species biological reference points that came out of the update are from an age-structured model; whereas these interim ERPs are from ecosystem models that if they have any, they have very limited size structure.

Usually they will either treat these prey items and these species in the model as a single lump of biomass; or they'll say small animals and big animals. It misses some of the fine scale detail that the age-structured model has, in exchange for the larger ecosystem complexity. The question becomes, how do you convert from sort of model and framework into another framework; to make it work with the available data that we have?

Going forward, to start with we're going to talk about the single-species reference points. The single-species reference points as Jay covered earlier today are based on an F target and an F threshold that are empirical; and based on the median and maximum geometric mean of F on Ages 2 through 4 for 1960 to 2012.

This figure here has the time period in question, 1960 to 2012, with the maximum in the red line and the median in the black dashed line. To give you an idea of what those reference points look like on the fishing mortality of the time. We've covered those. I'm not going to get into a lot of depth on that right now. The first option, so that's Options A and B, Option C is the Pikitch et al. or the Lenfest Report options, which specify. There are two components to this. The first is at the maximum F rate that you would allow would be one-half of natural mortality; or one-half of Fmsy if you had an Fmsy estimate, whichever would be lower. We do not have an Fmsy estimate for menhaden; because that requires a spawner-recruit

relationship, and we don't feel that we have the data to evaluate that.

We feel environment is a bigger driving factor than spawning stock biomass is in determining recruitment. We are presenting or calculated the maximum F as one-half of natural mortality. However, we use an age-structured natural mortality; as Jay mentioned earlier today. What you see in this graph is basically the estimates of natural mortality for each age class.

As you can see, the youngest fish have the highest natural mortality and the older fish have a lower natural mortality. How do you get a single value out of this for your reference point? You could take a single straight across average; but that doesn't reflect the fact that not all of these ages are equally abundant within the population.

In this figure you can see sort of the equilibrium total biomass structure of the population. You can see that most of the biomass is really in Ages 0, 1 and 2 and then it declines after that. There is more biomass coming from those younger, smaller fish; because they're more abundant. What we did to come up with our maximum F value for the Lenfest reference point is to take the biomass weighted average M.

Basically, weight each value of natural mortality at age by the biomass of that or what proportion of the biomass that age class represents in the population. We use the equilibrium sort of long term average expected proportions of biomass. But obviously the biomass structure of the population would affect that estimate of natural mortality. This gives you a sort of population-wide-average natural mortality; rather than the age-specific natural mortality that our model uses.

The second component of the Lenfest reference point is the hockey-stick control rule. The maximum F allowed is that one-half of M. That

is allowed sort of basically under virgin conditions you can fish at that rate. As the population declines, you fish at a lower and lower rate; until you reach 40 percent of your B-0. After that 40 percent of B-0, no fishing mortality is allowed. To figure out how hard you fish in between 100 percent of B-0 and 40 percent of B-0, we fitted a line from that maximum allowed F to the point at which you do not allow an F.

Therein, to figure out your target F you look at where you are relative to that virgin biomass; and follow that line down until it intersects with that red dashed line, and that's your target F. In this case we are at about 47 percent of B-0 right now; according to our assessment update. That translates into where that 47 percent translates into target mortality where it intersects that gray line of the hockey stick.

That's how the hockey-stick control rule works for the Lenfest reference points. The next set of options, Options D and E are the ones based on essentially the B-75 percent rule of thumb. They're based on the idea of maintaining biomass at 75 percent of virgin biomass, and figuring out the fishing mortality that gives you either a target of 75 percent of your virgin biomass or a threshold of 40 percent of your virgin biomass. With this we used a per-recruit model, which is an age-structured model essentially; to find the levels of fishing mortality that resulted in total biomass being 40 percent or 75 percent of the unfished biomass. This is the same model and the same inputs that the assessment model, the BAM model uses to calculate our fecundity-based reference points. I'm sure you guys are all familiar with SPR or spawning-potential-ratio reference points from other species that you would try to get at 30 or 40 percent SPR.

It is essentially the same concept, but instead of trying to preserve spawning-stock biomass, we're trying to preserve total biomass; which includes the immature fish in Ages 0 and 1.

That was a fairly straightforward method of getting at the F rate that will get you either 40 percent of your unfished biomass or 75 percent of your unfished biomass.

The hang up, a little bit, is that all three of these methods are reporting F on different components of the population; just from the way they are defined. The single-species reference points as we've already talked about, are reporting the average F on Ages 2 through 4; which are the three most heavily exploited age classes in the population. The biomass-per-recruit estimates for the 75 percent and 40 percent B-0 are reporting the maximum F experienced by any age; and the one-half of M reference point is essentially an average over the entire population.

As they are calculated, they are not directly comparable; because you're talking about the maximum versus the population average. In order to give you guys numbers that are all on the same scale and can sort of be compared to each other; we've converted all of the F estimates into biomass-weighted average F values for the entire population.

What you can see in this graph is basically the green bars indicate for the 40 percent B-0 reference point, the individual age-specific F that each age would experience in the population. This takes into account the fact that the selectivity in this fishery is essentially dome shaped. That the fishing pressure is mostly on those middle ages, and the youngest and the oldest age classes are not as heavily exploited by the fishery. Each age has its own specific fishing mortality, and that fishing mortality has been weighted by this equilibrium total biomass.

You have more biomass in the Age 0s that experience lower fishing pressure, essentially balances out kind of the average F across the entire population; which is why in the management document, the numbers are

different than what you saw in the assessment update, even for the single species. It's the same level of fishing pressure, but we're reporting it over the entire population instead of over the three most heavily exploited age classes. That is why those numbers are a little different from what you may have seen before.

But again, we want to stress that we're talking about the same amount of fishing pressure. What are the actual estimates? These are the estimates in the table. I'm not going to go through and read them off one by one. You can go back to the document and look at the table. Instead, I'm going to show you this figure; which is essentially sort of lining up the different options with reference to that black dot, which is the F in 2016. The F in 2016 is also reported as the biomass average F.

The solid lines represent the thresholds, and the dashed lines represent the targets. The single-species threshold is in blue, the Lenfest threshold is in gray, and the B-40 and B-75 percent are in orange. What you can see from this graph, just kind of to give you an idea of where we are in 2016 relative to these proposed reference points. We are below all of the thresholds, so overfishing is not occurring. We are below the single-species target; which is what the update said, but we would be above the ecological reference point targets. Just to lay out a couple of caveats that the BERP had about developing these reference points. Again, we're kind of trying to translate between two models that are really describing different processes. The BERP had some concerns that BRPs that focus on conserving total biomass may end up depleting your spawning stock to levels of spawning potential well below, kind of the fecundity limit that we proposed.

The reason is because of what you can see with this figure here, which is the black line is the selectivity again of the fishery; that dome shape that's applying pressure to the middle ages. Whereas in the equilibrium total biomass you

have a lot of biomass in Age 0 and Age 1, those youngest, most abundant fish, whereas the fecundity is all the more heavily present obviously in the older, bigger fish that are actually mature and contribute to the spawning stock.

If you're trying to figure out a level of fishing mortality that reduces total biomass to 40 percent or 75 percent, what's going to happen is you have to fish those middle age classes very hard; in order to reduce the biomass to that level, because so much of the biomass is concentrated in those unexploited age classes.

Whereas a fecundity reference point is going to require you to preserve more of those older age classes independent of your recruits. There is the potential that in this system, with this fishery with this kind of dome-shaped selectivity; where you're not really exploiting Age 0 and 1 that you're going to push spawning stock biomass, and the adult mature fish, to much lower levels than you would want, and still not have a big impact on total biomass.

The other two caveats are that we're presenting this biomass-weighted average F, because we need to keep everything on the same scale; so that you're not comparing apples and oranges. But it makes even very high, full F look low. By spreading that F out over those unexploited age classes, even if you're hitting Age 3 and 4 extremely hard with the fishery; because there is so much biomass in those very low exploited Age 0 and 1.

It's going to pull the whole population average down and make it look lower than it would if you were looking at the exploitation rate on the single most exploited age classes. Just the final caveat is that the ecosystem models used to develop these interim ERPs are using fundamentally different assumptions about the fisheries and the behavior of the fisheries; in particular that dome-shaped selectivity is not

something that's really incorporated into the ecosystem models.

That if there is size structure in the ecosystem models, it usually assumes that the oldest fish are fully exploited, whereas as we've seen with this model, the older fish actually there is a little bit of protection for them with that dome-shaped selectivity that the older age classes are not as fished as heavily as those middle age classes.

This will have an impact on kind of how you assume the population is going to respond to that level of fishing pressure; so just some caveats to point out. I'll take questions now about the reference points and the reference-point calculations specifically.

CHAIRMAN BALLOU: Yes let's do that. First, thank you very much; excellent presentation and through you to the BERP Working Group, thank you for their excellent work on analyzing this issue. Are there questions for Katie on her presentation on the BERP Working Group's report on this issue? Seeing none; oh, I see one hand up. Allison.

MS. ALLISON COLDEN: I would just like to echo your sentiments that I'm very appreciative of all the work that the BERP group has put into this. I know this is sort of charting new waters; which is never an easy task to take on, so thank you. The memo also was excellent, and really helped sort of guide me through that. I appreciate it.

Curious as to these reference points and the discussion of the reference points, and the methods used in the amendment itself, and maybe we'll get there; so please just let me know if we need to defer this. I think the information that is in there is a really good start. But I'm wondering if additional information would be helpful as we move forward in the process; especially if there are alternative methods that are developed for

comparing the biomass and F-based reference points.

I think there was a reference earlier to the memo in the supplemental material about a new paper that just came out that has even another method for deriving comparable estimates. I would just hope that there could be some additional information included; so that once this goes out that there is a possibility to sort of really dig in on the methods.

DR. DREW: The BERP can certainly work with Megan to make sure that we can clarify some of that language. Obviously we don't want to get too far into alternative theoretical reference points; like these are the options, this is what they are and this is how we're going to come up with actual numbers that reflect that theoretical. But I think we can certainly work with Megan to make any of that more clear, in the document that goes out for public comment.

CHAIRMAN BALLOU: Please remind us when we get back to that portion of the review of the draft amendment your suggestion to make sure we've captured that. That would be the appropriate time to kind of codify that suggestion. But thank you. Are there additional questions or comments on this issue? Seeing none; and I think I'm in order here. I hope I am. I think it is Megan up next for a full walk through of the draft amendment.

REVIEW OF AMENDMENT 3 MANAGEMENT ISSUES AND ALTERNATIVES

MS. WARE: I'm going to be going through the Amendment 3 Management Alternatives. Before we get started, hopefully everyone has had a chance to read through the amendment or parts of it. Hopefully some of the things you've noticed are that there are a large number of management alternatives in this document. Staff is concerned that this could be cumbersome at public hearings, and impedes effective public comment.

As a result, one of the goals today is to consider ways to pare down this document. To that end there are two questions that I would like to pose to the Board; and I would like to give credit to Jim Estes, actually for these questions. He posed these at the Florida public hearing for the PID; and I think that they were really effective at kind of framing the discussion.

The two questions I'm going to pose are, is the management alternative beneficial for my state, and is the management alternative beneficial for the coastwide management of menhaden? If the answer to both of these questions is yes, then I think that's a really viable option that the Board should be considering and hoping to keep in Draft Amendment 3. If the answer to both of these questions is no, then I think that's something the Board should consider removing from the document so we can make those viable options a bit more visible. If the answer to one of these questions is yes and the other is no, then I think that warrants some Board discussion. I just ask that you keep these questions in mind as we go through the management alternatives. We're going to start with Section 2.6 that is Reference Points. There are five options here.

Option A is our single-species reference points, so we've talked a lot about those today. Those are calculated from our assessment model; and they are based on the maximum and median fishing mortality rates for Ages 2 through 4 from 1960 to 2012. Under Option A, the development of ecosystem reference points would not be pursued, so this would mean any ongoing tasks of the BERP Workgroup would be stopped.

Under Options B through E, the BERP continues to develop those menhaden-specific reference points, but what differs is the interim reference point. Under Option B the BERP continues to develop menhaden-specific reference points. In the meantime we continue to use our current single-species reference points.

Under Option C, again the BERP continues to develop menhaden-specific ecosystem reference points; and in the meantime we use the Pickett et al. hockey-stick control rule. I think Katie did a good job of describing this. This is the same figure but under this option F does not exceed one-half of natural mortality; and as your biomass decreases your fishing rate linearly decreases.

Once your biomass falls below 40 percent unfished biomass, then fishing is prohibited. Under Option D the BERP continues to develop menhaden-specific reference points; and in the interim we use the 75 percent rule of thumb. Under this rule of thumb we use a fishing mortality rate that achieves 75 percent unfished biomass.

Finally we have Option E. Again the BERP is continuing to develop menhaden-specific reference points; and in the meantime we use a target-fishing mortality rate that achieves 75 percent unfished biomass, and a threshold mortality rate that achieves 40 percent unfished biomass. This is Table 1 on Page 38 of the draft amendment, and it compares the different reference point options with their resulting values; as well as where we are today.

This is kind of the same table that Katie talked about, so I'm not going to go into depth; but this is exactly the same thing she showed with the different lines, the gray, the blue and the orange lines on her previous slide. Section 4.3.1.2 is our Indecision Clause. Just to kind of take us back to May; we talked about this a little bit, and some of the feedback that the PDT got was that maybe we should look at more carrot approaches to having the Board pursue setting a TAC for the subsequent year, instead of stick approaches.

We've developed a couple options. But I do just want to review the purpose of the indecision clause. The purpose is to specify what happens if the Board cannot agree on a TAC for the

subsequent year. The intent is to provide a non-preferred option; which encourages the Board to approve a TAC.

Again we have four options here. If the Board is unable to approve a TAC for the subsequent year, under Option A, the TAC will be set at 3/4 of the current TAC. Under Option B the TAC will remain the same, but any unused quota could not be rolled over into that subsequent year; and then any overages that occur would not be able to be addressed through transfers or quota reconciliation. Under Option C, again the TAC remains the same but there is no episodic-events program and no incidental-catch provision. Under Option D all provisions of the current management plan are maintained, including the TAC. This would just keep status quo. Section 4.3.2 is Quota Allocation; and first I'm going to describe the allocation methods.

Then I'll talk about how they are presented in the draft amendment. There are kind of six different approaches we can take for allocation. We have our dispositional approach, so that's bait versus reduction. We have allocation based on a TAC level. We have fleet capacity where that divides allocation by gear types.

We have a jurisdictional approach and kind of its cousin to that is the fixed minimum approach. We have a regional approach, and then a coastwide approach. I'm going to talk about each of these in detail. We'll start with our dispositional allocation, so again that's bait versus reduction. There are two sub-options here.

The Board could decide to allocate 30 percent of the TAC to the bait sector and 70 percent to the reduction sector; or under Sub-option 2 that split can be based on historic landings. One thing to note is if the bait quota is not further divided by another allocation method, then a trip limit of 25,000 pounds will be implemented once 80 percent of the bait allocation is reached.

The intent of this is to minimize overages. I've also included examples of tables on some of these slides. I've not included all of the tables, since there are so many. But the Board can see the tables for the dispositional allocation method; it's Tables 2A and B on Page 53 of the Amendment.

Our next allocation method is based on the TAC level, and I'm going to try and describe this through a figure. On our Y-axis we have our TAC. As our TAC increases we get to the dotted line, which is 212,500 metric tons; and that is our baseline here. Any time a TAC is set that is equal to that or below that we use our current allocation method. Any time the Board sets a TAC that is greater than 212,500 metric tons, the difference, so that would be what's in green, is allocated in a method that is more favorable to the bait fisheries.

There are two options here as to how that green portion could be allocated. Under Sub-option 1 that difference is allocated such that the reduction fishery gets 50 percent and the other 50 percent is distributed to state-bait fisheries. Under Sub-option 2 that difference is allocated such that the reduction fishery gets 30 percent and the other 70 percent is distributed to state-bait fisheries.

This is an example of the table for an allocation based on TAC level. But again, I encourage the Board to look at Tables 3 and 4 on Pages 54 and 55. These show the allocation of again that green portion. That difference between your higher TAC and the 212,500 metric tons. Next we have our fleet capacity quota. We have two options here. Our first one is a two-fleet approach. We would have our large fleet, which are things like purse seines and pair trawls.

Then our small fleet is everything else. The other option is a three-fleet approach. We have a large fleet, which is again our purse seiners and pair trawls; a medium fleet, which would be

things like pound nets or gill nets or floating fish traps, and then your small fleet which has things like cast nets and hand lines.

Under those options we have sub-options. Those ask whether these quotas are hard caps or whether the small fleet operates under a soft cap. Depending on the gear types that are potentially included in that soft cap, there are different trip limits. There have been a couple questions about soft caps; so I just wanted to take a slide to fully try and explain these.

What is a soft cap? The intent here is to set a target quota for the small-scale fleet; but it does not subject this fleet to a fishery closure. When we think of the scale of the gears that could be subject to a soft fleet, it's quite small. Only up to 6 percent of total landings are landed by this small-scale fleet.

When we think about the total fishery, it's a very small portion of that fishery; although it does encompass a wide number of gears. Some of the advantages of a soft cap are it relieves the administrative burden on states to implement timely quota monitoring. It provides flexibility to these gear types and minimizes discards.

It minimizes the economic impacts to small-scale-community fisheries. The disadvantage is that small-scale fleet could exceed its target quota in a given year. To this end, the PDT has tried to add in some harvest control measures that set an upper bound for what could be harvested under a soft cap.

We have included things such as trip limits, the ability for the Board to reduce that trip limit, or remove a gear from a soft cap. Then the requirement that states continue to report their landings yearly, so that we can monitor trends. Here are example tables for that fleet capacity option; but I encourage you to look at Tables 5A through C and 6A through C.

Next is our jurisdictional quota. This is where we divide the quota between the states; and I encourage you to look at Tables 10A through C on Page 64 through 65. The cousin to this approach is the fixed-minimum approach. Here we're still allocating quota to each of the states; but each state receives a minimum percentage of the TAC.

On an annual basis states can choose to forego their fixed-minimum quota, or retain 10,000 pounds for bycatch. The PDT has added this provision; since under this option states which historically did not have a fishery are allocated quota. Any quota that is relinquished by a state would then be redistributed to states that have opted in.

There are three sub-options here. We have a half-percent-fixed-minimum quota, a 1 percent-fixed-minimum quota, and a 2 percent-fixed-minimum quota. This is an example table of that half-percent-fixed-minimum quota. But I encourage you to look at Tables 7A through C, 8A through C, and 9A through C.

Our final allocation option here is the Regional Approach. We have two options here. We have a three-region approach, so it creates the New England Region from Maine through Connecticut, a Mid-Atlantic Region from New York through Delaware, and then a Chesapeake Bay-South Atlantic Region from Maryland through Florida.

Under the four-region approach that Chesapeake Bay Region is separated from the South Atlantic Region. I encourage you to look at Tables 11A through E and 12A through C for this option. That is the description of the different allocation methods. Now I'm going to talk about how they're presented in the document. We have four tiers. The idea behind the tiers is that it provides the Board a step-wise approach to come up with an allocation decision. The Board will make a decision in each tier, and once the Board makes a decision

in each tier that kind of gives you your allocation package. In Tier 1 we have our dispositional quota and our allocation based on TAC level; or the board can choose none of the above.

In Tier 2 we can choose a fleet capacity option or a fixed-minimum option; or again none of the above. In Tier 3 you can choose a coastwide, a jurisdictional or a regional approach; and then in Tier 4 you would choose the allocation timeframe on which you're going to base this decision. Just to provide an example here.

If the Board was interested in this fleet-capacity option, in Tier 1 the Board would choose none of the above. In Tier 2 they would choose that fleet capacity option. Let's say for example the Board was then interested in further dividing that fleet into different regions. Then you guys would choose regional in Tier 3, and then you would choose your allocation timeframe in Tier 4.

Just to show that one of the advantages of this tiered approach is it allows for the combination of different allocation methods. That dispositional approach can be combined with the fleet capacity or fixed minimum approach. That fleet capacity option can then be combined with a regional approach.

To wrap up the allocation section, these are our timeframes. Option A is 2009 to 2011; so that's our status quo. Option B is 2012 to 2016; that's our most recent time period. Option C is 1985 to 2016; that's our longest time period. Option D is 1985 to 1995; that's our most historic time period, and then Option E is a weighted approach where we give equal weighting to Option B, which is 2012 to 2016 and Option D, which is 1985 to 1995.

You will also notice that we have several options under these more historic timeframes; and this asks whether all historic reduction landings should be included in the allocation

percentages, or only those of Virginia, given that they are the only state with an active reduction plan. We're going to move on to Section 4.3.3; which is Quota Transfers.

One of the things to note is that quota transfers only apply if a regional or state-based quota is chosen. The Plan Development Team did not think it was appropriate for quota to be transferred either between the bait and reduction sector or between different fleets. Option A is kind of like our status quo.

Under this option two or more states under mutual agreement can transfer menhaden quota. Option B tries to add in some accountability measures here. The intent is to dissuade states from perpetually exceeding their quota; and then getting a transfer to ameliorate that. Under Option B, if a state or region exceeds its quota by more than 5 percent in two consecutive years, it cannot receive a quota transfer in the third year.

Option C is quota reconciliation. The intent of this option is to streamline the quota transfer process. If the TAC is not exceeded, but a state or region has an overage; those overages are automatically forgiven; so there would be no need for quota transfers. If the TAC is exceeded and states or regions have an overage, then any unused quota is pooled and equally distributed to the states or regions with an overage. Any remaining overage would then be deducted from the subsequent year. It is also important to note that quota rollovers are not permitted under quota reconciliation; given that we pool unused quota. Option D is quota reconciliation; but again we're trying to add in accountability measures. This is again to dissuade states from habitually exceeding their quota; with the idea that their overage would just be forgiven. If the TAC is not exceeded, but a state or region has an overage, a percentage of that quota overage is forgiven.

That percent forgiven depends on the number of previous years of an overage. As an example, if my state did not have an overage in 2016 but I did have an overage in 2017, up to 100 percent of my overage could be forgiven. In contrast, if I had a overage in 2016 and I had an overage in 2017, then only 75 percent of that overage would be forgiven.

If the TAC is exceeded and states or regions have an overage, again any unused quota is pooled and equally distributed to states or regions with an overage. That percent that can be accepted by a state or region depends on the number of previous years of overage. Similar to Option C, quota rollovers are not permitted under quota reconciliation.

Section 4.3.4 is Quota Rollovers. Rollovers are permitted if the stock is not overfished and overfishing is not occurring. The PDT has currently written that unused quota is rolled over on July 1st, and there are a couple reasons we have chosen this date. Right now landings are submitted on April 1st as a part of compliance reports.

However, these landings are often preliminary. Just to give an example, we had two states this year that had very significant changes in their landings from what was presented to me on April 1st, and then what was submitted on a date like July 1st. Typically landings are finalized by July 1st, so if we have our quota rollover date on July 1st, this is going to minimize the changes to the amount of quota that can be rolled over; and reduce the administrative burden of this program.

We have five options here. Option A does not allow for quota rollovers. Under Option B, 100 percent of that unused quota could be rolled over. Under Option C, 10 percent of your total quota can be rolled over; so as an example, if my quota is one million pounds up to 100,000 pounds of unused quota can be rolled over.

