

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

**Webinar
May 5, 2020**

Approved August 4, 2020

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1. **Approval of Agenda** by Consent (Page 3).
2. **Approval of Proceedings of February 2020** by Consent (Page 4).
3. **Move that the Board task the Ecological Reference Points Work Group to continue with analyses to address the listed recommended scenarios before the August Board meeting** (Page 16). Motion by Cheri Patterson, second by Nichola Meserve. Motion carried (Page 16).
4. **Motion to adjourn** by Consent (Page 19).

ATTENDANCE

Board Members

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

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

Ex-Officio Members

Matt Cieri, Ecological Reference Point WG Chair	Corrin Flora, Technical Committee Chair
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Staff

Bob Beal	Dustin Colson Leaning
Toni Kerns	Marisa Powell
Kristen Anstead	Mike Rinaldi
Max Appelman	Kirby Rootes-Murdy
Pat Campfield	Caitlin Starks
Maya Drzewicki	Michael Schmidtke
Lisa Havel	Geoff White
Chris Jacobs	Katie Drew
Jeff Kipp	Sarah Murray
Laura Leach	Tina Berger

Guests

Fred Akers	Chris Batsavage, NC DENR
Mike Armstrong, MA DMF	David Behringer, NC DENR
Pat Augustine, Coram, NY	John Bello, VSSA
Russ Babb	

Guests (continued)

Alan Bianchi, NC DENR
Jesse Bissette
Mary Alice Bittmann
Deidre Boelke, NEFMC
Ellen Bolen, VMRC
Jason Boucher, DE DFW
Jeff Brust, NJ DEP
Erika Burgess, FL FWC
Mike Celestino, NJ DEP
David Chargaris, Univ FL
Benson Chiles, Chiles Consulting
Derek Cox
Caitlin Craig, NYS DEC
Kira Dacanay
Jessica Daher, NJ DEP
Jeff Deem, Lorton, VA
Monty Deihl, Ocean Fleet Svcs
John Duane, Wellfleet, MA
William Dunn
Dawn Franco
Rick Frenzel
Tony Friedrich, SGA
David Frulla, ME
Tom Fuda
David Gentes
Pat Geer, VMRC
Lew Gillingham, VMRC
Angela Giuliano, MD DNR
Willy Goldsmith, SGA
Zoe Goozner, Pew Trusts
Joseph Gordon, Pew Trusts
Zach Greenberg, Pew Trusts
Jon Hare, NOAA
Hannah Hart, FL FWC
Pete Himchak
Mark Hoffman
Jesse Hornstein, NYS DEC
Ed Houde, UMD
Asm. Eric Houghtaling, NJ (LA)
Taylor Ingraham
Lane Johnston
Jeff Kaelin, Lund's Fisheries
Chad Keith
Patrick Keliher, ME DMR (AA)
Kathy Knowlton, GA DNR
Aaron Kornbluth, Pew Trusts
Ben Landry, Omega Protein
Adrienne Kotula, CBF
Tom Lilly, Menhaden Project
Tom Little, NJ Legislature
Carl LoBue, TNC
William Lucey
Mike Luisi, MD DNR
Dee Lupton, NC DENR
Chip Lynch, NOAA
Pam Lyons Gromen, Wild Oceans
Shanna Madsen, VMRC
Genine McClair, MD DNR
Dan McKiernan, MA DMF (AA)
Jason McNamee, RI DEM (AA)
Steve Minkkinen, USFWS
Chris Moore, CBF
Brandon Muffley, MAFMC
Allison Murphy, NOAA
Genny Nesslage
Scott Olszewski
Patrick Paquette, MSBA
Mariah Pflieger
Olivia Phillips, VMRC
Nick Popoff, FL FWS
Stephanie Rekemeyer
Harry Rickabaugh, MD DNR
James Rogers
Jocelyn Runnebaum
Brandi Salmon, NC DENR
Bradley Schondelmeier
Amy Schueller, NOAA
Chris Scott
Alexei Sharov, MD DNR
Jared Silva
Melissa Smith, ME DMR
C J Sweetman
Helen T.-Heumacher, FL FWS
Howard Townsend, NOAA
Jim Uphoff, MD DNR
Mike Waine, ASA
Timothy Wheeler
Lowell Whitney
Randy Whittaker
Kate Wilke
Erik Zlokovitz, MD DNR
Gerry Zlokovitz
Renee Zobel, NH FGD

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, May 5, 2020, and was called to order at 10:45 a.m. by Chairman A.G. “Spud” Woodward.

WEBINAR ATTENDANCE ROLL CALL

MR. MAX APPELMAN: This is a coastwide Board. I hope everyone can hear me. I’m going to run through the list of names again from north to south, so bear with me. Some of these names I have not read out loud to myself before, so if I butcher your name I apologize in advance. Starting with Maine, Megan Ware.

MS. MEGAN WARE: Yup, I’m here.