Option D is a 5 percent total quota rollover, and Option E is a 50 percent unused quota rollover. Section 4.3.5 is incidental catch. One of the first things that this section does is it defines different gear types. I think one of the challenges with Amendment 2 has been trying to determine which gear types can harvest under that incidental catch provision.

We have small-scaled gears versus non-directed gears versus stationary-multispecies gears. You'll see that abbreviation SM, SG throughout the slides. We have six options here. In these first three options incidental catch is not included in the TAC; so this means it's caught in addition or subsequent from the TAC. Under Option A, there is a 6,000 pound trip limit for non-directed gears.

This is kind of your true bycatch provision. But we maintain that 12,000 pound bycatch provision for two individuals fishing stationary-multispecies gears. Option B expands that to non-directed gears and small-scale gears. This would cover things like pound nets as well as cast nets. This is probably closes to what we have now. Again, we keep that 6,000 pound trip limit; but 12,000 pounds for two individuals fishing stationary multi-species gears. Option C is a catch cap and trigger. We set a cap at 2 percent of the TAC. This is not a set aside, so we aren't taking 2 percent off the top; but it's a target that we can measure incidental catch by. Action is triggered to reduce incidental catch if that cap is exceeded by more than 10 percent in a single year, or two years in a row.

Again, we maintain that 6,000 pound trip limit, 12,000 pounds for two individuals fishing stationary-multispecies gears. In Options D through F, incidental catch is included in the TAC. This means we're taking a part of the TAC off the top and setting it aside for incidental catch. Under Option D, we take two percent of the TAC and set it aside for incidental catch; after the quota is met.

This would be for small-scale gears and non-directed gears; and again we would maintain that 6,000 pound trip limit, 12,000 pounds for two individuals fishing stationary multi-species gears. Option E is a 1 percent set aside for small scale gears to harvest from throughout the year. This would allow things like hand lines or cast nets to harvest from this set aside throughout the year.

The intent of this is regardless of the allocation method chosen by the Board; there is an option that allows the Board to set aside a percentage of the TAC for these small-scale gears. At this time there is no trip limit; but the Board does have the ability to implement a trip limit if needed in the future through adaptive management.

Option F; all catch is included in the TAC. This means once the directed quota is met the fishery closes. Next is our Episodic Events Program. Eligibility in the program is for Maine through New York. We've maintained the same mandatory provisions that are currently in place. Harvest is restricted to state waters; there is 120,000 pound trip limit, and daily trip level reporting.

Then we have three options for the amount that can be set aside; 1 percent of the TAC, 3 percent of the TAC, or 0 percent of the TAC. Our final issue is the Chesapeake Bay Reduction Cap. This limits the allowable harvest from the Chesapeake Bay reduction fishery. The intent is to prevent all of the reduction fishery harvest from occurring in the Chesapeake Bay; which is a critical nursery area.

Under Option A, we would maintain the cap at roughly 87,000 metric tons. Then we have sub-options that allow for a portion of that TAC to be rolled over if it is unused. Option B reduces that cap to 51,000 metric tons; which is approximately a five-year average. Again, there are sub-options that allow a portion of that to be rolled over if it's unused. Then Option C

removes the cap; so this means that there would be no restrictions on the reduction fishery in the Chesapeake Bay.

That is the management alternatives in the document. I think everyone is still alive, so still with me. I just want to give a bit of perspective. If we keep this document as it is now that is the presentation that I would have to give at a public hearing. I think everyone is in agreement that that might not be a successful public hearing. Kind of my challenge to the Board is how can we create a successful document for public comment? With that I will take any questions.

CHAIRMAN BALLOU: We're going to take Megan up on that challenge momentarily; but we're not there yet. Right now where we are is just at a point where I am going to entertain any questions for Megan on her presentation; namely how the document is set up, how it's intended to work, just the mechanics if you will of the document itself, which she just offered. If there are any questions on that I will entertain them now.

Just know that we're quickly approaching the point where we're going to be opening the floor to discussion on the substantive issues that she just covered; and people will be able to comment on what they like and don't like. But we're not there at this moment yet; so with that is there anyone who would like to ask Megan any questions about what she just presented? Yes, David.

MR. DAVID BUSH: Thank you for the presentation, Megan. Just a brief question, the rollover that you had mentioned, it didn't specify and I didn't see it anywhere. I'm assuming here, and maybe it might be something that's worded in, but these rollovers would only obviously be from the previous year; they would not accumulate, correct?

MS. WARE: Correct. You could only rollover unused quota from the previous year. You can't roll it two years in a row.

CHAIRMAN BALLOU: John Clark.

MR. CLARK: Thanks for the presentation, Megan. Did we actually have more options now than were presented in the Public Information Document?

MS. WARE: We do.

CHAIRMAN BALLOU: It's been growing. But again, credit to the PDT for taking everything that they were handed; which was quite a handful, and developing it in the way they did. I think although I share Megan's interest in winnowing this down; nonetheless, I think the PDT has done an awesome job taking everything they were handed.

If you remember in May, there was no recommendation to pull anything out; so everything stayed in. Then I think there were some additional supplemental options added; because the PDT felt that was the only way to really effectively convey them. Are there other questions for Megan; Jim Gilmore?

MR. JAMES J. GILMORE, JR.: Great job, Megan. You just are amazing that you can keep that all together. Just on the, owing to my fond love of quotas and how well we do all the time. Is there something that we get through this and we figure out quotas; whether they're regional, state or whatever, at some point down the road that we have the capacity to reevaluate this or is that something we're going to take up at a later date?

MS. WARE: You mean reevaluate whatever decision is made in November?

MR. GILMORE: Yes, owing to the point that the premise we violate a lot is that fisheries change over time. We seem to lock these things in. We

don't want to do a new plan and lock this in; without the ability to reevaluate them if things change in the future.

MS. WARE: Yes, so we have kept that three-year provision; where the Board can reevaluate after three years. But we've added that that is something that can be done through an addendum; not an amendment. That should shorten the process.

CHAIRMAN BALLOU: Other questions, Nicola.

MS. MESERVE: For Option E in the Ecological Reference Points, is the 40 percent threshold there a cut off for fishing; a moratorium similar to Option C with 0.5 of M being a cut off, the hockey stick control rule? Could you clarify that for me?

MS. WARE: Yes, how it's currently written it's not. It's a threshold similar to what we use now, so that would trigger management action.

CHAIRMAN BALLOU: Additional questions, yes, Dave.

MR. BLAZER: Yes, one quick question. Megan, excellent job, just when you were talking about the tiers and the arrows going back and forth, if you choose like the two-fleet capacity, like I think it was Tier 3; you have the option of state-by-state versus regional or coastwide quota. I think there was just one arrow coming down. But in that two-fleet capacity you could designate the allocation in those three different jurisdictional ways; is that correct, or how do you see that?

MS. WARE: Technically you can, the issue is due to confidentiality I cannot show large scale allocations by state; since so many of those purse seine landings are confidential. I can show them by three regions, but that's it.

CHAIRMAN BALLOU: Excellent questions all around. Others, seeing none; we'll move on to,

we have two more presentations and then we're going to get into potential changes to the document. We'll get into the meat of the matter shortly.

PLAN DEVELOPMENT TEAM REVIEW OF NEW YORK'S PROPOSAL TO RECALIBRATE LANDINGS

CHAIRMAN BALLOU: But first we have another presentation on New York's proposal to recalibrate their landings. That report can be found at pages 379 to 401 of the meeting materials; and I think Megan has a presentation on that.

MS. WARE: I'll start talking. New York has submitted a proposal to recalibrate landings; due to inconsistent and nonexistent reporting in some of their historic years. In their proposal they compare landings and the number of trips from 2013 to 2016; and they compare that to 2009 to 2012. The intent is to scale historic landings. The options to scale landings range from 2.9 to 4.62; and this difference is due to whether landings or the number of trips are used as that scaling factor.

The PDT did review this proposal. Overall the PDT feels the methods used by New York to recalibrate their landings are appropriate; and the PDT does have a much higher comfort level using landings rather than number of trips to scale their historic landings. However, the PDT does have a couple of cautions and caveats.

The PDT notes that an increase in menhaden abundance in New York waters may also contribute to higher landings reported in 2013 and 2016. Rather than solely an increase in reporting, there could also be an increase in the abundance of menhaden that is showing higher landings values in 2013 through 2016. Also, under the current timeline there is no time to review proposals from other states; which seek to recalibrate their landings. Finally, assumptions must be made about how these recalibrated landings are divided by gear type;

and this is specifically for that fleet capacity option, since this information is not provided by the state. With that I'll take any questions.

CHAIRMAN BALLOU: And again, just as I said earlier, we're going to take this up for discussion and potential decision shortly; but we're not there yet. Any questions for Megan on the PDTs review of the New York proposal?

ADVISORY PANEL REPORT

CHAIRMAN BALLOU: Seeing no hands; we're on to the last presentation, and that is the AP report. Jeff Kaelin is going to provide that. You can find it in your meeting materials at Pages 402 through 404. Jeff.

MR. JEFF KAELIN: Good afternoon, members of the Board. This report is in two parts, and I guess I'm only going to provide the report on the amendment right now. You have some slides. We'll go off the slides, no point in me reading the entire document. On Reference Points, we had a call on June 26 on this. We had pretty good turnout at 6, 9, 12 AP members.

We had a quorum. We didn't take any votes; we just simply recorded or made sure everybody's perspective was recorded. The AP recommended that stock projections be developed for the interim reference point options; to be able to understand how they translate to a TAC. I think that the proposal that we had earlier from Katie was really helpful in trying to understand this better, Katie.

I guess I just ask Bob, I'm not allowed to ask questions publically, but it would be nice to have those slides; because I think for me anyway, it helps me understand the differences; why you can't make projections in the same context of the single-species reference points. I think you've addressed this, and that's really very helpful.

It would be helpful to get the public to understand the same thing. I'm not sure how the document would be changed to do that. They also recommend that the methods used by the BERP Workgroup to calculate the interim reference points be provided. I think again your presentation covered that point.

The BERP memo on interim reference points was included in the briefing materials. Personally I found the slides even more helpful than the memo. That is what that one says. TAC and Allocation Methods, the AP supported wider options for the Indecision Clause; recommending an Option D be added, which continues the management plan in all of its elements from the previous year.

This option was added to the document as Option D. One AP member asked for further clarification on Option C in the indecision clause, specifically how the episodic set aside is handled. There was some clarifying language provided in the discussion in the document since the end of June.

Another member commented the fleet capacity option may create a race to fish. On other commercial management measures, one AP member asked that the language describing the quota reconciliation be clarified. That was addressed by the PDT also in the document. One AP member recommended a greater variety of options be added for the set aside programs for the episodic events and small-scale fishery and incidental-catch options; a half a percent or 1 percent or 1.5 percent, 2 percent, 2.5 percent and 3 percent and so forth. I think the concern specifically on the episodic is that you've only got a 1 and a 3 percent and a status quo option now. That has not yet been addressed, and to make that change would take a Board motion. One AP member recommended that the redistribution of quota from various programs occur on the same date. I think the issue was raised because some of the return to the fisheries would occur after some

of the state's fisheries are already closed. I'm not sure how that issue will be addressed.

Two AP members asked that a research-set-aside program be established in Draft Amendment 3; with options that allow for a set aside of up to 3 percent. This is not currently in the document either. Another AP member recommended that the fishing year start on May 1 rather than January 1; so that redistributed quota from the previous year can be used in the early spring.

Editorial comment, I think the assessment considers March 1 as the beginning of the assessment time period, not January 1. I think maybe there is room for discussion about whether the fishing year could be changed to better match these returns to the fishery; so that they could be utilized. That was it, I think. I would be very happy to take any questions.

CHAIRMAN BALLOU: I know Jeff is open to take questions. It's nice to see that several of the AP recommendations have already been incorporated into the amendment; and I did take careful notes as to which have not yet been incorporated, so we can bring those back up. I certainly plan to bring those back before the Board when we get to those parts of the discussion.

That said, are there any questions for Jeff regarding his presentation on the AP report? Again, I want to commend the AP and Jeff's leadership with the AP for really doing a great job tracking this issue thoroughly. There has been great interaction with the PDT, with Megan, and I have been listening in on many of the calls. Good work there.

Okay so with that I think we are now ready to roll up our sleeves and go at it. It is time to turn to the draft amendment and consider any changes that Board members may wish to propose. The overall thrust of our task today is to consider winnowing down the numerous

options and sub-options currently set forth in the draft document; and potentially adding any new or modified options recommended by the Board.

I would like to address the amendment in sort of four chunks; I just think this would be helpful to do it in this way. First Reference Points, then Allocation, third the other substantive provisions in the document that involve options; basically everything else that Megan covered in her presentation. We'll kind of group those together as our third chunk.

Then finally, any overall comments or suggestions, including any editorial issues; we'll sort of wrap on that note. As we go through each of those four segments, I will seek from the Board any recommendations for changes. It will be an open floor for Board members to offer whatever you would like to offer.

What we're going to do is just begin by compiling them. Max has agreed to do his best to capture the suggestions that are offered under each chunk; in distilled bullet form. He'll just try to put something up on the board that will remind us what was suggested. We'll pretty much develop a laundry list of issues. We'll see how many there are. Then once we get them all up, we'll go back and sort of walk through them; and find out whether we can accept some or all by consent without objection, or whether we need to peel off some or all for discussion and debate. To the extent that there are differences of opinion among Board members that would be the time for motions and votes. That is how I plan to proceed. We'll see how much we can sort of do by consent; and then we'll see where we need to vote and resolve issues via the voting process. The upshot is that we're only planning to vote on issues and recommendations relating to those issues for which there are differences of opinion among Board members.

Then at the end there will be a final vote on the document as a whole. That is how I plan to proceed today. We'll see how this goes. I think what I would like to suggest is Megan, if you could bring back up your slide that addressed Reference Points. We'll start there. I would open the floor now to any comments, suggested changes, particularly in the form of suggested changes.

We're really not here commenting on what we like or don't like. That is really for a decision in November. What we're here to offer are suggested modifications to the options as presented currently in the draft amendment; which of course will be taken out for public comment. On the issues of reference points, would any Board member like to make any suggestions for changing the document from where it currently stands or from what it currently says? Rob O'Reilly.

MR. O'REILLY: I have to ask a question, Mr. Chairman. The question is from practicality sake, from what I've heard earlier today and what I've read previously; which goes back a few years now. Option B is the one that seems to have more traction with the Technical Working Group and everyone else.

At the same time I'm aware that there has been an investigation of the Pikitch et al. and other approaches such as 75 percent unfished. I'm wondering with my question, today are we going to wait until November to really be decisive; or is there information from the PDT, the Technical Working Group, and the BERP that thinks that we need to keep going with these other forms that are reference points.

From what I could tell the MICE approach is something that the BERP Working Group thinks that they are sort of on a par with; maybe a little bit different, but the same approach. At the same time, I think it's become pretty clear that we've been waiting for these biological and ecological reference points since 2010.

I remember when there was quite a bit of excitement, really at the Board level about going forward with that approach. We're now looking at maybe two years before we have them; and I'm just wondering, do we really want to go out to the public if the practicality is from those working in the Biological Ecological Reference Point group is that Option B is really where they intend that things would be. It's a question, a long one.

CHAIRMAN BALLOU: I realize I had my microphone on. Sorry about that. My understanding is there is no specific recommendation on the table from the BERP Working Group or from staff regarding the issue that you just asked about. There is certainly plenty of perspective that's been offered on the issues through the reports and presentations we've heard today; but no specific recommendation. It is a policy decision by the Board as to whether the Board wishes to move forward with the options as presented; or not, or some variation on that.

MR. O'REILLY: I certainly want to hear from other Board members, and I certainly think there are some that probably don't want to just have one option going out. That's what I'm thinking. But at the same time, at the least could there be some attempt to exclude some of these before we go out; instead of to have five different ones going out?

CHAIRMAN BALLOU: Again, what I had hoped we'd do is if you have a specific proposal; and I can discern what you just offered, Rob, so I'll I think speak for you. That is; potentially reduce the number of options being currently offered under the Reference Point section of the document. I'm not sure if it is reduce down to one or zero, or something else. But I hear that from you and I also hear your interest in hearing from other Board members. That is the issue that is on the floor for discussion right now. Dr. Rhodes.

DR. RHODES: Well I'll throw it out. Looking at the different options, to me the hockey stick covers most of what Option D and E are already. It's a very similar approach. You're getting from a 0.4, and the hockey stick goes up to a 1 instead of a 0.75. But I think you would get that same coverage, you would give that sliding scale that we look at it.

I agree B may be where we come from, but if we could drop D and E, I believe C encompasses nearly everything that is in D and E. I may be wrong, but I think we could drop it down to three options easily; and we wouldn't remove anything from the document doing that.

CHAIRMAN BALLOU: Just a follow out on my suggested track. If Max could put up on the board, if he hasn't already, or at least capture this and we can put it back up later; a proposal to drop Options D and E is the first suggestion that I've heard. John Clark.

MR. CLARK: I was going to also suggest dropping Options; but I certainly don't think after seeing what the BERP was working on; the Pikitch seemed like an option that was really not favored at all. I would prefer we go with A, B, and E; if we're going to include one of these ad hoc ecological approaches at this point. I would keep in A, which is status quo, B, which we definitely want in there; because it's the BERP Working Group options. If we're going to include an ad hoc one, I would rather see E kept in there.

CHAIRMAN BALLOU: Thank you, we'll take note of that and we'll come back to these after we've given everyone a chance to comment. John McMurray.

MR. McMURRAY: I'm a little bit confused now about the difference between C, D, and E. The way I'm looking at it is they are very different options; and that including C and taking out D and E would not encompass the intent and the spirit of D and E. Megan, can you explain a little

bit about the difference between those three; so we're clear before we start taking things out?

MS. WARE: Sure, I'll start with E; because I think that's close to what we're familiar with. That is a target and a threshold; so it works how we have a target and a threshold now. It's just different values. Right now we're between that target and threshold, so we're not overfishing; but if we hit that threshold then that would trigger management action.

Our goal is to be closer to the target. That's Option E. Option D just has a threshold. There is just one value that you cannot, I guess in fishing mortality you cannot exceed; and then if you do then that would trigger action. Right now we are above that value. That would trigger action for the Board to reduce fishing mortality. No? Then Option C, this is a hockey-stick control rule. You're decreasing your fishing mortality as your abundance decreases. You want to be where your abundance intersects that hockey-stick control rule. There is kind of a discreet point; where you want to be on that line and that is your target to achieve that. But then you have a threshold that also you do not want to ever be above. Does that help explain?

MR. McMURRAY: Yes it does, but just for clarification, Option E is essentially what Option 2D was in the prior version of the PID.

MS. WARE: I believe so. It's basically building off our current Option D; so instead of just a 75 percent biomass you add in that 40 percent unfished biomass, so you have a target and a threshold.

CHAIRMAN BALLOU: Other suggestions from the Board. Nicola.

MS. MESERVE: I would agree with John about removing Option C; if we were going to take something out. I'm concerned about the

requirement for a moratorium when you hit the threshold. That's the only option that imposes a moratorium, and that might not be necessary to rebuild a stock when it hits the threshold.

Separately, while we're on reference points, I did want to re-raise the point earlier from Allison, I believe, about including some of the concerns about the interim reference points that were in the staff memo; incorporating those into the document as well.

CHAIRMAN BALLOU: Thank you for that reminder, good point. Are there other Board suggestions? What I'm thinking is that we might need to go through this one by one; because I've heard different configurations. Robert Boyles.

MR. ROBERT H. BOYLES, JR.: May I suggest, what I found very helpful was the staff memo. There is a lot in here; it's a very, very dense document. I appreciate Megan's effort to go through and ask the Board specific questions about Draft Amendment 3. I might suggest maybe we frame our discussions around those questions, perhaps.

CHAIRMAN BALLOU: You know that's an excellent idea; and it's exactly where we're going to go after we deal with the reference points, because here memo only addresses allocation issues. We don't, again to kind of reiterate what I had said earlier. We don't have any staff recommendations or specific BERP Working Group recommendations per se regarding these reference points.

It's really a Board policy clause, and I'm looking to the Board now for consensus, or if it doesn't exist, a motion, regarding how to best move forward with the draft addendum with regard to the reference points; all five options or some version thereof, which would likely be lesser number of options. Did I see a hand up? David Borden.

MR. DAVID V.D. BORDEN: Just a suggestion, since you've got two recommendations to drop Option C; may I suggest we start with that. If we can get a consensus on that then you can look at the other aspects that are up there.

CHAIRMAN BALLOU: Nice idea. Let's see, Allison I see your hand up, so before I ask anything further let me see what you have to say. Allison.

MS. COLDEN: I just wanted to offer the comment that in reviewing some of the input that the Board received during the PID comment period; it seemed to me as though there was strong public support for a wide variety of these options. Given that we now have additional information.

In terms of what the interim reference points would look like, due to the BERPS work in putting together what those interim ERPs would look like, I think it might be prudent to now present all of the options back to the public again; so that they have a better idea of what each of those options entails, as opposed to when they were more conceptual in the PID comment period.

CHAIRMAN BALLOU: Ritchie.

MR. G. RITCHIE WHITE: Yes I tend to agree with Allison. Let's put it out to the public. I don't believe this isn't where this document is hugely complicated. Leave them all in for the public to comment.

CHAIRMAN BALLOU: Given that there's been differences of opinion expressed; and John I'll go to you for a second bite, and I'll go to anyone else who hasn't yet had a chance to offer comment. My inclination now is to entertain a motion; and it could be from the side who favors keeping all five in or from a side that favors removing at least one or more options.

We'll subject it to further discussion and a vote. I think that's the only way to reconcile we don't have consent. It looks like we're headed for a motion and a vote. But before I entertain a motion, John did you have another question or suggestion?

MR. McMURRAY: Well, just more of a comment, Mr. Chairman if I could. I don't know if I'm saying anything different than Ritchie said. Having read the staff memo, I agree there are probably too many options for allocation.

But given the large number of public comments and public support for this general rule; that it looks like some people want to try and take out. I am uncomfortable taking out any alternative now, any option now. I think the idea is to have a full range for the public to comment on. I think to maintain that full range we should probably avoid taking any of them out now.

CHAIRMAN BALLOU: With that I would entertain a motion. Dr. Duval, I'm sorry. I'm not trying to rush things too much; but trying to move things along. But go ahead.

DR. DUVAL: Just very quickly. I think, and building on what both Allison and Nicola said in terms of like items to include from that staff memo. I'm also thinking the graph that Katie had. She showed all the different reference points on that chart. I think that is going to be really helpful as well; as opposed to include along with the table that has reference points already in here.

CHAIRMAN BALLOU: It sounds like a given that if the Board were to vote in support of keeping all the options in, there would be further information added; mainly that which was provided earlier through the staff presentations and in the staff documents. Following up on, I think it was Allison's initial suggestion and Nicola; just echoing it. That is embedded in the notion of keeping all five options in, as I see it. With that I would entertain a motion one way

or the other. Who would like to make it? Ritchie.

MR. WHITE: Motion to maintain all options.

CHAIRMAN BALLOU: Is there a second; seconded by John McMurray. Moved by Ritchie White and seconded by John McMurray, to retain all five options for reference points in Draft Amendment 3. I'm going to offer an opportunity for anyone from the public who would like to comment on the motion to do so now.

If you'd like to, please raise your hand and let me know. I'm going to offer periodic opportunities for public input as we kind of move through these issues. I don't see any hands up; so we're back to the Board. Is there any further discussion by the Board on the motion? Yes, David.

MR. BUSH: I think our goal here again is to whittle this down some. This is confusing for us sitting here who have been steeped in it. It would probably be beneficial to narrow these down. I could go more into depth as to why; but I don't think it would be an unsafe move for us to get rid of a few of these options. I think explaining the ones that we've got and offer something in different areas of the spectrum would be beneficial. If you would be willing to accept it, I would offer a substitute motion.

CHAIRMAN BALLOU: Go ahead.

MR. BUSH: I would move that we remove Option C and D from consideration from this document.

CHAIRMAN BALLOU: Is there a second, seconded by John Clark. The motion is a substitute motion to remove Options C and D. Did I get that correct, David?

MR. BUSH: Yes, thank you.

CHAIRMAN BALLOU: Discussion on the substitute motion. Emerson.

MR. HASBROUCK: I'm a little confused here, and I'm hoping that the Chair or perhaps Megan can offer some clarity; relative to the issue behind this motion. I know that the staff memo that we have regarding Amendment 3, doesn't say anything about reference points. However, Megan I think during your presentation you had mentioned that.

I don't know if it was staff or the Work Group or the TAC said that we should use single-species reference points; while menhaden specific reference points are developed. I'm paraphrasing what you said. But then I also know that previously, our May meeting or perhaps our February meeting there was a memo from staff reviewing the Lenfest options.

That memo specifically said that they are not appropriate. I don't know why we would want to go out to public comment, with something that is not appropriate. But again, I know before you said that the staff memo doesn't say anything about that. Could you just offer some clarification in terms of what you said during your presentation on this issue; and then what a previous either staff or Work Group memo had said?

MS. WARE: Yes you're correct. There is no staff recommendation on this issue. I believe it was the BERP Work Group that has been commenting on the Lenfest Report; so they're the ones that both reviewed the Lenfest and the Hilborn paper. You know I think overall there are varied opinions on how to move forward with forage fish management; and it's going to be a policy decision by the Board here. I think it's up to you guys how you want to proceed.

MR. BUSH: I guess to kind of justify the reason for my suggestion. I'm not really even comfortable with leaving E in there, because I

don't think we've addressed other issues such as any changes that density dependent actions might take place; if we try to change the biomass of this stock in any one direction. But I do understand that there is a desire for options.

But given that this fishery is not overfished, overfishing is not occurring; and we had to fight tooth and nail last year just to get a 6 percent increase. I think we're safe until we get these new reference points out; ones that will be correct, ones that everyone seems to be okay with, even though they don't know what they are yet. It will make this a lot easier for the public to get through the document; and get to the stuff that is probably going to be even a little more controversial than this alone.

CHAIRMAN BALLOU: Further discussion on the substitute motion. Ritchie.

MR. WHITE: The comment everybody is okay with. We don't know if everybody is okay until we put it out to the public. I think that's what we need to hear. If these other options are not really options that will work, we'll hear that from the public. But I think to make these decisions at this point; November is when we're going to make these decisions. Put it out to the public. Let them comment. Then we can use that information.

MR. CLARK: I disagree with Ritchie. I think we've had plenty of input; in particular Option C is something I don't even think should be put out for consideration. We've had a lot of feedback that this is not an appropriate reference point for this species. As Nicola pointed out, it would lead us to a moratorium. We're very close to that point right now.

Option D also, with just having that target there, is also one that could lead us to a moratorium; at a time where the stock is not overfished and overfishing is not occurring. It just seems like there is no reason to have them there. We're the body, we evaluate the

science. I don't see why we would put these options out to the public. I don't see, even if they were favored by the public, why we would vote for them here in a final amendment.

CHAIRMAN BALLOU: Good discussion. Eric Reid.

MR. REID: I agree with John. I'll leave it at that.

CHAIRMAN BALLOU: Allison.

MS. COLDEN: I just wanted to sort of follow up and maybe reframe Megan's comment; and the way that I see it is that the fact that there is no specific staff recommendation and there are actually different perspectives on how to implement, maybe some of these interim reference points.

To me point to the fact that as Megan said, it's going to be a policy decision that comes down to the Board; and for that reason I think it would be extremely valuable to have the opportunity to hear from the stakeholders on this. Just to reiterate my point that I would appreciate seeing all of them go out to public comment.

CHAIRMAN BALLOU: I think we've had good discussion on this. I think I'm ready to call for a vote. I'll allow a one minute caucus. Just to be clear, this is on the substitute motion; which would involve removing Options C and D from the document, leaving three options A, B, and E, one minute caucus. Okay I'm going to call the vote.

I don't hear any requests for a roll call, so I'll do it by a show of hands. **All in favor of the substitute motion please raise your hand. Those opposed; abstentions, null votes. The motion fails 9 to 9.** This is going to be a fun day. further discussion on the main motion? **We're back to the main motion; Is the Board ready for the question? All in favor of the main motion; which is to keep all five options**

in the amendment, please raise your hand. Hands down, we've got the number. Opposed, I didn't ask, all 18 voted. The final tally is 12 to 6 in favor; so the motion prevails and we will keep all five options in the document moving forward. They will be supplemented with the information provided earlier per the Board's request.

I think we have completed one part of this exercise; and we're now on to the next part, which is Quota Allocation. I think at this time I want to pick up on Robert Boyle's suggestion that we refer the Board to Megan's memo, the staff memo to the Board; which I think does a very good job raising a number of issues and offering a number of recommendations.

That memo is in your supplemental material. Megan, if you don't mind do you want to walk through that quickly; and just kind of briefly brief the Board on your memo and its recommendations. Then I would like to suggest we take those up first; and then we'll move on to other recommendations that others may have. Megan.

MS. WARE: The first question I had posed to the Board is if you would like to keep all three fixed minimum sub-options. Right now we have a 2 percent fixed minimum, a 1 percent fixed minimum and a half percent fixed minimum. The intent of this management alternative is to provide quota to each jurisdiction; so that to some degree everyone can participate in the menhaden fishery.

The 2 percent fixed minimum option provides the greatest minimum level of quota; and as a result it results in growth opportunities for many states. However, 8.8 million pounds, which is 2 percent of our current TAC is well in excess of what some states have landed annually; and as a result there are significant allocation reductions for New Jersey and Virginia. The half percent and 1 percent options provide more moderate amounts of quota.

They still provide growth opportunities for many states, with smaller impacts to New Jersey and Virginia. As a result staff recommends that 2 percent fixed minimum option is removed.

CHAIRMAN BALLOU: Let's pause there and take any questions, comments or recommendations. Robert, you had your hand up?

MR. BOYLES: For a motion, Mr. Chairman when you're ready.

CHAIRMAN BALLOU: Let's first of all see if there are any questions for Megan on her recommendation. John.

MR. CLARK: To that question. I'm sorry if I missed it, Megan. Under the fixed minimum allocation, would that get rid of the bycatch allowances that we currently have?

MS. WARE: That's kind of up to you guys. It is under a different issue, so it would likely be under a different motion. But if states feel that this option covers their needs then there may not be a need for that option. But we can always include it if you would like.

CHAIRMAN BALLOU: Any further questions? Rob O'Reilly.

MR. O'REILLY: Megan, I guess I would ask what this would mean, in terms of the current status of the fisheries. For example, whether it was 2 percent or 1 percent or half a percent, our information is that there would be a lot of quota that wouldn't be used. I think I'll read from one thing we put together that just the 1 percent, for example, the 10 states that would receive quota would be over 46 million pounds.

However, the highest annual landings for each state during the 2012 through 2016 time period equal total landing of 4,170,277 pounds. The idea is even if there was a doubling of that there would still be quota that would be

unused; or perhaps banked might be a good word for that. My second comment is that I realize with American eel that the ASMFC did establish a system for the quotas that aren't quite implemented yet, but there could be a 2 percent allotment to those states that had no or very small amounts of quota.

But that was done during the quota-making process, during the whole Addendum III and spilled over after that. I think with this situation, Amendment 2 has already provided an allocation, so now this is in a sense not foreseen as probably anything other than maybe a precedent; that I can see of.

Megan, I'm back to you to ask, does that sound right that even if there were percentages provided to the states, given the current status of our fisheries, those 10 states. They wouldn't really be able to utilize that quota; even if they doubled in most cases. But there would be a bank of quota, which perhaps is transferrable. Does that sound reasonable?

MS. WARE: I think that's a policy question for the Board. I'm not sure that's a staff question.

CHAIRMAN BALLOU: Yes, I'll leave it at that. I mean clearly a state can forego. Well, we're talking about a specific proposal to eliminate the 2 percent option under fixed minimums. I think Rob you're speaking, as I understand it, broadly to the category of fixed minimums; what it means for states that don't currently harvest at the levels they would be allocated. My response is the document provides for the opportunity for a state to forego its allocation if it so chooses; and of course it holds open the opportunity for a state to develop a fishery pursuant to that quota. But I want to stay focused, and I do see your hand up, Rob.

I'll give you a follow. But I do want to stay focused on the specific proposal, which is not on fixed minimums as a topic. We can get there, but on the specific proposal to eliminate

the 2 percent option under the three that currently are under fixed minimums. Rob.

MR. O'REILLY: Yes, I'm hovering. I agree with the 2 percent; but I also wanted to make the point that the other percentages are also quite a drastic way to do a reallocation. I'll leave it at that; but if there are questions I can answer them.

CHAIRMAN BALLOU: Dennis Abbott.

MR. DENNIS ABBOTT: If we were to allow each state a fixed quota; some small percentage. Would there then be a need for an episodic event portion of our plan?

MS. WARE: Again, it's going to be a question for the Board. If the New England states feel that 1 percent covers them, there may not be a need for the episodic events program. But it could still be added if you want. It's up to you guys.

CHAIRMAN BALLOU: Go ahead, Dennis.

MR. ABBOTT: On a separate issue, we're just talking about other things about not using the quota; as Rob was alluding to. We're developing a shrimp plan right now where we possibly could be allocating percentages to the three states of Maine, New Hampshire and Massachusetts, with a provision at a certain date possibly to turn that quota over to another state; the unused portion of it. We're working on that in another plan.

CHAIRMAN BALLOU: I'm going to go to David Borden; and then I'm going to ask for a motion, because it sounds like we're starting to get into opinions, which is fine. But I think it would be better to do that pursuant to a motion. David.

MR. BORDEN: I agree with the point that John Clark made. I'd just note, I mean there have been a couple of points here around the table about there is a linkage between what we

decide on this issue and what the options are on other management issues. I mean this is a public hearing document. I think what we should be is fairly careful about making sure that we don't preclude a full range of options.

Depending upon what we do with this issue of allocation, it's going to have ramifications for the other options that somebody else is going to want to consider down the road. The second point I would make on this, because of the point that Rob O'Reilly made, I think he made a good point, is that if we allocate the full percent to every single state, I can guarantee you that most states won't use those allocations.

I think we should change the language in this; so a state has to request it. There are states that do not want any kind of directed fishery. I think if you turn it around so the state has to meet with their own constituents, and then put in a request; if it's 2 percent that's fine. But they should be responsible for tracking that. The third recommendation would be if you want to simplify this I would just have one option; which basically would be an option of a percent in the range of 0.5 to 2. Then let the public comment on that and then the Board could decide anywhere between that range.

CHAIRMAN BALLOU: Okay that's an interesting thought. I'll go to Robert Boyles now.

MR. BOYLES: I would make a motion that we eliminate the 2 percent fixed minimum from the draft amendment. I make the motion from the standpoint of the note; again, Megan and staff excellent points. By my count nine states it looks like. This would provide a minimum well in excess of nine states of what we're currently harvesting. As a state that has no harvest or no interest in allowing this, I would make the motion just to simplify it; and also in the spirit of well, I'll keep it there. I just make the motion to remove 2 percent.

CHAIRMAN BALLOU: Moved by Robert Boyles and seconded by Rachel Dean; to remove the 2 percent sub-option under the fixed minimum category; discussion on the motion. Rob.

MR. O'REILLY: I certainly support that; but at the same time I would ask that when the other items go out, whether it be what David Borden said, some range or whether it be the 1 percent and the half percent that there be an indication of how much poundage that is. I think that would be good. I think even in the PID that it seemed sort of innocuous, 4 million pounds, until you realized okay we're talking about 10 states so it's not 4 million pounds.

Some of these numbers are pretty high; and I would just make a request that perhaps there could be a little information as to what's involved there beyond the percentages, but the amount that's going forward. Then leave it up to the Board in November to understand some of the points I made earlier; even with a half a percent on what that means, and what we're really trying to accomplish here.

CHAIRMAN BALLOU: Megan did point out to me that the document does currently offer some clarification on the very issues that you raise; in terms of what it means to be talking about a 0.5 percent minimum, 1 percent minimum. It's there, and of course it's also there in her memo, which does I think an awesome job of taking the percentages and translating it into pounds, but of course using the current TAC as the basis for that.

It's hard to think about how we would express that in a public document; because we don't know what the TAC will be in 2017. But we can certainly reference our current TAC and what these would mean. Those tables are in Megan's memo; again, the motion before the Board, Emerson.

MR. HASBROUCK: Based on the fact that if we choose something here, in terms of allocations

to states, that's going to have an impact on subsequent things in the document; episodic events and some of the other things in there as well. I would like to hear public comment to include the 2 percent.

I like Dave's suggestion that maybe when we have our subsequent Menhaden meeting to resolve all this, it may be up to 2 percent on the request of the state. I would like to hear what the public input is on this, what the public comment is on this. In terms of, I know we're trying to pare things down here, but including 2 percent in this section is going to take a lot less time and effort in the presentation at the public hearings than the discussion about Options C and D that we just included on the reference points. I would vote against this motion. I would like to see what the public comment is for 2 percent. I don't think it complicates things very much.

CHAIRMAN BALLOU: Eric Reid.

MR. REID: I agree with what everybody is saying. But I think 2 percent should stay in, where we refine the language to say up to 2 percent; and I like David's idea about having it be up to 2 percent. I mean I certainly realize that not every state is going to want 2 percent. But I'm sure I could identify a couple of states that would prefer to have 2 percent. If we take this option and shoot this out of the gate right now, my thoughts on other things like possibly we're talking about what to do if states got 2 percent, if they got it, and how to address the unused portion.

Then you are talking about adjusting the fishing year and a slew of other things that are going to weigh this document down way more than in just including this one item. I would strongly suggest we let the public comment on this. Most of the work is already done on what that looks like. But I think to take 2 percent off the table right now would make this document a lot thicker than it needs to be.

CHAIRMAN BALLOU: Pat Keliher.

MR. KELIHER: I just want to echo what Emerson and Eric mentioned. I think for the same reasons people wanted to be inclusive of the reference points, I think we should be inclusive here. I do appreciate Dave Borden's comments about maybe a tweak in the language that says up to 2 percent; just so it's clear.

CHAIRMAN BALLOU: Doug Brady.

MR. BRADY: Is there an option just to take what Mr. Borden says and just say, okay we have an option of one, of going from half a percent to 2 percent; states have to request it, and that's just one option. Then the other option is not to do that; instead of have the public try to comment on a half, a one and a two.

CHAIRMAN BALLOU: I'm going to ask Megan to respond. I think she's been thinking these issues through so much that she might be able to offer the best perspective to your comment, Doug.

MS. WARE: I mean I think we could change it that a fixed minimum option is taken, and choose up to 2 percent; but they could request less than that. I mean I guess if states think that they would choose less than 2 percent, then that is something that we can pursue. But I am not sure. I just ask you guys to think if that meets the goals and objectives of the amendment.

CHAIRMAN BALLOU: I had David Borden for a second crack. I'll go to him and then Rachel and then Robert.

MR. BORDEN: I'm obviously opposed to the motion, and stand by my earlier comments. But I just remind everybody that when we get into the meat of this addendum and we start getting into all these bycatch allowance and what's going to be required for states to administer

those bycatch amounts. It may be a lot simpler if the states had a fixed allocation that they work with. Then they factored that in, and we could eliminate a lot of those other programs. I actually think that these fixed percentages will give us down the road the ability to simplify the document; and simplify the final decision.

MS. RACHEL DEAN: I was just going to say that if we were to make a substitute motion to say, up to 2 percent. It would essentially be leaving the document as it is written. I think we would just be rewording it.

CHAIRMAN BALLOU: Robert.

MR. BOYLES: I would refer the Board to Page 30; the objectives of the amendment. Specifically Bullet Number 4, which is develop a management program which ensures fair and equitable access to the fishery for all regions and gear types. I can't square a 2 percent fixed minimum with fair and equitable access that's going to provide huge shifts in this.

I think this is, just in an effort to simplify this, I for one David, would very much like to get rid of the bycatch allowance through this amendment. I for one would very much like to get rid of the episodic events provision through this amendment. I think just in the effort of trying to simplify this, we're talking about a minimum of upwards of 0.8 million pounds for every state on the Atlantic coast. Most of us don't take that much. Do we really want to hear what the public has to say about that option? I would urge us to vote in favor of the motion.

CHAIRMAN BALLOU: I want to call a vote very soon, but I'll take a few additional comments. Nicola.

MS. MESERVE: I just wanted to draw attention to the fact that the 2 percent applies not just to 2 percent of the total TAC to each state as a fixed minimum. But there is also the option for

disposition first; so bait could be allocated with a 2 percent minimum of the bait landings to each state as well on one of these options.

If you look at Megan's memo, Page 13, the pounds that show up in that table are a lot more realistic for the size of some state's fisheries. Two percent of the total TAC to all states might not be necessary; but when you're looking at just the bait landings, it might make more sense. I think I'm leaning towards keeping 2 percent in for that reason.

CHAIRMAN BALLOU: Are there any other comments before I call the vote? Seeing no hands; 30 second caucus, and then we'll vote on this motion. Okay I'm going to call the vote. **All in favor of the motion to eliminate the 2 percent fixed minimum from the Draft Amendment, please raise your hand. Hands down; all opposed, abstentions, 2. The motion fails 8 to 8 to 2.** Let's order pizza now. Toni has her hand up.

MS. KERNS: I don't want to predict the direction that the Board is going. But if the Board continues to not remove things from this document for public comment, I am very worried about how Megan is supposed to take the document out as it currently reads. It has so many options and it is so complicated. I don't know how she'll be able to explain the document to the public. I just hope that the Board does think about that as you move forward; and consider these decisions.

CHAIRMAN BALLOU: What I would like to do is instead of moving to the next issue in Megan's memo, stay on the topic of fixed minimums; because I don't want to have to come back to this later and revisit the same issues that we've already just discussed. Does anyone on the Board under the broad category of fixed minimums; and as I think Nicola said well, it pertains to more than one part of the options.

It's either straight out, fixed minimums, three options under that; half a percent, 1 percent, 2 percent or it can be applied to a bait dispositional allocation. There are a couple of different ways at least that it can be applied. I know there had been some suggestions for perhaps reworking the language or perhaps reworking this section. If anyone has any suggestions for doing that now would be the time to offer them; otherwise we'll move on to the next issue. David.

MR. BORDEN: Let me reiterate the comment I made before about the need to make states basically commit to the program by opting into the program. I think that's an important component if we want to avoid the situation that Rob O'Reilly is talking about; where under the current proposal states basically get the allocation.

There are states around this table that do not want menhaden fisheries in their water. I mean otherwise they would have had them in the past. I think it would be desirable to have states basically opt into the program if they want that allocation. I would hope we could do that by consensus.

CHAIRMAN BALLOU: Right now there is an opt-out clause; and I hear a suggestion that we should change that to an opt-in. Is there discussion on that suggestion? Right now the way it reads is every state, if this were to go forward and be adopted by the Board, and of course we also have to explain this to the public in this way.

Each state would be allocated a certain amount; and a state could opt out and opt not to utilize that. But what I hear being suggested is that a better approach would be to allow each state the opportunity to opt in and obtain that amount. Seems like a subtle distinction, but let's call it an important one for the sake of discussion. Ritchie.

MR. WHITE: Well, just to understand it, a state would maintain that allocation going forward; so it would be an annual event to opt out. Is that what you're saying, Dave? I mean opt in, I'm sorry.

MR. BORDEN: Yes.

MR. WHITE: Because that makes a difference, because with changing environmental conditions, what is happening today may not be happening 10 or 15 years from now. New Hampshire is not having much of a harvest now, if any. But I don't want to give something up for 10 years from now; so I want that ability. We're not going to use it now, so other states ought to be able to use allocation we get. But I want to have the chance in the future if this fishery changes and we can harvest.

CHAIRMAN BALLOU: I do think that is the intent is to replace the opt-out clause with an opt-in clause; and it would be done on an annual basis. Rachel.

MS. DEAN: I just wanted to ask for clarification. If the 2 percent was distributed amongst the states, could a state then choose not to transfer their quota?

MS. WARE: How the document is currently written, not the opt-in provision but the opt-out provision, everyone would get 2 percent; and then if a state doesn't want that 2 percent they can choose to forego it completely or they can keep 10,000 pounds for bycatch. There is nothing requiring a state to opt out, it's a choice a state makes. If a state opts out and has no quota, then they can't transfer because they don't have any quota. If they opt in and they have that 2 percent, they could transfer; depending on what option is chosen in that transfer section.

MS. DEAN: Just to follow up. I think you answered my question, Megan, but I just want to clarify and make sure that I summarize that

correctly. You're saying that if a state does choose to opt in, they can then choose not to transfer their quota to another state.

MS. WARE: Yes. There is nothing that requires a state to transfer quota. It has to be done by two states under mutual agreement.

CHAIRMAN BALLOU: Roy Miller.

MR. ROY W. MILLER: As I look down at some of the tables in Megan's documents, there are obviously states that would be eligible for quota allocation that have no commercial fisheries. As a specific example I point to my colleagues in Pennsylvania. They do not have a commercial fishery, never have; yet they would have an allocation.

Now what is the purpose of that? You know in jest back and forth with them I said hey, how about lending us your allocation; and they said, "What have you got to offer?" Is that the road we want to go down, Mr. Chairman? It just seems nonsensical.

CHAIRMAN BALLOU: That's the question to the Board, not really to me. It really is up to the Board whether they want to go out with this option, and if so what version of it. That's the only answer I can give you, Roy, because I understand your point. But I also understand that a state can, based on the discussion we've just had, opt in or opt out.

I get your point that states like Pennsylvania and New Hampshire and South Carolina and Georgia, just to name four, would be afforded an up-front opportunity to a portion of the quota that is much larger than zero; which is where they currently are. Kyle.

MR. KYLE SCHICK: I think if we have an opt in or an opt out, in any case I think that states that don't traditionally have a menhaden fishery, and they want to get into at half a percent or 1 percent, maybe if it's not used then it's required

that it goes back into a bank that gets divided up; so it's a situation where we're trying to develop fisheries where there aren't fisheries, and then people are trying to bargain. What can I get for my quota that I didn't need, nor did I want, but I have anyway? I think we just need to look at that situation too. Assigning a quota to somebody that doesn't need a quota is ridiculous; and that's what we're doing here.

CHAIRMAN BALLOU: All right here's what I'm going to suggest. We need a motion, because we're actually debating an issue that we haven't really put up on the board yet. David, do you want to make a motion? I think if I understand your suggestion, **to replace the opt-out clause with an opt-in clause?** If I'm not mistaken that is the heart of what we're talking about and that's your suggestion. Do you want to make that motion?

MR. BORDEN: I'll accept your motion, Mr. Chairman. I make that motion, Mr. Chairman.

CHAIRMAN BALLOU: Is there a second to that motion? Seconded by Pat Keliher; so moved by David Borden and seconded by Pat Keliher to replace the current, obviously retaining the 2 percent option, for all of the fixed minimums. Replace the opt-out clause with an opt-in clause to make it more incumbent upon each state to make an upfront decision as to whether they wish to utilize their quota allocation or not. It's not a de facto automatic allocation, but it would be one that a state would have to essentially express an interest in up front. Senator Miner.

SENATOR CRAIG A. MINER: By that motion then, if a state didn't opt in the first year, would they have the ability to opt in, to Ritchie's point in Year 2 or 3 or 4; and be assured that there would be a 2 percent allocation in Year 2 or 3 or 4? I think the distinction is that if I have to opt out, I own it until I opt out. If I don't have the ability unless I opt in, it belongs to somebody else; unless it's banked in limbo. That's my concern about this motion is that it seems to

me that by having to opt in, I would be foregoing that option; maybe indefinitely.

MS. WARE: How the current opt-out program works is that it's on an annual basis; so a state has to send a letter each year if they want to forego their quota. I suspect we would just change that language that a state sends a letter each year to opt in to the program.

SENATOR MINER: As a follow up then, if that was the case the total allocation would be reallocated annually; providing every state an opportunity to opt in for a minimum of 2 percent, or a maximum of 2 percent.

MS. WARE: Yes, even under the same TAC your allocations could be slightly different; if a state chooses to opt in one year and not opt in another year. That would slightly change what is allocated.

CHAIRMAN BALLOU: Dr. Rhodes.

DR. RHODES: Well, my question with that and it would come possibly to us, but definitely the episodic event states. In February you would have to make, or in the previous year you would have to make the decision whether you're opting in; not knowing what's going to be occurring in June, July or August. You would have to opt in every year; so I don't see the point of that. Unless we're still going to have an episodic event set aside; because it would make no sense for them not to opt in; I mean just my thought on it.

CHAIRMAN BALLOU: I get your point. Robert, you had your hand up?

MR. BOYLES: Yes sir, Mr. Chairman. I'm going to try one more time. Isn't the policy question we want guidance from the public, is should we slice this pie with a minimum size? I think we're getting into, do we eat the pie with a fork or a spoon or a knife? I think what we're looking for

from the public is, is this a way for us to manage to allocate this resource to the public?

I'm just really; really concerned we're getting way down in the weeds right now, before we hear from the public. Is this the proper way to allocate this public trust resource? Opt in, opt out, I think that's an operational decision we could probably make based on what we hear from the public. I'm afraid we're getting a little ahead of ourselves. Last gasp from me.

CHAIRMAN BALLOU: That's okay. I'll take one more comment and then I think we need to vote on this. David Bush.

MR. BUSH: I think Bob made a great point there. One other thing, I guess looking at it from the other side of the aisle. You do have a set up infrastructure, a community and an entire area that relies on this fishery. We don't have to name names, we know who they are. Every year they've got to figure out how many people are going to opt into this fishery; so they can determine how many people to lay off. That's something we might want to take into consideration as well.

CHAIRMAN BALLOU: Okay, tough issues. But that's what we're here for is to resolve these tough issues; so let's take a shot at it. I'll call 30 second caucus, and then we'll vote on this motion. Okay I'm going to call the question. **All in favor of the motion please raise your hand; hands down, all opposed please raise your hand, abstentions, 2, null votes 1. The motion fails 6 to 9 to 0 to 1.** Let's move on, I was going to propose we move on to another issue; unless anyone has a burning desire to make any other motion relating to fixed minimums. Kyle.

MR. SCHICK: Maybe we're trying to make this too complicated. Isn't the question really whether we want the public to weigh in, of whether we want to give states that traditionally haven't had a quota a quota, an allocation. That's a yes or no question. The

amount is I think really more for this Board to determine through statistical information; through science. What we're trying to do is get from the public, do we want to give states that don't have an allocation an allocation; yes, no? I think that is the question we should be posing to public.

CHAIRMAN BALLOU: I think that's a fair comment and I think at least if not directly, certainly indirectly that is exactly what this option speaks to. But I take your point, and maybe we can fold that in, in some way that makes it clearer that that is really what this part of the document is about. Emerson, you're shaking your head.

MR. HASBROUCK: No, I don't see this as an ability for a state who does not have an allocation to get an allocation. I think this goes to the issue of states that have an extremely low allocation being able to get enough quotas to cover what their fishery really is; without having to go through episodic events, bycatch and so forth.

CHAIRMAN BALLOU: I'll say the ruling from the Chair is that you're both right. Let's move on to the next issue; which is I believe fleet capacity; if I'm not mistaken. I think Megan has a recommendation stemming from her memo; and this is the second issue raised in her memo.

MS. WARE: This is Question 2 on Fleet Capacity. Again, the intent of this option is to secure quota for various gear types. We have a three-fleet option right now that separates the small-capacity gears; thing like cast nets and hand lines from the medium-capacity gears, which are things like pound nets and gill nets. As a result this may limit the flexibility for that medium-capacity gear; since they are not subject to a soft cap.

It also maintains the administrative burden on states to implement timely quota monitoring for roughly 5 percent of total landings in the

fishery. The two-fleet option combines the small fleet and the medium fleet into a single fleet. This is a simpler management alternative, which still insures gears have access to quota; and it reduces the administrative burden on states for timely quota monitoring. As a result staff recommends a three-fleet option be removed.

MR. BOYLES: I would like to make a motion.

CHAIRMAN BALLOU: Go ahead.

MR. BOYLES: That we remove the three-fleet option.

5b CHAIRMAN BALLOU: Seconded by John Clark and many others, discussion on the motion, oh please. Seriously, is there any further discussion on the motion? **Is there any objection to the motion to remove the three-fleet option from the document; leaving only a two-fleet option for fleet capacity? Seeing no objection; we have made some progress on an issue, and the meeting's adjourned.** Let's keep it rolling now. We've got the next one up; Megan, again from her memo.

MS. WARE: Thank you so much, guys. Next is the Regional Allocation Method. We have a four-region approach that separates the Chesapeake Bay states from the South Atlantic states. This kind of makes a lot of sense when you think about it. You have Chesapeake Bay and the South Atlantic, and they differ in terms of timing and the gears used in that fishery.

However, due to confidentiality staff is limited in what can be shown for the four-region approach when it's combined with that fleet capacity approach. More percentages can be shown for that three-region approach. One thing I think is critical to point out is under both regional options, so both the three-region and the four-region option.

There are large swings in allocation; depending on the timeframe chosen. When you go for some of these more historic timeframes you see certain regions fare much better than others. When you look at more recent time periods, again you see the opposite regions do better and the other ones fare not so well.

Again, thinking from a coastwide perspective here, this might hinder the ability of the Board to identify a viable option. Staff recommends that the regional options only be used in combination with another allocation option. This means that it could be combined still with the fleet option or the bait option, but it wouldn't be used as a sole allocation method.

CHAIRMAN BALLOU: We have a recommendation from staff. Are there any questions or comments; or would anyone like to make a motion regarding the recommendation pertaining to regional allocation, as I understand it that it not be offered as a stand-alone option. Robert.

MR. BOYLES: I appreciate you wording that just the way I would have worded it that we remove the regional allocation option as a standalone option.

CHAIRMAN BALLOU: Is there a second to that motion? Seconded by John Clark; and others, I keep looking to my right, I'm sorry. I am right handed. I'll try to lean to the left a little bit more. Moved and seconded to remove the regional allocation option as a standalone, discussion on the motion. Emerson.

MR. HASBROUCK: I tend to agree with this motion, but I've got one question; which might make me disagree with the motion and that is, you know we manage other fisheries regionally. We're going to be talking about tautog tomorrow right, on a regional basis. Well, we manage the recreational summer flounder on a regional basis. If this motion passes, does that restrict us some time in the future of getting

away from state-by-state allocations in some areas; and going toward a regional approach?

CHAIRMAN BALLOU: My answer is nothing restricts us in the future, and as indicated there will be a provision in the document indicating that every three years we will circle back to revisit allocation. Nothing precludes future changes; future adoption of a regional approach.

The recommendation is to not offer for public comment a straight-up-regional approach as a standalone; that the coastwide allocation would be divided by region. **Does that answer your question; other comments on the motion? Is there any objection to the motion? Seeing none; we have another development.** Thank you for that and I think we have another issue from Megan's memo, the next one.

MS. WARE: The fourth issue is in regards to historic reduction landings and what should be included in the allocation percentages. There is no staff recommendation here, but what I'll try and do is provide the benefits and disadvantages of each option. If all historic reduction landings are included that accurately reflects the fishery in each state. But it can also increase some state's allocations to levels above recent landings.

If only Virginia reduction landings are included, it may provide a more accurate reflection of recent fishery performance; but it may limit future growth opportunities in some states. One thing to point out is due to confidentiality rules there are limitations on the bait versus reduction allocation percentages; or that dispositional allocation method that can be shown when only Virginia reduction landings are included.

This primarily impacts older and longer timeframes. But I think it's important to note that in these older and longer timeframes the bait allocation is significantly reduced; and they

may not meet the goals and objectives of Amendment 3.

CHAIRMAN BALLOU: Let's just open the discussion, again without a staff recommendation per se; but with those sorts of pro and con characterizations that Megan just offered. Does the Board feel comfortable maintaining both break outs of the timeframes or does the Board prefer one?

I would just note, and this may be obvious to some that if you really add the two together you have a total of eight timeframe options; because there is repetition in the two earlier timeframes. If you see each option, you see each option broken out using all historic reduction landings; and then Virginia only reduction landings. Of course that only changes things for the three columns to the right. It doesn't change anything for the two columns to the left; which are the more recent timeframes.

The upshot is that we're right now looking at a total of eight timeframe options; if we include both configurations and both sets in the document, which is a lot of options. I think what we want to get from the Board is a sense of whether you wish to utilize one or the other or keep both; comments, suggestions; Rob O'Reilly.

MR. O'REILLY: I think last time we heard both sides of this a little bit; but with Amendment 2 we looked at 2009 to 2011. That was what was chosen by the Board. It's been 12 years since there has been another state with their reduction facility so that certainly I would reiterate what I did last time; that the historical should be left out. But I'm aware that there is going to be some other comments provided as well.

CHAIRMAN BALLOU: Let me go to Dr. Duval next.

DR. DUVAL: I have kind of mixed feelings on this one; because you know North Carolina is one of those states that did have a reduction fishery in the past. We're not ever going to have a reduction fishery in the future due to legislative action. But I see those historic landings as being a measure of productivity; not necessarily a reflection of whether or not the state is going to have a reduction fishery again, I don't think.

There is probably no other state besides Virginia that is going to have a reduction fishery again. But those landings do measure capacity; and I think that even when you consider the different options for how to provide equitable opportunities so that bait needs can be met, reduction needs can be met. I think that historical harvest is important. I think I would like to see it stay in the document; but that's just me.

CHAIRMAN BALLOU: Additional comment, Nicola.

MS. MESERVE: For the sake of public comment, I hope we can narrow it down to one of the two data streams. When I went through the exercise of thinking which options might stay in the document after today, there were more examples where I thought it made sense for all reduction landings to stay in place. I agree that those past landings are our reflection of the availability of menhaden at that time, and the vessel capacity for that state. I would move if you prefer at this time.

CHAIRMAN BALLOU: Please.

MS. MESERVE: Move to remove, oh one last point before I do that. We also run into the confidentiality issues when we look at Virginia only reduction history; and that becomes problematic for weighing a lot of these different allocation options. **I would move to remove the Virginia reduction landing only options.**

MR. BORDEN: Second.

CHAIRMAN BALLOU: Moved by Nicola and seconded by David Borden to remove the Virginia only reduction landing data streams or set of timeframes; discussion on the motion, David Borden.

MR. BORDEN: Just a question. If we take this out to public hearing the way it's being proposed, the Board still would have the flexibility to change it; in other words afterwards. There are no other states that are going to be negatively affected by it, right? In other words, do we have to stick with this or could we change the formulation afterwards; and I'll use Rhode Island as an example. It doesn't make a big difference one way or the other, but I agree with Nicola on the motion.

MS. WARE: The decision that's made today will stick through this amendment; but you still have that three-year allocation revisit provision. I think that could potentially be revisited as part of that. If the Board is interested in that we can ensure that that is in the document to allow for that.

CHAIRMAN BALLOU: I interpreted your question to be, when the Board reconvenes in November can they pick some other approach or use some other set of timeframes. I think the answer would be no; that this would bracket the timeframe issue in terms of the allocation percentages.

The Board would have to choose among, acknowledging that this is creating five options, five timeframe options. It's just using all historic as opposed to Virginia only. We're going from again, a total of eight down to a total of five timeframe options if this motion is adopted. That's my understanding. Robert.

MR. BOYLES: I struggle with this issue. I think I would speak against the motion. Again, I'm going to go back to Page 30 of the Draft

Amendment. I think I've characterized this in my conversations with some of you. As I see Amendment 3 is a great big allocation amendment; and the real question is how much fish are we going to leave in the water to provide for a forage base for other managed important species?

Then how many fish are we going to take out, and then how do we split that pie among the various user groups, states, communities that rely on this? I am not sure, it just seems a little to me internally inconsistent if we're going back and pulling up reduction landings in jurisdictions that no longer allow reduction landings. I struggle with it, so I'm going to speak in opposition to that motion.

CHAIRMAN BALLOU: I appreciate that and I just want to sort of remind the Board that of the five options, three would do just what you suggested but two would not. Two would draw upon the more recent timeframes; and therefore sort of even things out. The Board would still have that choice, even if they went with this option. They wouldn't necessarily have to go back and use historic landings prior to 2005; but they could. At least that would be on the table; further discussion on the motion? Emerson.

MR. HASBROUCK: What's the historic time period that we're talking about here? If we remove Virginia reduction landings only, what's the look-back period here?

CHAIRMAN BALLOU: It's the same five timeframes. They are throughout the document. It's 2009 through 2011, 2012 through 2016.

MR. HASBROUCK: I just wanted to make sure I was looking at the correct table.

CHAIRMAN BALLOU: I'm sorry; I should have had those quicker. I'll turn to Megan next time with a question like that. The same five

timeframes would apply. It would just be what they're based upon. There was a hand over here. John Clark.

MR. CLARK: I agree with Robert. I certainly understand why states would want to include historical data. In 1958 Delaware had the highest landings in the country; because of historical reduction fisheries. But I think we have to deal with the fishery as it is right now and I don't see the point of including some of this old data. It would help streamline this process too, to restrict our consideration of what actually we have recently.

CHAIRMAN BALLOU: Further discussion on the motion. Dave Blazer.

MR. BLAZER: Real quick, I think we're opposed to this as well. We're going to be looking at this again in three-years time. To eliminate kind of the way the fishery has been operating for the last 12 years. I understand everybody's concern about the potential later on. But it goes back, I think to Commissioner Boyle's comment earlier about fairness and equity of the fishery the way it operates now. For that reason we were going to oppose this.

CHAIRMAN BALLOU: Further comment, Eric Reid.

MR. REID: To me it's just a question about the access to data. I don't know if Megan wants to clarify it one more time about what including or not including does to the access to data that may or may not be confidential; that to me, I support this motion for the reason of access to data.

The comment about three years from now, once we get this amendment done we're going to have an entirely different complexion of the menhaden fishery; which we'll have to analyze again. But I think in order to get A3 right; we have to have access to whatever data we can. If you could address that I would appreciate that.

MS. WARE: Sure. With the Virginia only reduction landings, for that bait versus reduction allocation I can only show the 2009 to 2011 and the 2012 to 2016 time periods. What this means is if the Board wants to take bait versus reduction and then further divide that bait, you are basing it on one of those two time periods.

However, those older time periods have significantly lower bait allocations than those two more recent time periods. My question back to the Board then is if we don't include those three time periods. They may not meet the goals and objectives of Amendment 3; so I don't know if you guys feel it's critical to have them in there. If it is then that is something definitely to consider.

CHAIRMAN BALLOU: All right, I think we have had good discussion on this; and I think we need to vote, so I will call a 30 second caucus and then we'll vote on this motion to remove the Virginia reduction landing only options from the document. Thirty seconds. Okay I'm going to call the vote. **All in favor of the motion please raise your hand; those opposed please raise your hand, abstentions, null votes. The motion fails 5 to 11;** which means as of now both sets of options, data streams if you will, will remain in the document; unless somebody want to make a motion regarding the other set. But I don't sense that. I guess Megan to you. Does this remain workable in your opinion?

MS. WARE: From a staff perspective we need to eliminate one of these options for this to be a viable document for public comment. This is duplicating the number of tables and options in the document. I think the Board should really consider removing one of these options.

CHAIRMAN BALLOU: John Clark.

MR. CLARK: I'll make the opposite motion then, I'll move to where we're going to remove the historical landing periods.

CHAIRMAN BALLOU: Yes, the motion would be to remove all historic landing periods; seconded by Rob O'Reilly. Moved by John Clark, seconded by Rob O'Reilly, so this is just a flip, this is now removing the other set of five timeframes associated with all historic reduction landings.

Discussion on the motion, I think we actually had a very good discussion. It's really I think the flip of what we just talked about, but the same exact issue. I'll just give folks a few more seconds to think this through and then I'm going to call for the vote. For staff recommendations we've offered a clarification.

We'll call it a friendly amendment, but John and Rob I want to see if you're okay with this. The new version is to move to remove the historic reduction landings from states which no longer have a reduction fishery. Supported by the maker and seconder of the motion, so on the motion. Eric.

MR. REID: I'm sorry, Mr. Chairman, could you tell me what the definition of reduction fishery is?

CHAIRMAN BALLOU: I think you're catching us off guard in that we don't have a straightforward answer, but what is that Supreme Court case, you know it when you see it. It's other than bait. It's reducing down for purposes other than bait. But I'm sure there's a much better definition, it just appears that we don't have it in front of us at the moment.

MR. REID: Well, I would like to know what that definition is; it would be interesting to know. But to say we have a reduction fishery and have a bait fishery. I talked to Megan about it before. I would like to refer to it as reduction, depending on the definition of reduction of course, and then bait/other.

Because there are other uses for menhaden besides bait, and I just want to make sure I

don't get boxed into a corner to be committed to either reducing them or selling them as bait. It's only a technical thing. It's one word, and if you put it in every one it would take you ten minutes.

CHAIRMAN BALLOU: Megan just concurred that that's very doable, and she made a note to that effect; so thank you for that suggestion. Rachel.

MS. DEAN: I just wanted to ask if maybe adding a specific date to that motion would take out the ambiguity of reduction fishery. Maybe the rest of the room can help me out with that. If instead we were to say from 1985 to 2000, the time period that encompasses what we believe to be the definition of the reduction fishery.

MS. WARE: We could say which don't have a reduction fishery as of 2016. Are you trying to understand when the historic reduction fisheries were? Okay, historic reduction landings from 1985, actually it would be through 2005.

MS. DEAN: I just think I was trying to clarify a little bit, because I think that's really at the heart of what we're doing; and if we identify that time period, then we pare down a little bit on the timeframe questions that we had on the table.

CHAIRMAN BALLOU: Thank you very much for that suggestion, and there has been an additional tweak made to the motion to insert the timeframe 1985 through 2005 to clarify the period that we're referring to with this motion. Again I would look to the maker and seconder, and I'm getting thumbs up; that this is consistent with the motion and Rachel to your point. I think it helps to clarify what exactly is being proposed. Dr. Duval.

DR. DUVAL: I don't support this motion. But I think all this is, is just removing those options

that include all states reduction landings. That's what it does, right?

CHAIRMAN BALLOU: I think the answer is yes, particularly for states like North Carolina, Rhode Island and Maine. They would no longer be credited for their reduction landings that they had subsequent to 1985.

DR. DUVAL: I just want to make sure we're sort of consistent with the way, with the verbiage that has been used in the draft amendment that's all.

CHAIRMAN BALLOU: Okay, I think that was a good discussion and some very helpful clarifying points. **We have a motion and I will reread it to make sure it's clear on the record. Move to remove the historic (1985-2005) reduction landings from states which no longer have a reduction fishery.** Thirty second caucus and then we'll vote. I'm sorry; I guess I might have missed a few. Ritchie.

MR. WHITE: A question of process. If this fails, where does that leave us if having both in is not a workable document?

CHAIRMAN BALLOU: We have both in and an unworkable document; so vote accordingly. I don't see much caucusing going on so I am going to call the question. **All in favor of the motion, please raise your hand; opposed raise your hand, abstentions, null votes. The motion passes 10 to 4 with 3 abstentions.** Okay, we have one last issue from Megan's memo and then we're going to open the floor to other suggestions. The fun continues. Next up is I think the New York recalibration issue. Megan.

MS. WARE: As a reminder, New York has submitted a proposal to recalibrate their landings due to inconsistent or nonexistent reporting. The PDT was comfortable with the methods used by New York; and had a higher comfort level with using landings rather than

number of trips to scale historic landings. Again, the three kinds of caveats of the PDT were that an increase in menhaden abundance in New York waters, as opposed to solely an increase in reporting, may explain the higher landings reported in 2013 through 2016. Assumptions need to be made about how we calibrated landings or divide it by gear types; since that information has not been provided. Under the current timeline there is no time to review proposals from other states which seek to recalibrate their landings.

CHAIRMAN BALLOU: This does hark back to the prior presentation that we went through quickly. But there is a report from the PDT on this in your meeting materials. Jim, would you like to speak to this issue?

MR. GILMORE: Yes Bob, just the first question is do we need a motion to actually include this? Okay, because it's currently not a part of the document. Just in terms of what we submitted on this was – I won't go into all the details unless somebody wants. We just didn't have history.

Because of that the allocation we got was ridiculously inadequate, so we're just trying to correct that. I think the concern that we could get a higher allocation or a higher number of fish than we had. We're talking about the 1 percent area of the fishery; so this isn't a huge windfall for New York if we do this. It's just trying to get back at an accurate number in terms of what we're harvesting. Do you want me to make a motion, or do you want to have discussion?

CHAIRMAN BALLOU: Let's go with the motion.

MR. GILMORE: All right. I move that we include New York's proposal to recalibrate the landings in Amendment 2.

CHAIRMAN BALLOU: First of all is there a second to that motion; seconded by Senator

Miner? There were a few ways in which the New York landings could be recalibrated. There were some multipliers that were offered up; and I know the PDT recommended a specific multiplier that they felt comfortable with. Are you, Jim, willing to perhaps massage your motion a bit with regard to the multiplier?

MR. GILMORE: Yes, per recommendations of the PDT that's fine.

CHAIRMAN BALLOU: That works, so per the recommendations of the PDT, and if you want to go back and read their memo you'll see that they had recommended a lower multiplier from the range that they analyzed. **The motion has been modified to read; Move to include New York's proposal to recalibrate the landings in Amendment 3 per the recommendations of the PDT,** discussion on the motion, John Clark.

MR. CLARK: More of a question. I know the PDT said that this same type of reasoning could benefit other states. Do they have a list of how many? I mean this is yet another "the dog ate my homework" excuse from New York.

MS. WARE: We don't have a list of states that could also potentially want to seek this out; or said another way; no one has approached me with another proposal. However, I think there are other states that maybe suffer from a similar ailment. But long story short, same dog yes, there is no time to review other proposals. If we accept this one, this is the one we will accept and we will move on.

CHAIRMAN BALLOU: Further discussion, Adam Nowalsky.

MR. ADAM NOWALSKY: Is the intent of this that it would provide a single recalculation for all of New York's numbers in the document or would it be an additional question we'd be asking; whether to accept New York's numbers as presented, or tables with New York's numbers as recalibrated?

CHAIRMAN BALLOU: My take is it's the former. This is a Board decision now to clarify which New York landings data is going to be included in the amendment. It's not a question we're going to be asking the public. At least that's how it's being presented. If you wish to take another course, I guess we can put it in the amendment as an option for the public to consider; but that was not our intent. It was more to have the Board make a decision today on which set of data to use for New York. Rob O'Reilly.

MR. O'REILLY: The Technical Committee advanced the idea of landings over trips over effort. But I remember reading that they also indicated there could have been a growth in abundance. Was the Technical Committee, I guess this is for Megan, were they thinking that that was a strong indication that there should be something done to scale or calibrate according to abundance; or was it just something to let everyone know that probably the two time periods were different in abundance?

MS. WARE: It's just a note to the Board. There is no recommendation from the PDT to alter the recalibration.

CHAIRMAN BALLOU: Further discussion on this motion? John Clark.

MR. CLARK: Just a question. Is there a table that you could put up that would show what a difference this would make?

CHAIRMAN BALLOU: They're included in the staff memo. There is a whole series of tables that show what the new numbers would look like. Dr. Duval.

DR. DUVAL: I saw those tables, but I think what John is getting to is – I had to try to shift back and forth between the main Amendment Document and all of the tables that are in the staff memo; and my eyes were spinning

backwards in my head to try to figure out exactly. I mean from a percentage perspective the differences look pretty small. But just for the record.

CHAIRMAN BALLOU: Additional comments? Seeing none; is the Board ready for the question; if so I'll call it. Well, do you want a 30 second caucus on this? Yes, 30 second caucus and then we'll vote. We're ready for the vote. **This is on the motion to include New York's proposal to recalibrate the landings in Amendment 3 per the recommendations of the PDT.**

All in favor please raise your hand; opposed please raise your hand, abstentions, and null votes. The motion passes 14 to 2 to 2 and there has been a request for an ice coffee break; so let's do that for 10 minutes and then we'll reconvene at exactly 4:38 thank you.

(Whereupon a recess was taken.)

CHAIRMAN BALLOU: We're going to resume where we left off. We've gone through the staff memo and addressed the staff recommendations. We're still on Quota Allocation. We're going to be moving on to the other issues after we complete our review of the quota-allocation issues.

Now what I'd like to do is open the floor to any additional suggested changes or modifications to the Draft Amendment regarding the allocation options or sub-options. I would welcome anyone's suggestions for additional changes that they would like to make regarding the allocation options. David Borden.

MR. BORDEN: A question and then maybe a suggestion; this is under the Disposition Quota. Megan, if you could put up, I think it's Table 2. You had it up there before, which is allocation of percentages by years; I believe.

CHAIRMAN BALLOU: It's coming.

MR. BORDEN: Okay, my question is the current split in the fishery as I understand it, and Megan correct me if I misspeak, is 75/25 in terms of purse seine. Then we have an option in here for a 70/30 split. We have two options. I guess my question, in the spirit of the point that was made about not being in individual states interest, and not being in a coastwide interest.

I just can't see the Commission using some of the percentages in the final analysis in this table. All of these percentages would significantly restrict the bait fishery; which is at increasing landings, and there isn't a state around the table here that doesn't have fishermen that benefit from those bait landings.

I would question whether or not we need this. I think that if in this alternative we could simplify the alternative if we just had status quo; which would be 75/25 and then just had the 70/30, and drop this out of it. I would like to hear some other comments. I may not understand why we need this as an alternative.

CHAIRMAN BALLOU: I'll respond by saying that I do think you're correct in that the current split, at least over recent years is about 75/25. That particular option is not yet in the amendment. What's in the amendment is a 70/30 split; and then as you pointed out, David, a series of additional ratios that range from 75/25 all the way up to, I think it's like 92/8. If I understand – go ahead, David.

MR. BORDEN: Just a quick comment; and I'm not trying to nitpick the point, but 2012 through 2016 is basically status quo.

CHAIRMAN BALLOU: Correct, but we don't have that specific option yet. Well, we have what you see up on the board. If you want to retain Sub-option 1 that would be 70/30, and then if you want to modify Sub-option 2, you might want to make a motion to that affect.

MR. BORDEN: If I could request. I would like to hear if somebody wants to take the other side of the argument, I would just like to hear; is there a valid reason to keep these other options in; if there's not, I'm happy to make a motion.

CHAIRMAN BALLOU: Sorry about that I was just having a sidebar with Megan. I think we have a suggested way forward. But to David's point, would others like to speak to what he just said, and then in particular would anyone like to make a motion on the issue? David.

MR. BORDEN: Then I would move that we simplify the disposition alternative and have two options; first option would be 70/30 split, and the second option would be a 25/75 split.

CHAIRMAN BALLOU: Is there a second to that motion; seconded by Roy Miller. Discussion on the motion, is everyone clear on what's being recommended? Instead of there being, I can't count; I think maybe six options there would now be two. The two would be a 70/30 split and a 75/25 split; that's the motion. Discussion on the motion, is there any objection to the motion? Senator Miner.

SENATOR MINER: Just a clarification. I think in the original slide the 30 percent was to bait and 70 to reduction. Does this not flip it?

CHAIRMAN BALLOU: No, the intent is to keep the larger amount for reduction, the smaller amount for bait.

SENATOR MINER: Just wanted to make sure, thank you.

CHAIRMAN BALLOU: That is clear that it is reduction/bait in that order with those ratios; two ratios that would be offered up for public comment in the document. Cheri.

MS. CHERI PATTERSON: Yes, could you just go back to the table, please?

CHAIRMAN BALLOU: There it is. **As you can see, if that table were left in you would have in addition to the 70/30 split, you'd have five other potential splits ranging from 75.2 and 24.8 all the way up to 91.7 and 8.3. Is there any objection to the motion? Seeing none; the motion is approved by consent, thank you.** Are there other suggestions for potential modifications to the allocation options or sub-options? Nicola

MS. MESERVE: I want to help Megan out some more here at the public hearings. Going to the fleet capacity options, we've already limited that to the two-fleet option alone; but I think we can go a little bit further. I don't see that as a viable option; unless it is also coupled with either regional or a dispositional split.

If you had just a coastwide fleet of purse seines, the large capacity one, that would include Virginia reduction, Massachusetts small scale, purse seine, New Jersey larger scale purse seines on one coastwide purse seine quota; and I don't see that as a viable option. **I would move to remove the fleet-capacity-only options.**

CHAIRMAN BALLOU: Is there a second to that; seconded by Ritchie White? I think Nicola you just spoke to your rationale, but do you want to offer anything more? Okay. Discussion on the motion, we'll wait until we get it up there. I realize we're moving fast, so no problem; take your time. Megan is looking up the table and she's going to speak to just to make sure the Board is clear on the ramifications of this; so I'll let her speak.

MS. WARE: If you are in the staff memo on Page 6 and 7 the three fleet ones have already been eliminated, so looking at the two-fleet. This would eliminate the tables 5A and B, but it would keep 5C; which divides the bait sector, combines the dispositional and the bait options together. It would also keep subsequent tables

that combine fleet with region, and then fleet with bait and region.

CHAIRMAN BALLOU: Nicola is nodding in the affirmative that that is indeed the substance behind her motion. Is there additional discussion on the motion? Pat Keliher.

MR. KELIHER: I'm sorry, Mr. Chairman, I just want to make sure I heard that correctly; so 5C is the table that would be removed?

MS. WARE: Five-C is kept. Five-A and B would be removed. But you've already removed one of those, because you decided on your reduction question. It would be removing just your straight large fleet versus small fleet. What this allows you to do is combine that with other methods; so you can further divide that large fleet by region, by bait versus reduction to help with allocation.

CHAIRMAN BALLOU: Additional questions, comments on the motion? David Blazer.

MR. BLAZER: I'm not sure I totally understand yet. We're talking about removing the two-fleet option?

MS. WARE: It's removing the two-fleet option as a sole method. What this says is if you want to pursue a fleet-capacity approach, it has to be combined with either a regional approach and/or bait versus reduction approach. The idea is you don't keep the large fleet as a single block; you would further divide that large fleet, either by bait and reduction or region.

MR. BLAZER: It would eliminate the state-by-state allocation within that fleet capacity?

MS. WARE: There is no state-by-state allocation within fleet; because they can't show jurisdictional landings for large fleet, because they are confidential. But I can show them by region; and that option is still in there, and the Board could choose not to do a fleet capacity

option and go with a jurisdictional approach. That is still in there as well.

CHAIRMAN BALLOU: David, I get where you're at; because I was there at some point like one in the morning recently. But I think the point is that Table 5A would be a monolithic two-fleet-coastwide program, where the entire menhaden quota would be allocated to a large fleet without any further subdivision; and then small fleet in the same way.

What Megan is I think saying, if I understand correctly, is while that would be precluded, the further subdivisions that would make it I think much more manageable, would still be included in the document. This would just take out that large, I call it monolithic, in the sense of just two fleet's coastwide with no other further subdivision. I don't know if that helps or not; but that's my sense as to what this motion is intended to address, further discussion? Rachel.

MS. DEAN: Yes, looking at it I'm just kind of wondering, does it still allow for the small fleet to work on the soft cap under that capacity? I just want it on the record.

MS. WARE: Yes, small fleet can still be under soft cap.

CHAIRMAN BALLOU: Good question. It's really helpful to make sure that we're clear on exactly what these potential changes mean; and appreciate the on-the-record discussions. **Are there further discussions, further comments, concerns, if not is the Board ready for the question? Is there any objection to the motion? Seeing none; we've got another development, thank you.**

Is there anyone else on the Board that would like to make a recommended change to any of the other options or sub-options in the allocation section? Megan says she's good; which means you guys have really achieved a

lot today; thank you very much. I think we've got a much more scaled down, I know we have a much more scaled down document now; that I think will be much easier to convey to the public. Good work!

Now we're on to the next third chunk if you will, it's really the last significant chunk. I call it the "All Other" category. I'm not sure if Megan has a slide or not, but what I wrote down based on her presentation is that we would now entertain discussion on issues such as quota transfers, quota rollovers, incidental catch, episodic-set-aside program, and Chesapeake Bay cap. That's sort of the "All Other" categories, they are all separate and distinct of course; but we're now opening the floor to discussion on any potential changes to those issues. Cheri.

MS. PATTERSON: Yes, does that also include the indecision clause?

CHAIRMAN BALLOU: Yes, thank you for noting that. I forgot about that and thank you. Let's add that in. All of those issues are now open for discussion by the Board. Did you have something you wanted to raise on that issue?

MS. PATTERSON: Sure, I'll go for it. **I would like to make a motion to eliminate Options B and C.** I really don't see the purpose for suspending unused quota or quota average provisions or episodic even incidental catch provision if the Board can't make a decision.

CHAIRMAN BALLOU: Either I would like to ask that the slide be brought back up, or Megan you can call the Board's attention to where the options live under Indecision, so they're clear as to what B and C are.

MS. WARE: Sure, so the options are on Page 46 of the Draft Amendment. Option B was the option where we keep the TAC the same; but any unused quota could not be rolled over and any overages could not be addressed through

transfers. Then Option C was where again the TAC remains the same; but there is no episodic events program or incidental catch program, Page 46.

CHAIRMAN BALLOU: We do have it up on the screen now, thank you very much, Max, or whoever did that. Just so the Board is clear. The motion is to remove Options B and C under the indecision clause, which would leave Options A and D; discussion on the motion. Oh, we need a second I'm sorry. Cheri moved, is there a second to Cheri's motion? Seconded by Nicola Meserve, we have a motion now to do just what I said; and we're now going to discuss it. David Bush.

MR. BUSH: One of the things that stand out in this is that this is more or less something that will take place if the Board fails to do what it needs to do. Unfortunately the Board won't feel much more than some e-mails and phone calls. The folks that are going to feel this are going to be the ones out there on the water. I really hate to see something that technically punishes the fishermen for a failure of the Board to come to some sort of concurrence. Any of the options that sort of take some of the sting out that the fishermen would feel is greatly appreciated.

CHAIRMAN BALLOU: Robert.

MR. BOYLES: I agree with my seatmate here. It was a year ago this week that we sat here and sat through I don't know how many tie votes; which was technically an indecision. I would rather us not even contemplate not making decisions. I don't think it's fair to the resource, I don't think it's fair to the constituencies or to the communities. I agree with David.

CHAIRMAN BALLOU: I do think it begs the question, what if? What if we are unable as a Board to reach a decision this year or next year or any year down the road? Where does that leave us in terms of, this is all about setting the

TAC for the subsequent year. What is the fallback?

That is exactly what this is aimed at addressing. I just wanted to challenge my colleague to make sure that the Board is clear that that is the purpose of having these options presented. Not that I'm commenting on the motion, but just a comment on the reason for why this was developed. Dr. Duval.

DR. DUVAL: I agree with Robert and David. This would only leave Option A and Option D, and while I recognize that Option D might not necessarily be preferable, because it could allow the Board to be lazy when we really should take some action; in other words, if we were facing a reduction. I think you could probably enhance Option D by only allowing that to occur for a single year; and then the Board would have to base things on projections.

Now it may be that the Board would select to maintain the TAC at the status quo, just based on the projections that you have. I think if you're in a situation of looking at an increase or a decrease that Option D you might want to enhance it by only allowing that for a year. I think particularly in the instance of where you're looking at having to decrease.

CHAIRMAN BALLOU: Kyle, you had your hand up?

MR. SCHICK: I think that the idea of us not making a decision is definitely something that I would hate to see us go through again. But I think actually in the end a combination of all four of these things might be something that we need to look at. For example, in Option A that hurts the people who have quota; where it does not hurt those that are under episodic events.

It doesn't bring everybody to the table; it only brings the people that have the most quotas. Of course that just strictly hurts in the industry.

I think, not that I'm a proponent of keeping all four of those things in there, maybe taking B out. But I think C needs to stay in there, because the states without quota need to have to be able to be forced to come to a table if there's a tie.

CHAIRMAN BALLOU: Understood, thank you. I thought I had another hand; Rachel and then Robert.

MS. DEAN: We do not have a motion on the table, do we?

CHAIRMAN BALLOU: Yes, we do.

MS. DEAN: We do. I am very uncomfortable with A. Option A sends shivers down my spine for the industry; just because of the reasons that Kyle mentioned with the idea that we would then be cut so drastically. I think that Option A would be an incentive for those that don't fish.

But I think B and C seem to be geared towards those states that might be operating right now currently under episodic. I think that really the only option here would be D. I would like to make, would that be an amendment or a substitute motion? Thank you. **I would like to make a substitute motion that would move to eliminate Options A, B, and C from the Indecision Clause.**

CHAIRMAN BALLOU: Is there a second to that substitute motion? Seconded by Robert Boyles, then you have a comment, but let's make sure we get that up first. There is moved and seconded to substitute by eliminating Option A, B, and C from the Indecision Clause; which would mean there would be no options for the public to select from. There would just be a straightforward characterization as to what would happen in the case of indecision; and that is it would be status quo, as I understand the implications of this substitute motion. Robert.

MR. BOYLES: That's the reason I offered the motion. I think my interest here is a year ago I sat here and our constituents, our partners in stewardship sat here and watched us struggle to make a decision that we ultimately made in Bar Harbor in October. Just a structural question to you, Mr. Chairman or to the staff, I'm very interested in Amendment 3 in getting us, okay if we don't take positive action with the TAC then it is status quo. Is this the method to get us there? Is that why it's listed as a management option?

MS. WARE: I'm not sure I understand the question, Robert, can you rephrase it?

MR. BOYLES: Sure, last year when we failed, last August when we failed to set specifications for 2017, shame on me. Without a fishery I guess I wasn't paying attention. I apologize to everyone. I just thought okay well, we haven't increased anything, we've not decreased it. I was surprised, I'll advertise my ignorance.

I was surprised to learn that no, absent setting a specification we don't really have a fishery next year. I think that if that was in fact the case, I think that sets up a bad incentive for us not to act. Where I am coming from is I would like for us to specify the fisheries based on the latest information that we've got. If we cannot come to a consensus to make a change, then we'll just continue status quo.

CHAIRMAN BALLOU: Thank you. Roy.

MR. MILLER: Mr. Chairman, as I read this option, if it were to pass then what's left has no alternative options. In other words, there are no options.

CHAIRMAN BALLOU: Correct.

MR. MILLER: There is only the directed course of action that would be in the plan.

CHAIRMAN BALLOU: That's correct. Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: A couple of comments. As Robert Boyles had mentioned, at the August meeting this Board was not able to come to an agreement last year. Between the August meeting and the annual meeting there was vigorous debate on what happens if the Board couldn't come to a decision at the Bar Harbor meeting.

There were a lot of camps; one camp said there is not fishery at all because we hadn't set a quota. The other said there is unlimited fishery; you haven't set a quota, there is nothing to slow the fishery down. Something in this document to resolve that debate is what we're going for here; you know what happens if?

As everyone said, hopefully it's unlikely and it won't occur; but last year is an indication it's not easy. I think based on Roy's last question, what happens if? If this passes then there is only Option D, which says everything rolls over. But if for some reason folks didn't like that option and didn't want this indecision clause in there, you can delete that whole section when you go to final approval of this document; which is in my opinion a bad thing.

Because I think that leaves the plan silent on what happens if the Board can't come to a conclusion. This wouldn't have management options, it would just be this is what the section says; it says everything rolls over from one year to the next if the Board can't take positive action.

CHAIRMAN BALLOU: Thanks Bob. That was really helpful, and just to kind of build on that; there is no indecision clause currently. I mean just to kind of build on and repeat essentially what Bob just said. There is a sense that we need that clause in the amendment.

It can either be what the Board now feels it should be, without necessarily giving the public a choice of options; which is the upshot of the motion on the board or we could give the public

a set of options, which is how it was presented. I think we're all hopefully getting a better understanding of what we're seeking to address here. I have several hands up, and I want to get to some folks who haven't yet spoken. Emerson.

MR. HASBROUCK: Do we have a similar clause in any other fishery management plan, in terms of if we can't come to a decision?

CHAIRMAN BALLOU: I don't know. I'm going to look to staff and see if anyone knows.

EXECUTIVE DIRECTOR BEAL: I don't think we do. Well, that's not true. In some of the joint plans we do; summer flounder, scup, black sea bass, bluefish, those plans that we share with the Mid-Atlantic Council. They have provisions that I think their provisions roll over from one year to the next if they haven't taken positive action. Those plans we do. I can't recall sea herring and dogfish and some of the others; but we do in some of our plans that we share with the Mid.

CHAIRMAN BALLOU: Was there anyone else who wished to comment on this; Ritchie?

MR. WHITE: In Atlantic herring in the three states that do the days-out program; our default position is no fishery. That forces us that it is not acceptable to anybody, and that forces us to make a decision. Question on this, what if we're overfishing and this kicks in?

CHAIRMAN BALLOU: Nicola.

MS. MESERVE: My sense of the reason this was included is because from the prior TAC setting situation. There was no guidance as to whether the TAC would be zero the next year or unlimited the next year, if it wasn't determined. I think the real options here are is it zero or is it status quo? If this motion passes and removes Options A, B, and C; I'll make a follow up motion to include one that says it's zero. Then you

have those two options in the document; it's either zero or it is status quo. Maybe that is a way to move forward.

CHAIRMAN BALLOU: Fair enough, so you can anticipate what might follow after we vote on this. Rob.

MR. O'REILLY: I'm going to support the motion. I think that putting myself as a reader, to read this I would wonder what the ASMFC is really doing that they have all these different permutations of how to make a decision; whereas just having a statement that is Option D, I think that at least gives the public an understanding that there are some contingencies; but at the same time the ASMFC is ready to handle them. I think that's all we need.

CHAIRMAN BALLOU: Any further discussion or is the Board ready for the question? Do you need time to caucus? Fifteen seconds, quick caucus and then we'll vote on this substitute motion. **Okay I'm going to call the question. All in favor of the motion please raise your hand; opposed, abstentions, null votes.**

Well, it's unanimous but I think we lost someone, 17 to 0. Okay, so the substitute becomes the main motion. Would anyone like to make an amendment or another substitute? We now have this as the main motion, which we need to vote on again; unless somebody wishes to offer a substitute. Nicola.

MS. MESERVE: I feel I'm being led. I will move to amend to also add an option to set the TAC at 0.

CHAIRMAN BALLOU: Seconded by Ritchie White, so this would amend the substitute by eliminating Options A, B, and C and adding an additional option that would be setting the TAC at 0. There would be two options that would be included in the document if this amended motion were to prevail. Robert Boyles.

MR. BOYLES: Nicola, I appreciate what you're doing to at least have this conversation. I'm concerned about creating a situation where we invite dissension into our decision making process. We come together quarterly to try to build consensus on what's best for our resources, our coastal resources; long term for sustainability and stewardship. We have a lot of people who spend a lot of time joining us in watching these painful discussions at times. I note that it's very difficult for us to reach consensus on a lot of these issues. I'm just concerned that if we default to zero on the basis of failure to reach consensus, it's going to have significant implications for fish stocks and for people. For that reason I'm going to speak against this motion.

CHAIRMAN BALLOU: David Bush.

MR. BUSH: Along those same lines; that invites a situation where I believe he might have been alluding to where there are only one or two groups that are going to have to concede during every conversation or face zero. I don't think that's a situation we want or need to be in. Again, I understand the point of this motion, but again having been in the midst of many of these fights, I would hate to have to face the fact that you're either going to give up something or you're going to give up everything. That is probably what it would come down to potentially.

CHAIRMAN BALLOU: Ritchie White.

MR. WHITE: I don't see anybody sitting at this table that would be in favor of shutting a fishery down. Nobody here is going to want to shut a fishery down. We do a lot of things that require us to do something. If a stock is overfished we have to take action. You have to cut back harvest. I don't see this as divisive. I see this as a nuclear option that no one is going to go there; therefore we will compromise, and we will come out with a decision. It hasn't

happened in our Atlantic herring, because you can't go there. Everybody wants a fishery.

CHAIRMAN BALLOU: Dr. Duval.

DR. DUVAL: Yes, I appreciate what Nicola is trying to do here as well. I guess my vision; I understand that we want to make sure we have a backstop, in case we're not able to come to some positive action in a timely fashion. I'm just wondering; why does this have to go out to public comment?

You know what I'm saying? Like why do we have to ask the public for their opinion on something that is really strictly a Board decision? My vision of this would be that the TAC setting method is the Board will set the TAC based on the best available science projection analysis. In the event that the Board is unable to come to a consensus on the TAC for the following year by, you know the August meeting or by the annual meeting each year, then the previous year's TAC will remain in effect. Maybe I'm being a little simplistic about this.

CHAIRMAN BALLOU: I do see one hand. Patrick, do you want to address this issue? If you want to maybe come up to this microphone right here in the corner.

PUBLIC COMMENT

MR. PATRICK PAQUETTE: Patrick Paquette; recreational fishing advocate from Massachusetts, and I serve on multiple APs. I would joyfully submit that the one group of people that had more of a painful time one year ago than the members around this table, were the members in the audience who weren't participating in the discussion and watched it happen. That being said; this is a very valuable discussion. But I would just like to bring something that hasn't been said. In my opinion, for the last 40 minutes you've not been talking about menhaden; you've been talking about operational procedure of how this Board functions. I do not believe this is a menhaden

specific question or a menhaden specific appropriate action. This is I believe exactly why you have a Policy Board. This discussion, in my opinion, should be voted out of this amendment, should be kicked to a Policy Board for a, if I was at a council meeting we'd be talking about an "omnibus policy." There should be something more overreaching and yes maybe there aren't any.

Why is it in a Mid-Atlantic plan, well because Magnuson's behind it and there is some federal law that requires decisions to be made. I'm just saying, I just don't think that this is a menhaden decision; and I think that if you all sat back, and there has been a lot of very insightful conversation here. But if you sat back and looked at the whole thing you'd be like, yes this isn't menhaden; this is about a Policy Board decision. I just thought somebody should say it so that you heard it.

CHAIRMAN BALLOU: Points well taken thank you. Is there anyone else from the audience wishing to speak on this particular issue? Seeing no hands; back to the Board, yes, Doug Brady.

MR. BRADY: I just want to get my arms around what was just said, in terms of if we once all this goes to public hearing, do we have the ability to add anything in the amendment that is not discussed in the public hearing; or are we bound by what's in the document and we can't deviate or add things outside that?

CHAIRMAN BALLOU: I think it depends on what the issue is. Certainly on these substantive issues of reference points and allocation, we're framing the options. We've just framed the options. On an issue like this, it is becoming increasingly clear to me that maybe the best approach is to just have it addressed in a single way, perhaps via the status quo option; where status quo is continued.

Then as Bob Beal indicated, we come back to that in November and see if we're comfortable with that or something else. It's up to the Board not up to the public, is what I'm sensing in terms of how best to address this issue; at least that's what I'm gaining from the discussion that's been taking place so far, but back to you, Doug.

MR. BRADY: Could a motion be made to just take this completely out of the public hearing document; this issue?

CHAIRMAN BALLOU: Any motion can be made. My preference would be to keep it in, but not necessarily with options. That's just speaking for the first time as a preference from my perch here. But I'll leave it up to the Board to decide. We do have a motion to amend on the board. We do need to dispense with that. I don't want to rush the issue, but I want to try to move along. But, Spud, I'll look to you for comment.

MR. A. G. "SPUD" WOODWARD: I'm just troubled that we are going to put something in a public information document that tells the public that we're ineffectual. We're asking them to tell us how to fix our ineffectiveness. I see that as a little bit nonsensical; given what we're already trying to deal with in the world or menhaden. I agree with Doug. I think we ought to seriously consider removing it.

CHAIRMAN BALLOU: Let's do this. Let's vote on the motion to amend, and then we'll be back to the main motion. We can vote on that; either as is or as amended, and then potentially we can take up a suggested alternative; which is to just not even have an indecision clause in this document at all.

Is the Board ready to vote on the motion to amend? If so, I'll call the question. All in favor of the motion to amend please raise your hand; those opposed raise your hand, abstentions, and null votes. The motion fails by a whopping

margin, 3 to 15 I think it was. We're back to the main motion.

It's now up to the Board to vote this up or down; then depending on the outcome of that there could be an alternative approach. I suppose somebody could seek to amend right now, or I should say substitute, by suggesting that there be no indecision clause. I think that's the thrust of the discussion that I've heard so far; either voting on this as is or voting on a substitute that would remove the indecision clause entirely, but maybe I'm mischaracterizing. Dennis.

MR. ABBOTT: Yes, I would like to make a motion to remove the indecision clause.

CHAIRMAN BALLOU: That would be in the form of a substitute, I think. Move to substitute to remove the indecision clause from the document. Moved by Dennis Abbott and seconded by Pat Keliher. We've had a lot of discussion on this issue. Would anyone like to further discuss the now substitute motion? Jim Gilmore.

MR. GILMORE: So I'm clear on this, Bob. If we went down this road, at the Policy Board we would have a general statement that what would happen if we didn't make decision on any management plan. Is that how we would reconcile this? Because right now we're going to go back to last fall; where do we have a fishery, is it a closed fishery or whatever; if we don't at least have some guidance as to what we do if we can't reach a decision.

CHAIRMAN BALLOU: Bob, do you have a thought on that?

EXECUTIVE DIRECTOR BEAL: The short answer is yes. If this goes away and the plan is silent, then we end up with last fall where is it zero, is it infinite? What is it? However, if this Board would like to request that the Policy Board take on this task of trying to figure out what happens

if a Board is unable to take action, I think that is appropriate too. Part of this notion to remove the indecision clause may be to also recommend the Policy Board take up this issue.

CHAIRMAN BALLOU: Thank you for that. I think that clarifies the issue. Tom Fote.

MR. THOMAS P. FOTE: This is not a board that everybody is missing at. It is the same board that sits at the Policy Board; so it would be just as simple to do it here instead of taking it to the Policy Board.

CHAIRMAN BALLOU: Dr. Duval.

DR. DUVAL: Yes I think if there was some sense that we felt like there needed to be an overall policy; as was suggested by the public; in regards to TAC setting procedures across all of our fishery management plans, in the event that a TAC is not set for the following fishing year by XX date. Then the status quo TAC remains in place for the following fishing year. I think that is one route.

I support this motion, because as I said earlier, I don't think this is necessarily something that the public needs to provide input on; but I think alternatively we could also simply include just a statement, language in the amendment about just the TAC setting method. It's going to be via projection. If the Board is unable to come to a consensus on a TAC by the annual meeting, then the TAC for the current year remains in effect for the following fishing year. Either one of those I'm fine with.

CHAIRMAN BALLOU: Robert.

MR. BOYLES: I like Dr. Duval's approach. I appreciate Mr. Paquette's suggestion that this is an issue that cuts across. But to Mr. Fote's point, we are all here. I do support the motion. I think everybody's made good points. If necessary, I would be prepared to make a

motion that what Dr. Duval said; but we'll dispense with this first.

CHAIRMAN BALLOU: Thank you, I think that is the right way to proceed. Let's dispense with this issue. Is there any further discussion on this move to substitute? Is the Board ready for the question? Is there any need to caucus? Ten seconds. All in favor of the motion raise your hand. If I'm rushing it, just tell me stop and I'll give you more time to caucus.

I'm just thinking that this is something we can potentially move through quickly. Is the Board ready? **If so, all in favor of the motion to substitute please raise your hand; opposed, abstentions, null votes. The motion passes 15 to 3; so it becomes the main motion.** Is the Board ready to vote on it as a main motion, if so; Dennis, yes?

MR. ABBOT: The decision we're making is strictly about the menhaden plan. I think the suggestion would be that tomorrow at the Policy Board this be brought up as an item to either be discussed at tomorrow's meeting, or to be talked about maybe in November; of how we deal with the indecision. I think Patrick Paquette hit things right on the head saying that we really should be looking at this more broadly.

CHAIRMAN BALLOU: Thank you that's one approach. Is the Board ready to vote on this as a now main motion? **If so, I'll call the question, all in favor of this main motion, which is the same motion that you just voted on, please raise your hand; opposed, abstentions, null votes. The motion carries 16 to 2 to 0 to 0.** Would anyone else like to make any other motion on this issue? We've heard two competing perspectives on this. One is to have some provision in the plan that addresses the issue; the other is to just defer to the Policy Board. Robert.

MR. BOYLES: In deference to the colleagues around the table, a lot of the Boards deal with very, very difficult and different issues. For instance, I would submit to you that the Menhaden Board dynamics are a little different than the South Atlantic Board. With that I would say to put this issue to rest

I would make a motion that this plan include a statement that describes the TAC setting process; but also specifies that failure to change the TAC, based on latest information, best available science, by the annual meeting will result in status quo for the following fishing year.

CHAIRMAN BALLOU: As staff works to get that up, do we have a second? I see Kyle Schick as seconding. Ritchie.

MR. WHITE: Didn't we just vote that down?

CHAIRMAN BALLOU: No. I'd have to go back, I'm sorry. I think what we just voted down was – Robert, the issue that we're struggling with here is how does this differ? I think here is how it differs. I think either we have an indecision clause in the document or we don't. Either we're silent on the issue of what happens via the TAC setting process or we're not.

I think what Robert is trying to suggest is that there be something prescriptive, or at least informative in the document that addresses the issue of how TAC is set versus having nothing in the document whatsoever; and having the Policy Board decide it for the Menhaden Board. Ritchie.

MR. WHITE: The other option is to send it to the Policy Board. That is what I think should happen. Then the Policy Board can look at it to see whether it ought to be across all species or not; and then look at some options in a general sense.

CHAIRMAN BALLOU: We had a second by Kyle Schick, so you can add that; and we'll have more discussion. But I think the issue is clearly this motion; which includes something in the menhaden plan addressing the issue, versus nothing in the menhaden plan, looking to the Policy Board to inform and then somehow I guess integrate or overlap. I'm not sure how that would work, but I understand that is the perspective coming from this side of the table versus that side. Dr. Rhodes.

DR. RHODES: Yes, I agree with what you're saying, Ritchie; and as a policy for all the boards we may need to look at this. But this will be stating in the document going to the public and in the amendment that we will be passing in November that we have created that fallback that we didn't have in the past. At that point everyone has been informed of it. To me it's almost an informative part of the amendment.

CHAIRMAN BALLOU: Ritchie.

MR. WHITE: I think this creates the situation for more division; because this could benefit one group over another group. There could be a situation where one group says yes, we want to leave the TAC in place; and another group wants to make a cut or increase. I think this creates division. The no fishing that doesn't create division, because no one wins from that, anyway that's –

CHAIRMAN BALLOU: Bob Beal.

EXECUTIVE DIRECTOR BEAL: Not a comment on the results of the motion, just on the structure. Including the term annual meeting may be a little prescriptive. In other words, think about this year. The annual meeting is going to happen in October. This Board is going to get back together potentially in November, should we ever get this document out to public comment; get back together in November and may set a quota at that November meeting. Under this it would say actually you can't do

that because you didn't do it at the annual meeting, so the previous year's rolls over. I think by year end or something a little bit less, something a little more flexible than the annual meeting, maybe.

CHAIRMAN BALLOU: Robert, are you comfortable with that suggested perfection?

MR. BOYLES: Yes sir, Mr. Chairman, thank you.

CHAIRMAN BALLOU: I don't know if staff caught that but I think it was by year end, is that already in there; by the end of the calendar year. The new motion on the board is to move to include a statement that describes the TAC setting process with a provision that if the Board fails to reach a decision by the end of the calendar year, then the TAC will be set at the previous year's TAC. John Clark.

MR. CLARK: I'm just a little confused. I guess I'd be asking Robert, is this just the Indecision Clause Mach II? I mean it seems like it does the exact same thing we just took out of the plan.

CHAIRMAN BALLOU: Robert.

MR. BOYLES: My colleague and friend Senator Cromer helped me understand this. This is akin to setting a budget. I think we all deal with budget setting processes, and our legislative bodies have to positively act every year. Certainly I understand Ritchie's point, and it's a good perspective that I've not thought of.

I guess John, from this perspective, this isn't taking our incompetence, as Spud said, to the public; this is just saying hey, as a policy statement moving forward in Amendment 3, if we don't act positively to change something, we're removing the ambiguous place where we were last year; and saying okay, it's status quo.

MR. CLARK: It's a more decisive indecision clause.

MR. BOYLES: Well, it's not an indecision clause it's a statement. But yes, if you want to think about it that way, yes. I guess David suggested if I can that we transform from asking the public what you think. Hey, what do you think we should do, to a more affirmative statement? This is our intent on how we will manage the TAC setting process. Dennis.

MR. ABBOTT: I surely don't want to go against the gentleman from South Carolina. However, I do believe that this motion is out of order; because we did previously vote status quo down, so I do not think that this is a legitimate motion at this point in time. I still think that we should take this up at the Policy Board. Where we stand right now is we did remove the indecision clause, and we've essentially created an indecision clause right here.

CHAIRMAN BALLOU: My take is it's the prerogative of the Board right now to decide how they wish this document to go out to the public; and I don't think anything is out of order. I think this is the time to try to get it right; at least in terms of a draft amendment that will be coming back before the Board for final decision in November, at which point we can take up this issue again. David.

MR. BUSH: Just to be brief. Like what Bob said here just a minute ago. We went from asking the question of what the public thinks; to identifying to the public what our policy is at this point. That's all this is.

CHAIRMAN BALLOU: All right, I think we've had a very healthy discussion. I'm going to take one more comment; and then I'm going to call the question. Adam.

MR. NOWALSKY: I think when we were taking A, B, and C out we weren't giving an option any more. When I see what we had was an indecision clause, and then I see the words, fails to reach a decision. From my perspective this is

an indecision clause; but however we want to frame it.

I know how I would feel if I was sitting in the audience right now. I think regardless, with this specific motion, this specifies what we would do with the TAC. What happens to all the other provisions of the plan; transfers, rollovers, episodic events, incidental catch, anything else that we do through the remainder of this amendment process?

CHAIRMAN BALLOU: Are you asking that as a question, what happens?

MR. NOWALSKY: That's a question, because all this says is we're going to set the TAC at a level which says we have however many million pounds out there, and is that for the reduction fishery? Is that for the bait fishery? Is that only for small gears? What do we do with it? How do we catch it?

CHAIRMAN BALLOU: I'm going to let Megan take a crack at addressing your question, Adam.

MS. WARE: This is specifically aimed at status quo for the TAC. If you're interested, after November, once we've taken final action on the amendment. If someone is interested in changing transfers or quota rollovers; that is through adaptive management, so you would need an addendum.

CHAIRMAN BALLOU: I think we've had a very good discussion. I think I would like to call the question, unless there is any objection to that decision. There is at least one, not an objection but all right. Thank you, Dr. Duval. It is 5:34 and we've got a lot left to do; not a whole lot, but enough that I don't want to be here at eight o'clock.

I'm going to call the question on the move to include a statement that describes the TAC setting process with the provision that if the Board fails to reach a decision by the end of

the year then the TAC will be set at the previous year's TAC. Is the Board ready to vote? If so, all in favor raise your hand; those opposed raise your hand, abstentions, and null votes. The motion passes 14 to 4 to 0; and I think we are done with this issue for now.

Are there any other recommended changes to any of the other issues, such as quota transfers, quota rollovers, incidental catch, episodic event set aside program, Chesapeake Bay cap? I am reminded that the AP had offered a suggestion that there be more options added to the episodic event set aside program; as well they recommended, or at least someone on the AP recommended establishing a RSA, a Research Set Aside Program. I also have a note here to suggest starting the fishing year either in May, or I think it was March, either one. I think Jeff spoke to the two possibilities rather than January 1. Those are AP suggestions, recommendations. They're certainly not binding; but they are certainly informative in terms of other issues or other approaches that the Board might want to consider. Does anyone wish to offer any suggested changes to any of the issues that I just mentioned, or any others for that matter? Dr. Duval.

DR. DUVAL: When I was looking at the quota transfer options, it seemed to me that – and I'm just trying to get to that page in the amendment – it seemed like Option D, which is the quota reconciliation with accountability measures. I apologize if I might have been one of the ones who spoke in favor of something like this.

But I think rather than looking at something that was perhaps trying to penalize a state if they required additional quota transfers, or looking at only allowing or forgiveness of overage based on numbers of consecutive years. I think it's really complicated, and I think the public is going to be confused by that. I think, while I like the quota reconciliation, I think the Option D, which includes whether or

not a number of years, whereby if a state went over they would not have overage forgiven.

I think it penalizes states that get stuck in a situation where maybe there was simply more availability; or something might have happened where they just were not able to control that harvest, rather than a nefarious intent to actually overrun a quota. I don't know it just seemed overly complicated to me that's all.

CHAIRMAN BALLOU: This is on Pages 70 through 73 of the Draft Amendment, which does lay out four options for quota transfers; and Dr. Duval was just I think speaking specifically to Option D on Page 72. Although I didn't hear a motion, I heard a potential concern associated with that. Does anyone wish to comment or make a motion on the issue of quota transfers? Cheri.

MS. PATTERSON: Yes I agree completely with Dr. Duval. I do think it's cumbersome. I think it's complicated to implement; so I would like to make a motion to delete Option D.

CHAIRMAN BALLOU: Is there a second to that; seconded by Dr. Duval? This is a motion to eliminate Option D from the Quota Transfer options in the Draft Amendment. Is there discussion on the motion? **Is there any objection to the motion? Seeing none; the motion is adopted by consent.** Any other suggested changes. Thank you for that suggestion; any other suggested changes? I know it's late and we're tired, but this is the time to go at any other issues that we haven't yet addressed that folks feel should be addressed. David Borden.

MR. BORDEN: I'll try to make this quick. Under the quota rollover provisions we've got a provision for a 100 percent rollover; and I just raise the concern. I've listened to a number of discussions; particularly by NOAA scientists about rollover provisions and when they take place.

One of the concerns that have always been voiced around those deliberations is that if you're going to roll over 100 percent of the quota, then that portion that gets rolled over has already been subjected to another year of natural mortality. Then the following year you harvest the original amount. Aren't we actually, with 100 percent rollover provision, aren't we harvesting more than the allowance? If so, I have no problem inserting a number smaller than 100 percent; but I would like to hear some technical advice on that; given the natural mortality rates.

CHAIRMAN BALLOU: No one's biting up here, from a technical standpoint. I mean clearly there are several options. This is on Pages 73 and runs through Page 75; the five options under Quota Rollovers, and as David Borden just indicated, first option unused quota may not be rolled over, then it goes to 100 percent rollover as Option B, 10 percent Option C, 5 percent Option D, and 50 percent Option E. Do you want to make a motion David to address any of those?

MR. BORDEN: I would prefer to get some guidance from some of the people around the table on what an appropriate number here is; but I don't think 100 percent is an appropriate number to have in this, for the reasons I articulated. **I'll move to take out Option B.**

CHAIRMAN BALLOU: Is there a second to that; seconded by Roy Miller? Moved and seconded by David Borden and Roy Miller to remove Option B, 100 percent quota rollover from the Quota Rollover options; discussion on the motion, Dr. Duval.

DR. DUVAL: I tend to agree with David. I had some concern about that. I do think it depends on how much is left over, obviously, and which way we eventually end up on our allocation decision.

CHAIRMAN BALLOU: Further discussion on the motion. Emerson.

MR. HASBROUCK: If I am understanding this correctly, if we remove Option B then what we have left is unused quota cannot be rolled over or 10 percent can be rolled over or 5 percent can be rolled over, or 50 percent can be rolled over. Earlier today I asked about natural mortality. With your permission, Mr. Chairman, I would like to ask Jason what the natural mortality rate that is used in the assessment.

MR. McNAMEE: I'm not going to give you a direct answer. I mean think back to, I think first it is a good observation that it's not like money disappears because of all the things that are going on in the environment. You know I appreciate the discussion that you're having. I can't give you a number as to what it should be, other than 100 percent. We could do that calculation.

It would give us some unsatisfying number that would be weird looking; you know some odd proportion. I can't off the top of my head, because the natural mortality, it's a vector, and so we need to make like, remember Katie's talk. There is all that kind of stuff going on. I can't give you a direct answer, but you could conceivably come up with that answer. But then that gets complicated by what Dr. Duval brought up a little while ago. If there's not 100 percent it gets complicated again.

CHAIRMAN BALLOU: Additional discussion, Dr. Duval.

DR. DUVAL: I apologize for a second bite at the apple, but I do think it is important to note that these options are, you know Option B is that has been proposed for removal is that the 100 percent quota rollover be removed. That's if you only harvested five pounds of your quota then there is like 99 percent of it left that could be rolled over. You know the other options leave 10 percent of the total quota that would

be available could be rolled over, 5 percent of the total quota, or 50 percent of the unused quota; so there is a distinction between those options. I just want to make sure, you know we're all tired, but want to make sure people understand that; that's all.

CHAIRMAN BALLOU: Thank you so much, I did gloss over that; and thank you very much for clarifying those options. I saw another hand up. Rob O'Reilly.

MR. O'REILLY: I cannot support the motion. I think that there is more information involved, so we take a snapshot which we call the assessment, and we're lucky enough to have something through a pretty current time period, you know a little over a year difference or just not even a year difference.

I think there is data out there to advise the Board about rollovers. I think it's hard to just say 50 percent or 75 percent or 100 percent; because the stock is dynamic. I would want to know more about maybe some current indices; you know some information that would say the stock is on par with where it was on the last assessment that type of approach. I'm reluctant to support that motion for taking that out.

CHAIRMAN BALLOU: Any further discussion on the motion, Tom Fote.

MR. FOTE: I think I still have a no rollover hat sitting home from our striped bass meetings when we talked about rollover. Sometimes the discussion was do we leave the fish that haven't been taken as a buffer zone for our decision on imprecise of what we do. I'm not sure if that's the best way to go; so I think I could support this motion.

CHAIRMAN BALLOU: Further discussion? Seeing no hands; 15 second caucus and then we'll vote on this motion. **Okay I'm going to call the question. All in favor of the motion**

please raise your hand. Opposed please raise your hand; abstentions, null votes, the motion passes 13 to 5 to 0 to 0.

Are there any other issues or any other motions that the Board would like to make? Now I'm going to do it in the broadest way possible. Any other recommended changes to the Draft Amendment? I think we've pretty much covered a lot of territory, but we still have some more to go, I think. Cheri.

MS. PATTERSON: Hopefully this will be an easy one. **Under Episodic Events, I would suggest removing Option C, which is the 0 percent set aside;** because the Board could accomplish the same thing by just approving Section 4.3.6.1 for inclusion in the amendment when taking final action on the amendment.

CHAIRMAN BALLOU: Hang on one second; we're just going to make sure we've got this clear.

MS. WARE: Cheri, what was the section number you said?

MS. PATTERSON: It was 4.3.6.1.

CHAIRMAN BALLOU: For the Board's edification, we're on Page 78 of the Draft Amendment. I think we are, right; TAC Set Aside? Your motion is to remove Option C. Oh, I'm sorry this is the percentage of TAC Set Aside for the Episodic Events Program, so yes.

The motion is to remove Option C, 0 percent of TAC is set aside; leaving two options, either 1 percent as is currently the case, status quo, or 3 percent. Is there a second to the motion? Seconded by Emerson Hasbrouck, so moved and seconded to remove Option C, which would essentially zero out the episodic even set aside program; discussion on the motion, Roy.

MR. MILLER: Mr. Chairman, if this were to pass then that means the episodic program

continues, whereas if it doesn't pass and Option C becomes part of the plan, then there is an option to do away with the episodic program; am I right?

CHAIRMAN BALLOU: I think that is a fair characterization.

MR. MILLER: Well and maybe we don't need an episodic program. If one of the quota options chosen provides each state with a flexibility to handle episodic events, so we might not need an episodic program; hence why not leave the Option C in there?

CHAIRMAN BALLOU: I understand your point; Adam.

MR. NOWALSKY: Yes, I agree entirely with Mr. Miller on that; given the way we typically do things with being able to for final action choose something within the range of options. If we had C and B in here that would give us the flexibility in November to either eliminate the episodic program if we had some other mechanism through quotas, or to come up with some other number. I'm going to move to substitute to remove Option A, and then I believe that leaves us with the appropriate range.

CHAIRMAN BALLOU: Is there a second to Adam's substitute motion to remove Option A, which is the status quo program of a 1 percent set aside? Seeing no second; the motion fails for lack of a second and we're back to the original motion, and that is to remove Option C. Is there any further discussion on that motion?

If no, I'll give the Board a few seconds to caucus and then we'll vote. **All in favor of the motion to remove Option C from Episodic Event Set Aside Program section please raise your hand; opposed please raise your hand, abstentions, and null votes. The motion fails 4 to 13 to 1.** Are there any other motions to be brought before the Board? John Clark.

21 MR. CLARK: Sorry to bring this up, but as a state that kind of depends on the incidental catch, I think there are just too many options here; and in particular Option F, which would do away with the incidental catch, and Option E, which I think is extremely complicated; that would still leave us with four options. I would move to remove Options E and F from the Incidental Catch proposals.

CHAIRMAN BALLOU: This is on Page 75, and runs through 77, Pages 75 through 77 include the options, sub-options regarding incidental catch and small scale fisheries; and the motion is to remove Options E and F. Is there a second to the motion? No second, so the motion fails for lack of a second. Let me ask the question one more time to be clear. It's been moved to remove these two options from the Incidental Catch section. Is there a second to the motion? Seeing no second; the motion fails for lack of a second. David, did you have another issue?

MR. BUSH: After speaking to some folks during our brief break, what seems like days ago now, the possibility of getting shot. The Biological Reference Points, I understand that maybe I bit off more than folks were willing to chew. If the Board would be willing to entertain a second round with only Option C, I would be prepared to present a motion for that.

CHAIRMAN BALLOU: I think that's a motion to reconsider, and we would have to go back and determine whether you were on the prevailing side of the vote; whether it was a vote to.

MR. BUSH: Tie.

CHAIRMAN BALLOU: Hang on a second; we're going to try to figure out where we were. I'm going to let Megan say what she just said to me; because I'm not sure I can repeat it.

MS. WARE: The Board took affirmative action to include all five options in the document; so if you want to reconsider that it's a two-thirds

majority vote; and you have to be from the prevailing side to make that motion.

CHAIRMAN BALLOU: David, do you want to pursue this? I mean we're going to have to get into the weeds here and figure out where you were on the vote, and then go with two-thirds. Do you want to pursue this?

MR. BUSH: No, Mr. Chairman, I believe I was not on the prevailing side. I don't want to waste any more time, thank you.

CHAIRMAN BALLOU: Are there any other issues to be brought before the Board on Draft Amendment 3? As I sense a winding down, I want to note a couple of things. One is certainly editorial changes, non-substantive in nature are welcome, and I know Megan would be receptive to those up to a certain point; and I'm going to ask Megan to kind of throw out a deadline date for any, what we would need to make sure are only editorial changes. Megan, what would be that date?

MS. WARE: I would ask for Monday close of business. We're going to try and get this out next week.

CHAIRMAN BALLOU: Any further changes that are editorial in nature can be submitted via e-mail to Megan; but by the close of business Monday, after that it would be too late. We do need a final motion, if there are no longer, I'm sorry I see a bunch of hands up. I was going to ask for a final motion; but maybe I've jumped the gun. David.

MR. BLAZER: I'm sorry Mr. Chairman, thank you for recognizing me. I'm not sure where this would kind of fit it; it's not editorial in nature. But after the discussion on the ERPs this morning and the presentation on the tables, I was wondering if we could, if the TC could produce projections on some of the quotas or the total allowable catches for those projections; to be included in the PID. I think it

would be very helpful for the public to understand the impact of each one of those ERPs that we're talking about. I would request that if we could.

CHAIRMAN BALLOU: David, I just had a sidebar with Megan, she suggested that would be an appropriate request as we move to our next agenda item; and so we'll circle back to that. Was there another hand that went up, Robert?

MR. BOYLES: Mr. Chairman, I was going to make a motion to approve Draft Amendment 3 for public hearings.

CHAIRMAN BALLOU: Thank you, how about Draft Amendment 3 to the menhaden FMP as modified.

MR. BOYLES: As I said, Mr. Chairman.

CHAIRMAN BALLOU: Let's get that up on the board, a motion to approve Draft Amendment 3 to the menhaden FMP as modified for public comment; seconded by Dennis Abbott. This will be the final action of the day; and this would mean we're done with our good work on the draft amendment. Is there any further discussion on the motion?

Is there any objection to the motion? Seeing none; the motion passes by consent and is adopted; and the Draft Amendment is in its final form. Thank you very much. This was a long journey; but I think a very good one. We really worked through a lot. Now, I've got to quickly sort of pause and let Megan speak to the importance of good communication on public hearings. I know Megan wanted to get that out, so I'll turn it to you.

MS. WARE: I was just going to ask if states are interested in a public hearing to please let me know as soon as possible. It's going to be a tight turnaround to get the document out; because we have to wait 30 days for that first public hearing. Just let me know as soon as

possible; and then I'll put together a draft schedule for the states. If you don't like the date that you've been given, you can contact me and we'll figure it out from there.

CHAIRMAN BALLOU: I'm assuming that is by next week at the latest. Please inform Megan of your desire to have a public meeting in your state.

SET 2018 ATLANTIC MENHADEN SPECIFICATIONS

CHAIRMAN BALLOU: With that I think we're ready to move on to our last agenda item, and that is Item 9; Specifications for 2018. This is teed up as a final action item. However, it is up to the Board as to whether you want to decide this issue today or postpone it until the November 14 meeting, when the Board will be rendering its final decisions on the Amendment 3 issues.

We will first hear from Jason McNamee; who will present the results of the several stock projection runs conducted by the Technical Committee. We'll then take questions and then we'll take up the issue of whether the Board wants to decide on this issue today, or postpone it until our next meeting. We had about an hour allocated for this overall issue; but let's see if we can do this in less time. Jason.

MR. McNAMEE: I had a 300 slide presentation, but I'm going to cut right to it. I had fancy equations with superscript and subscripts. Katie, are you running it? Could you jump right to Slide 9? I'm going to start off with the caveats; because I think they're important. I've shown you stock status and all that stuff already. The methods, I've given you this projection presentation, and I think this is literal, every time for the past year and a half that you've met. It's just the same thing. You can think back to all of the methods and all that stuff; and I'm happy to answer any questions. But the caveats I think are important, so I'll start

here. These are caveats that are probably relevant to all projections that you look at for all species, more or less. But in our projections we did not include any structural or model uncertainties; so there is a source of uncertainty that we did not account for, although we did account for lots of different types of other uncertainty.

It is conditional on a set of functional forms, the point of that is we've made some assumptions and some choices; and we think they're good choices, but if we were wrong that would impact the results of these projections. In our projections the fisheries were assumed to continue at the current proportions of allocation; meaning between bait and reduction, using the current selectivity.

An important thing to consider, new management regulations that alter those proportions or the selectivities, would affect projection performance. Changes to reference points would also impact the projection performance. What we're saying there is not telling you that those things are bad, we're telling you that if they change, the output that we're showing you would be a little different. It's a risk assessment you have to do as you kind of make these determinations.

Not saying one way is good and one way is bad, but just so you're aware that it affects the performance of the projections. Recruitment goes in as, basically a median value. It gets sampled from the time series. If recruitment is characterized by runs of large or small year classes, things that are out of our control, because they're driven by environmental or ecological conditions. That affects the trajectories of the projections.

What we're using to characterize the catch is the Baranov Catch Equation, so this assumes mortality occurs throughout the year. If you start adding in things like seasonal closures and stuff like that that again impacts the

performance of the projections. This is a series of animations here.

I'm not going to show you, there are a bunch of graphs in the memo that we produced. I'm not going to show you all of those graphs. But just so you know what you're looking at when you look at the graphs, there is a plot of four graphs; top left corner is fecundity, just to the right is recruits, bottom left is fishing mortality, and then bottom right is landings.

The first set of arrows, so landings in this case I'm showing you a constant landings projection, so that's a flat line. Next click that shows you the reference points, go ahead and click again; they're both there, so the orange and blue lines on the two charts on the left represent the reference points. Then you've got a set of different quantiles that we're showing you.

The first two are the 95th and 5th quantiles, the next two are the 75th and 25th, and then the one right in the middle there is the median. Just so you know what you're looking at as you're looking at those charts. But the next table, these are the runs. You've seen these runs before; they are the ones that you have requested.

The difference with this set of projections is we're now using the update assessment. You've got your current TAC is Run Number 1, and then you have a series of proportional increases to that current TAC; 5 percent to 40 percent. You can see what those TACs represent. Then all of the boxes on the right hand side of the table, under the heading Risk of Exceeding F Target, you have the risks associated with those various TACs by year. What you can see if we just take that first one, 9.5 percent that is the risk of exceeding F target in 2018, if we stay at the current TAC, decreases in 2019 and drops to 0 in 2020. The reason why that – and you'll see that is a consistent trend across all of them – the reason that is happening is because that median recruitment

is coming in and filling in underneath; and giving you more biomass to fish off of.

Not shockingly, as you then go down the column, as you increase the current TAC those risks of exceeding the target increase. Hopefully nobody is shocked by that one. Next table is the risk of exceeding F threshold; same setup here. This again is the six runs that are just using the TAC as how you're setting the increase or staying status quo.

You can see with regard to the threshold the risks are much lower. Only at the very highest increases do you start to see some really small level of risk of exceeding the F threshold. Then the final three runs here were risk based; these had to do with your probability of being below the F target. You asked for three versions of that a 50 percent, a 55 percent, and a 60 percent. You get less risky as you increase the percent probabilities. You can see the associated TACs with those levels of risk.

Then you see the risk of exceeding the F target; and that is exactly what you had asked for, so those numbers are the reciprocal, if you add them they equal 100, hopefully. Then the risk of exceeding the threshold is the far right column there; and you can see with all of these there is low risk of exceeding that F threshold. That is it by way of projections.

CHAIRMAN BALLOU: Questions for Jason on his presentation. Seeing none; what is the will of the Board? How would the Board like – oops, we have an AP report.

ADVISORY PANEL REPORT ON SPECIFICATIONS

CHAIRMAN BALLOU: Thank you, I'm sorry I missed the AP report on specifications; Jeff, do you have that teed up? Are you ready to jump on that?

MR. KAELIN: Yes there is a graphic up here. You already know we met on the 26th. There were a wide variety of AP members there. Not

without surprise, we weren't unanimous in the recommendations to the Board. There are several advisors here too; I forgot to mention that earlier.

Six AP members didn't support any increase in the TAC; saying the Board should wait until the Amendment 3 process is completed, I guess in this case until menhaden fully expand to their former range; particularly in the Gulf of Maine. Given the potential to change reference points under Amendment 3, the Board should remain status quo on TAC today.

Highlight importance of considering ERPs, given menhaden's ecological role as forage fish. Four members did support an increase. One recommended a 240,000 metric ton quota; noting that at 314,500 metric tons only a 50 percent risk of exceeding the F target, which is conservative from a federal council perspective.

I think the New England Council uses a 50 percent possibility of exceeding the OFL; and I believe the Mid-Atlantic uses a 40 percent chance of doing that. One AP member recommended the TAC be increased to 288,500 as there is minimal risk of exceeding F threshold. Another suggested that at a minimum the 212,500, which is status quo landings from 2009 to 2011 be agreed to, and one commented that the projections, which are based on robust estimates of natural mortality indicate a minimal risk of exceeding the reference points. We were all over the map, Mr. Chairman; with no surprise.

CHAIRMAN BALLOU: Thank you; I do appreciate the APs involvement and recommendations on this issue. Questions for Jeff on the AP report? Back to the Board, I'm sorry Dave.

MR. BUSH: Just a very brief question. This may be more for Jay than Jeff. When we set our increase last year at the 6.42 percent or whatever, up to a 40 percent increase was 0 percent chance of going into that overfishing;

and yet this year at a 40 percent increase we're up to what, 3.5 percent chance of overfishing, or passing the threshold if I understand right.

I guess what I'm looking for from the public's point of view is that we didn't increase it, so where's our return on our investment at; because if we certainly went over, any reductions in the fishery would be certainly expected. But we went theoretically under. We could go that same route this year and we'd be overfishing. I guess what I'm trying to figure out is was there a recruitment event that caused this to not pay off; as maybe we might have looked forward to?

MR. McNAMEE: I think I understand your question. The big difference between our previous advice and this advice is, previous advice was based off of that 2015 benchmark assessment, so now we were outside of that terminal year of the stock assessment by a year or two at that point. Now we're using the update assessment information; so we've kind of rebooted. We have a lot more information to work with that we have more confidence in.

We're not relying as much on all of those assumptions as we project out. We've already discussed earlier the differences between the population output that came out of the benchmark and the update. I'm thinking that it's some combination of those things is why the information is a little different. However, I think the advice is pretty close to the same as it was last time. I mean those are pretty small percentages of risk.

CHAIRMAN BALLOU: Rob.

MR. O'REILLY: Jay, can you put that slide back up that shows the risk with the target, the first slide you had in this series? Okay, what I was going to ask, but it's probably fairly close. But one of the options on the allocation, based on TAC level, sites 212,500 metric tons and then

works from there as to alternatives once that is met and after it's met.

But I suppose that that is fairly close with the 210,000. Not that I would ask that for public, but I would ask that for November; since it's a point estimate right in the document too. My question is, I know you can't exactly interpolate, but 212,500 should be somewhere closer to 12 percent than it is 15.5 percent; is that correct on the risk in 2018?

MR. McNAMEE: Yes. I mean I think that is a safe interpolation. You've got it kind of bounded there. I don't know exactly where it would fall, but somewhere in between the two that you have on there, 210,000 and 220,000.

CHAIRMAN BALLOU: Dennis.

MR. ABBOTT: Would you be interested in a motion at this time?

CHAIRMAN BALLOU: Very.

MR. ABBOTT: Did you say yes?

CHAIRMAN BALLOU: I said very.

MR. ABBOTT: Me too, we've got a dinner date at 6:30.

CHAIRMAN BALLOU: That's our indecision clause by the way, if we don't decide we can't go to dinner, right?

MR. ABBOTT: I think that at this time there would be no effect on next year's fishery if we didn't do anything today; and being that we have a pending Amendment 3, which should pass by November, coupled with the lateness of the hour. **I would like to make a motion to postpone until November the specification setting.**

CHAIRMAN BALLOU: Is there a second to that motion? Seconded by Jim Estes; so moved by

Dennis Abbott and seconded by Jim Estes to move to postpone the setting or the specification setting for the 2018 TAC, until let's say November. Well you have a date certain. Is November good enough, or do we need to specify the date?

MR. ABBOTT: I think it's the date that we'll be having our Baltimore meeting; would that be correct?

CHAIRMAN BALLOU: Yes, I think we're November 14. Are you comfortable, and Bob do you think putting in November 14 is better than just saying November?

EXECUTIVE DIRECTOR BEAL: Well, the other thing is you know, is there any value in the Board getting together at the annual meeting and setting the quota; and then reserving November 14 for just Amendment 3? You're not going to have any reference points at the annual meeting.

One thing you could put in this motion, even though Adam gave good advice yesterday against this, is you could say until the Board's next meeting. If there is any reason to get together at the annual meeting that could be done; or it could be November 14. Next meeting I think is probably a more flexible term.

CHAIRMAN BALLOU: The question is whether we want to be so flexible, or whether we want to be more definitive. Ritchie.

MR. WHITE: I think the intent of this is to wait until after we pass the Amendment; because any increase in quota may go to fulfill what we do in the Amendment.

CHAIRMAN BALLOU: Certainly in conjunction with the Amendment. I mean that's how I view it. If this is postponed to November 14 that means on November 14 we have two major decisions to make; the final decision on Amendment 3, and final decision on the 2018

TAC; and those are coupled, and we'll just have to figure out the sequencing. But they would be done on the same day; if this motion as currently worded were to pass; discussion on the motion, Emerson.

MR. HASBROUCK: Are we going to schedule two days for this meeting in November?

CHAIRMAN BALLOU: That's not the intent. Adam.

MR. NOWALSKY: I certainly agree with the sentiment that if we took action today or at the annual meeting we'd probably be looking to change that action after that November date. But Mr. Chairman, I know how I feel. I've got a good sense how people around this table feel. I know how the last single-day meeting went for a menhaden amendment. I have grave concerns about trying to do the spec-setting process at what is very possibly going to be late after an arduous day.

I'm not sure we have a better path in front of us. I would seriously consider looking at doing the spec setting at the annual meeting. At the very least we would have a sense of the direction we wanted to go, relative to this year; and then just go ahead and see those changes take effect with regards to how we potentially modify our management paradigm through Amendment 3. But I have grave concerns about trying to do both on the same day.

CHAIRMAN BALLOU: Duly noted. I would also note that in discussing this with Megan, one thought was that we could actually insert this in the middle of the Amendment 3 discussion; that would be doing reference points, then doing the spec, and then doing allocation; just a thought, and I'm not necessarily disagreeing with your comment. I'm just adding another perspective that might help others think this through. Dr. Rhodes.

DR. RHODES: Well, just a question. Having met now and then meeting on November 14, is the Menhaden Board scheduled to even meet at the annual meeting; or have you all looked at calendar for that? I would think we wouldn't, and to have this language would do what we need to do.

EXECUTIVE DIRECTOR BEAL: We haven't set the schedule for the annual meeting. We base it on the outcome of this meeting, so it's still up in the air.

DR. DUVAL: I guess I wanted to return to what Mr. Blazer had asked about earlier; which was I think being able to produce projections that were associated with the various reference-point options. I think it was indicated that this would be a good time to bring that up again, so I was wondering if it was possible to get a response on that. That might inform this conversation.

CHAIRMAN BALLOU: Yes, I'm not sure if it's the exact right moment given the pending motion; but let's call it the right moment. Megan, do you have a thought on that issue? I guess the request, if I understand Dave; your request would be the Board tasking the TC to produce projections associated with the reference points that are in the draft amendment. I'll let Jay respond as to whether that's something the TC would be able to undertake. Jay.

MR. McNAMEE: I think we would be able to do projections with those reference points, under the conditions that we are currently using; so in other words all of the other assumptions in the projection methodology that we're using, all of that selectivity and all that kind of stuff. As long as we can keep that static and just drop in the new ecological reference points, and where those TACs will be. That we could do by November. I've already actually checked in with Dr. Schueller on this. She concurred. As long as we don't have to try and construct all of the variations of what these different

allocations might do and all that sort of thing, we could do those projections by November.

CHAIRMAN BALLOU: I don't think we need a motion on that. Is there any objection on the issue of tasking the TC to do their best to undertake projections with regard to the reference points in Amendment 3? Seeing no objections; that will be a tasking request from the Board to the TC.

I do think it does now better inform the discussion that we're having; in that we will now be looking at not only the projections associated with our single-species-current assessment, but as well the new reference points. I think the Board is going to need to think through how that would all be sequenced; if there were to be a decision made.

I get Adam's point wholeheartedly, but I'm just trying to think through how that would work; meaning those projections would be provided, I guess either at the annual meeting or at the November 14 meeting. Again, I'm sort of trying to think through the logical sequence. I do think we need to be cognizant of the fact that on November 14 we're going to be taking up Amendment 3. That will include, as two parts basically, and Part A is Reference Points.

We will have projections associated with those reference points. I don't think it makes sense to, but maybe it does, to consider those before that meeting. At that meeting, as we deliberate on the reference point issue, we'll have projections associated with them to better inform the deliberation and decision.

Do we want to consider setting the 2018 TAC immediately thereafter, or prior to? I think that's really what it boils down to. I think there is certain awkwardness prior too, but as I think Adam suggested there could certainly be reconsideration given. Robert.

MR. BOYLES: I do believe, as I said earlier that I believe Amendment 3 is a great big allocation amendment. I certainly understand and appreciate Adam's suggestion. But we know this is coming. We've known this is coming for a long time, so I support the motion.

CHAIRMAN BALLOU: Additional discussion on the motion, Eric.

MR. REID: What is the guarantee that Amendment 3 will be finalized on November 14?

CHAIRMAN BALLOU: There is no such thing as a guarantee, but it is certainly the intent.

MR. REID: I have no intention of addressing TAC until after Amendment 3 is finalized. If that means we are going to do it after we do A-3 on the 14th, then I would support this motion. If it means we have to wait, I'm a very patient man, believe it or not; and I will wait. I don't think I'm alone.

CHAIRMAN BALLOU: Thank you for that; further discussion on the motion, Emerson.

MR. HASBROUCK: I'm unclear, in terms of what these new projections are that Jason and his team are going to run for either the annual meeting or the November 14 meeting. Is that going to be a revision of these tables that we just had up; in terms of what are the percentage probabilities of exceeding the target or the threshold. Because the target and threshold may change based on reference points, or is it something else that is going to affect our decision on setting specifications for 2018?

CHAIRMAN BALLOU: I'll give my version of an answer and then Jay may want to clarify. I think it's a separate run or a separate analysis of projections associated with the reference points set forth in the draft amendment; which are a new recommended set of reference points.

Pikitch et al., all the options that the Board agreed to keep would be now subject to projections and associated TAC levels.

The Board would know or have a better sense as to what the implications would be of either staying with the current approach and the current set of projections associated with that or the new approach is better included in the options in the amendment. Emerson. Did that answer your question? I probably didn't do a very good job answering that so Jay.

MR. McNAMEE: No, I think you are there. I'll just add that we probably do have to make some call on that risk probability. I assume we would just pick 50 percent probability; unless you have guidance on that. I only hesitate, because I think we would start to run into issues if we want to throw out well, how about five different risk scenarios. That is my only hesitation, but an assumption about the risk of exceeding those reference points would have to be made. My underlying, my working hypothesis would be we would just run with 50 percent for this initial cut at it.

CHAIRMAN BALLOU: Emerson.

MR. HASBROUCK: Yes, I understand both of your responses, well partially. But I'm still not sure what those runs are going to show us. What are they going to be projections of?

MR. McNAMEE: Good question. It's going to look just like the existing runs; and what we would do is we would set that TAC to not exceed 50 percent of whichever of those versions for each. There would be three new runs set at 50 percent probabilities, and we would move the TAC up to that 50 percent probability of not exceeding those new reference points; and that's what the projection would show.

MR. HASBROUCK: Essentially what you would do with, we're on Projection 7 here, for the

various reference points. I don't want to get too bogged down in this. I'm just trying to figure out here what we're going to get back, and whether or not that's going to impact my decision on when I would prefer to set the TAC.

MR. McNAMEE: The answer is yes to your question.

CHAIRMAN BALLOU: Okay, I think this has better informed the issue; but we're really looking at a motion that is pretty straightforward; in terms of whether we want to make a decision today on a TAC or postpone that decision, and if so do we want to postpone it to the 14th or some other date? Right now the motion is to postpone it to the 14th. Is there any further discussion on the motion? Eric.

MR. REID: When's the next meeting after November?

CHAIRMAN BALLOU: February.

MR. REID: I want to make a motion to substitute.

CHAIRMAN BALLOU: Go ahead.

MR. REID: Move to postpone specification setting for the 2018 season until the February meeting.

CHAIRMAN BALLOU: Is there a second to that; seconded by Andy Shiels? Discussion on the motion, Eric do you want to just give the Board a sense as to what you're –

MR. REID: My previous comment that I don't have any desire to set a TAC until A-3 is finished, and I'll be protected in that thought if we postpone until February.

CHAIRMAN BALLOU: I guess my question to staff is I know Megan is off talking, but I'm wondering about the implications about waiting

until February to set a TAC for a fishing year that would have already begun. Adam.

MR. NOWALSKY: That was my question. Given the discussion we had about no fishery, open fishery, where's this leave us on January 1st?

CHAIRMAN BALLOU: I agree that that leaves us in an uncertain place. Ritchie.

MR. WHITE: I don't believe it does. If Amendment 3 passes then it is status quo.

CHAIRMAN BALLOU: If Amendment 3 passes. But yes, I guess that is a good response. Eric.

MR. REID: There was some discussion earlier about feet to the fire and all that. I want to vote on this motion.

CHAIRMAN BALLOU: Okay. Further discussion on the motion to substitute, and I think from a staff perspective I think I've already articulated the concern about waiting until February. Do you have anything else to add on that? Okay, yes. Rob O'Reilly.

MR. O'REILLY: As been stated before, our General Assembly is the management authority, and to wait until February would really not work out for Virginia.

CHAIRMAN BALLOU: Thank you. If there is no further discussion I'm going to call the question; and I'll give you 30 seconds to caucus, just waiting for Megan to return. Let's vote. **All in favor of the motion to substitute please raise your hand; those opposed please raise your hand, abstentions, null votes. The motion fails 5 to 13. We're back to the main motion to postpone until November 14.** Is the Board ready for the question? Any need to caucus. Emerson.

MR. HASBROUCK: I'm wondering, to help facilitate our discussion in November, if it's possible to set aside some time at the annual

meeting for this Board to reconvene and take a look at these projections that are going to be run; so we at least have some knowledge of where we are and what these projections are going to show, so that we can have that discussion ahead of time. Then once we finalize, or hopefully finalize the Amendment in November, we're at least partly up to speed; in terms of where we might go with specification setting. Is that possible?

MS. WARE: The only hiccup or wrench in that is that I'm not sure I can promise having those projection runs by the October annual meeting; because it's a pretty short time between now and then. If we're ready for them we can certainly do that; but they may not be ready in time.

CHAIRMAN BALLOU: But I get your point, Emerson. I think that suggests an interest that I think we probably all would share in at least perhaps getting a briefing at the annual meeting; and we'll take that as something that we'll look to try to do. But given what Megan just said, if it can be done we'll try and do it.

If not we'll just have to push the whole kit and caboodle to November 14. Are there any other, David and I think we pretty much addressed your issues. Okay, good. Is there any other discussion, or is the Board ready to vote on this? I see no hands so let's vote. **All in favor of the motion please raise your hand; opposed, abstentions, null votes. The motion passes 17 to 1, and we are done with that agenda item.**

ADJOURNMENT

CHAIRMAN BALLOU: Is there any other business to come before the Board? Seeing none; is there any objection to adjourning? Seeing none; we stand adjourned. Thank you, and let me just say, I know everyone is about to get up, but let me pause for a second and just say; this person to my right is a true champion.

I have been wowed by her intellect and her ability to hold things together; and she has been like a psychologist to me as well. Her "no worries" has really helped. How many times she's said to me no worries is amazing; so thank you, Megan, really well done; and thank you to the Board, good night!

(Whereupon, the meeting was adjourned at 6:35 o'clock p.m., August 2, 2017.)



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Menhaden Management Board
FROM: Atlantic Menhaden Technical Committee
DATE: October 4, 2017
SUBJECT: Stock Projections for the Interim Reference Point Options in Draft Amendment 3

At the August meeting, the Atlantic Menhaden Management Board (Board) tasked the Atlantic Menhaden Technical Committee (TC) with developing projections associated with the various reference point options in Draft Amendment 3. These projections use the same methods described in the benchmark and update stock assessments. The fishing mortality time series was converted to a biomass weighted fishing mortality using the calculations as presented in the BERP memo and in Amendment 3. Landings for 2017 were constant at the amount specified for the 2017 total allowable catch (TAC). Projections were run to determine the TAC that would be below the target 50% of the time for 2018. The allocation between northern and southern reduction and bait landings was the same as allocated in Amendment 2. All calculations were done using the latest results from the 2017 Stock Assessment Update. To make all reference points comparable, F values will be reported below as biomass-weighted averages over the entire population. For example, the reference points from the 2017 stock assessment update presented below represent the same level of fishing pressure, but the values differ from the mean F values over ages 2-4 you may be accustomed to seeing. Options below are labeled identically to draft Amendment 3 for consistency. The WG has a number of comments and caveats regarding the projections and calculation of these reference points, which are found below.

Methods

Data into and output from the Monte Carlo bootstrap (MCB) runs of the base run of the Beaufort Assessment Model (BAM) were used as the basis for the projections within this document (see stock assessment report for details on base run and MCB runs). Projections were run for a total of 2 years with constant landings (2017-2018). The starting conditions of the projection analysis include initial numbers at age, which were the estimated numbers at age, $N_{a,y}$, for year 2017 from the BAM for each MCB run.

Numbers at age after the initial year were calculated as:

$$N_{a+1,y+1} = N_{a,y} e^{-Z_{a,y}}$$

where Z was age and year specific mortality and equals natural mortality for each age for that year plus the fishing mortality rate times the selectivity at age. The vector for natural mortality for each projection was the vector from each MCB run. Selectivity was a vector from each MCB

run for each fishery with the northern and southern commercial reduction fishery selectivities being the values in the last time period. Fishing mortality was estimated using the optimize function in R in order to match the annual landings (level of landings denoted above). Annual landings were calculated using the Baranov catch equation and weight of landings.

Recruitment was projected without an underlying stock-recruitment function and was based on the median recruitment observed in each MCB run. Recruitment variability was included whereby for each year a deviation in recruitment was selected randomly with replacement from the deviations estimated in each MCB run.

Notes on Projection Methodology:

As usual, projections should be interpreted in light of the model assumptions and key aspects of the data. Some major considerations are the following:

- Fisheries were assumed to continue fishing at their estimated current proportions of total effort, using the estimated current selectivity patterns. New management regulations that alter those proportions or selectivities would likely affect projection results.
- If future recruitment is characterized by runs of large or small year classes, possibly due to environmental or ecological conditions, stock trajectories may be affected.
- Projections apply the Baranov catch equation to relate F and landings using a one-year time step, as in the assessment. The catch equation implicitly assumes that mortality occurs throughout the year. This assumption is violated when seasonal closures are in effect, introducing additional and unquantified uncertainty into the projection results.
- In general, projections of fish stocks are highly uncertain, particularly in the long term (e.g., beyond 5 years).
- Although projections included many major sources of uncertainty, they did not include structural (model) uncertainty. That is, projection results are conditional on one set of functional forms used to describe population dynamics, selectivity, recruitment, etc.

Notes on Interim Reference Point Calculations:

- Even after consultation with the author and coauthors of Pikitch et al (2012), it was not readily apparent to either group how best to translate reference points derived from an Ecopath-with-Ecosim meta-analysis to an age-structured single species framework. This is a novel application rather than standard practice.
- These calculations are based on knowing B_0 and thus the absolute scale of the population. As indicated in the population scale shift from the updated BAM assessment, which is not uncommon in many assessments, the absolute scale of the population and thus B_0 are highly uncertain for menhaden. As a result, the expected performance of management measures may be different than what is projected depending on the magnitude of the uncertainty associated with B_0 .
- The ecosystem models used in Pikitch et al. (2012) to develop biomass and fishing mortality reference points assumed constant selectivity over the entire population or over all adult size classes for the forage groups. The Atlantic Menhaden BAM model uses a dome-shaped selectivity where the oldest age classes are less vulnerable to the

fishery than the middle age classes. Thus, the ecosystem models used in Pikitch et al. (2012) make fundamentally different assumptions about the behavior of the fisheries and the effects of fishing on forage fish populations than the BAM assessment and thus the projections.

- The WG has concerns about the use of reference points that preserve a certain proportion of total biomass instead of spawning stock biomass or fecundity, because they may result in a level of spawning potential well below the FEC limit. For menhaden, age 0 and 1 represent a significant proportion of the total biomass, but do not contribute to the spawning population, and are not targeted by the fishery. Therefore, the level of fishing pressure that reduces total biomass to 40%B₀ is higher than almost anything seen in the history of the fishery and results in almost total loss of spawning adults.
- Although biomass-weighted Fs allow comparison across different types of reference points, they are averaged across the entire population, including the unexploited biomass of ages 0 and 1. This means that the population average F is lower than the F experienced by the most heavily exploited age groups, even for values of fully recruited F, which would be considered unachievable or unrealistically high in an age-structured framework.

Projections Options A and B – Single species reference points from 2017 Stock Assessment Update

The TAC that resulted in a 50% probability of being below the F target in 2018 was 314,500 mt (Table 1; Figure 1).

Table 1. Percent risk of a 314,500 mt TAC exceeding F_{target} (0.408) or F_{threshold} (1.164) in 2018.

	2018
Percent risk of exceeding F _{target}	50%
Percent Risk of exceeding F _{threshold}	5%

These reference points were calculated as per the 2017 stock assessment update, but in order to be comparable to the biomass-weighted interim reference points, the biomass-weighted average Fs have been provided instead of the geometric mean over ages 2-4.

Projections Option C – Pikitch et al. (2012) reference points

The TAC that resulted in a 50% probability of being below the F target of 0.041 in 2018 was 40,500 mt (Table 2; Figure 2).

Table 2. Percent risk of a 40,500 mt TAC exceeding F_{target} (0.041) or F_{threshold} (0.367) in 2018.

	2018
Percent risk of exceeding F _{target}	50%
Percent Risk of exceeding F _{threshold}	0%

As a reminder, Pikitch et al. (2012) recommends management actions for species in the “intermediate information tier” (previously determined for Atlantic menhaden by the WG, 2015) in the form of applying a hockey stick harvest control rule with $B_{LIM} \geq 0.4B_0$ (B_0 = unfished biomass) and $F \leq 0.5 * M$. In this scenario, fishing would be prohibited when biomass levels fall below 40 percent of unfished biomass. When biomass is greater than 40 percent of unfished biomass, the fishing mortality would not exceed half the natural mortality rate and would depend on how large the population is relative to B_0 . To calculate F target rates at $40\%B_0 < B < B_0$, a straight line was fitted between $F=0$ at $40\%B_0$ and $F=0.5M$ at $100\%B_0$.

Projections Options D and E – 75% and 40% rules of thumb

The TAC that resulted in a 50% probability of being below the F target of 0.160 in 2018 was 147,200 mt (Table 3; Figure 3).

Table 3. Percent risk of a 147,200 mt TAC exceeding F_{target} (0.160) or $F_{threshold}$ (1.493) in 2018.

	2018
Percent risk of exceeding F_{target}	50%
Percent Risk of exceeding $F_{threshold}$	0%

For Options D and E, the F reference points that achieve specific percentages of unfished biomass, we use biomass per-recruit calculations from the assessment model to estimate biomass-weighted F rates that achieve 40% and 75% unfished biomass per recruit. This produces a full F that can be translated to a biomass-weighted average F for comparison with the $F=0.5 M$ reference points. For comparison of reference points, the equilibrium biomass-at-age under that level of F is used to weight the full F.

Table 4. Allocation (in pounds) to states/jurisdiction using the Amendment 2 allocation method after 1% of the TAC has been set aside for Episodic Events. The current TAC is shown in the first column followed by the three reference point scenarios with a 50% probability of being below F target in 2018.

Reference Point Option	Current TAC	A, B	C	D, E
Metric Tons	200,000	314,500	40,500	147,200
Pounds	440,924,524	693,353,814	89,287,216	324,520,450
After Set Aside	436,515,279	686,420,276	88,394,344	321,275,245
ME	171,882	270,285	34,806	126,505
NH	131	206	27	97
MA	3,660,454	5,756,063	741,242	2,694,094
RI	78,195	122,962	15,835	57,552
CT	76,152	119,749	15,421	56,048
NY	242,032	380,596	49,012	178,136
NJ	48,853,880	76,822,726	9,892,911	35,956,456
DE	57,646	90,649	11,673	42,428
MD	5,991,662	9,421,889	1,213,312	4,409,864
PRFC	2,709,809	4,261,175	548,736	1,994,420
VA	372,443,990	585,668,174	75,419,908	274,118,777
NC	2,150,995	3,382,440	435,577	1,583,132
SC	-	-	-	-
GA	-	-	-	-
FL	78,449	123,361	15,886	57,738

Density plot for Amendment 3: Options A and B

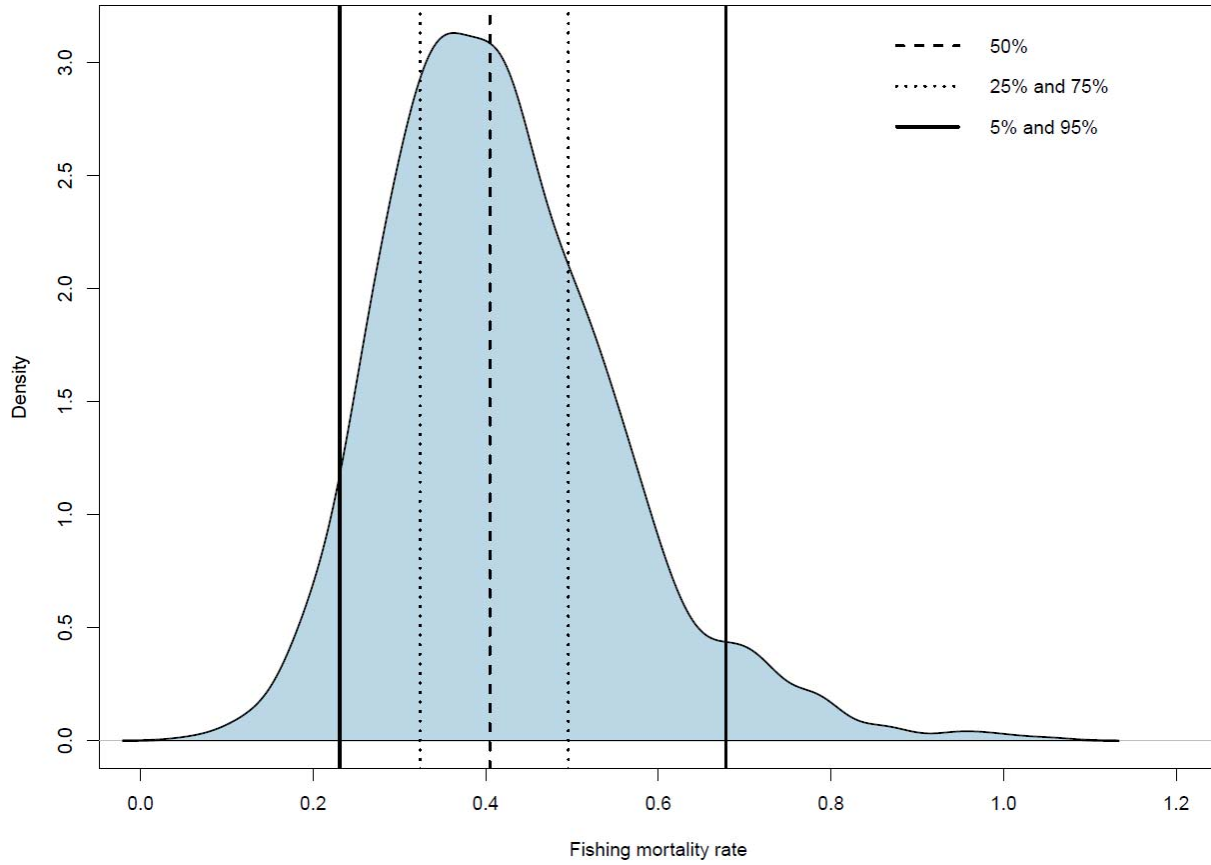


Figure 1. Fishing mortality rate density function demonstrating the uncertainty in F with the TAC of 314,500 mt for 2018. The dashed line indicates the 50th percentile with the dotted and unbroken lines indicating percentiles as indicated in the legend.

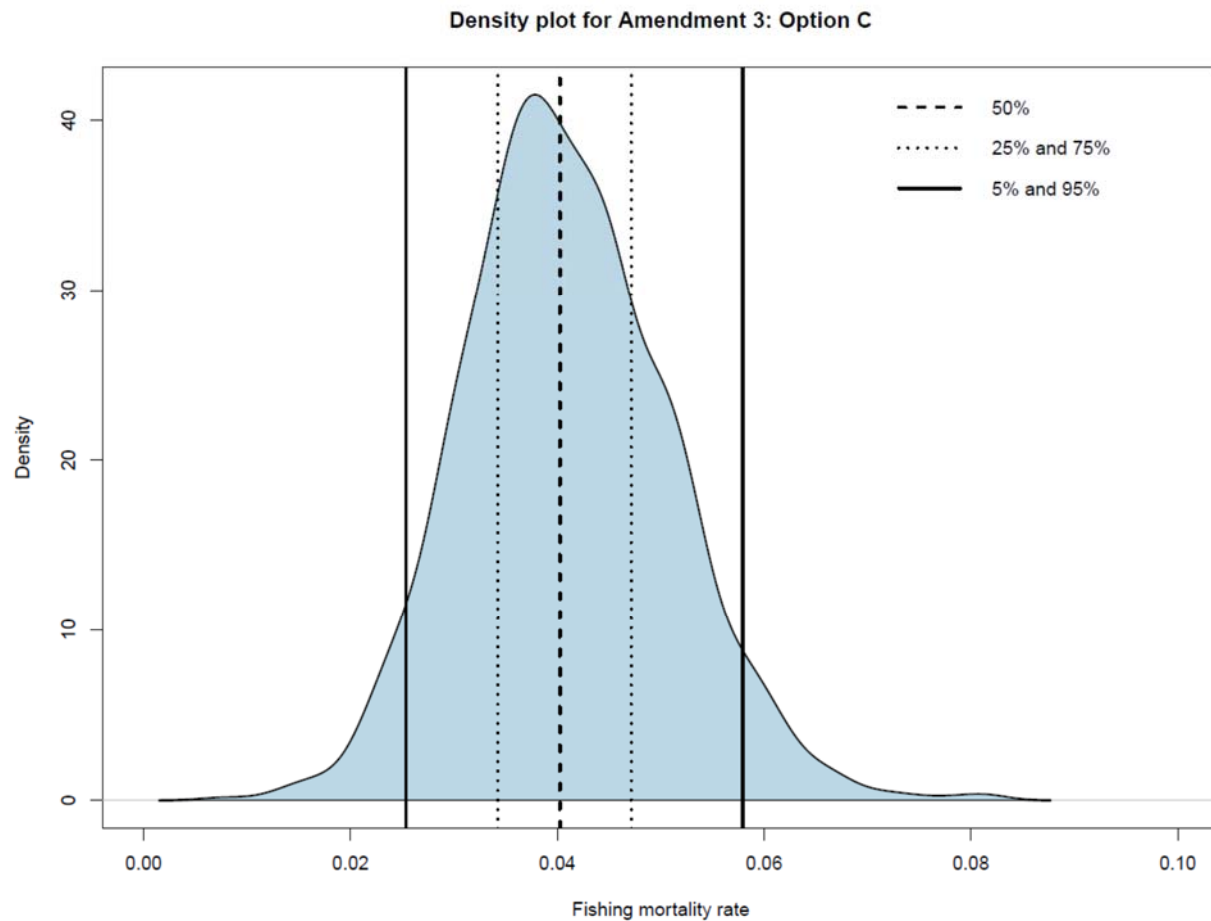


Figure 2. Fishing mortality rate density function demonstrating the uncertainty in F with the TAC of 40,500 mt for 2018. The dashed line indicates the 50th percentile with the dotted and unbroken lines indicating percentiles as indicated in the legend.

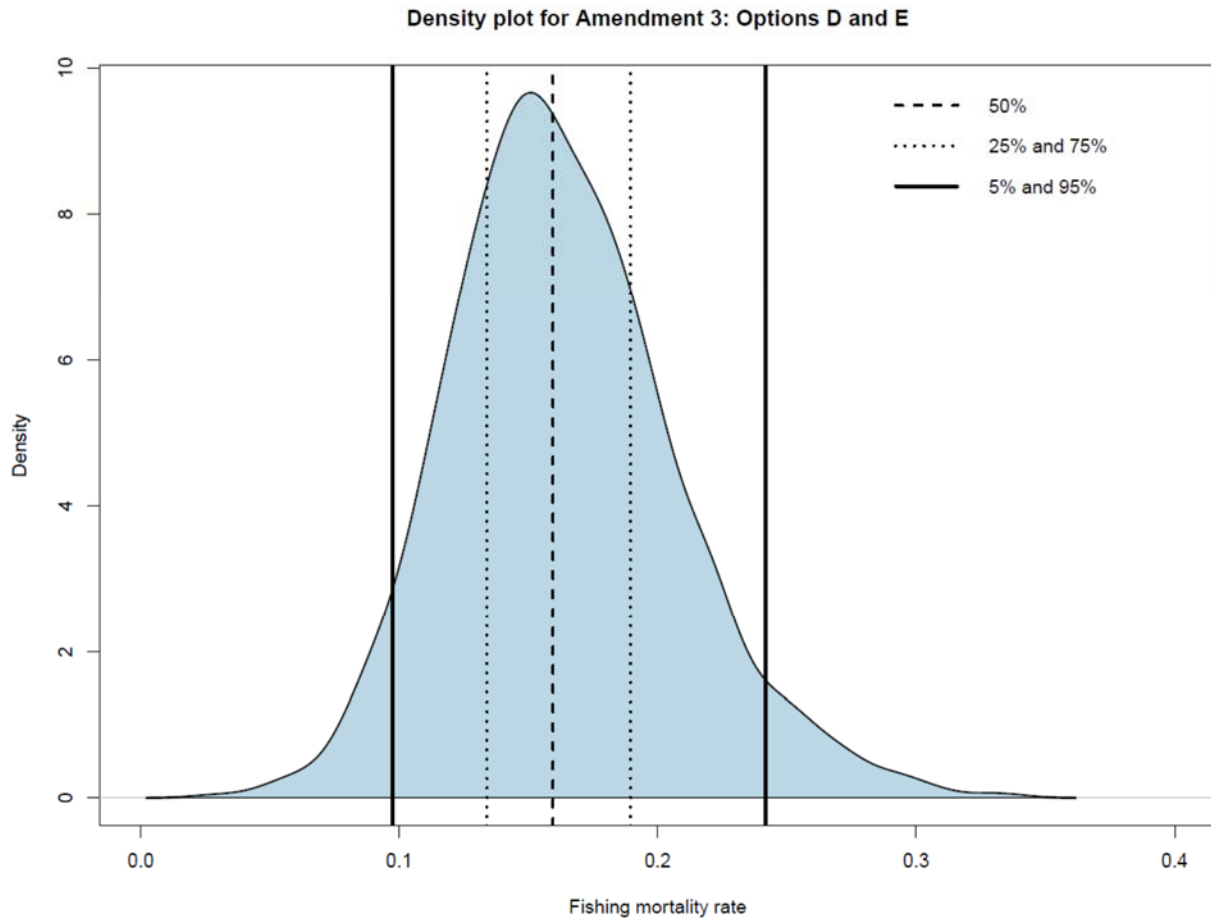


Figure 3. Fishing mortality rate density function demonstrating the uncertainty in F with the TAC of 147,200 mt for 2018. The dashed line indicates the 50th percentile with the dotted and unbroken lines indicating percentiles as indicated in the legend.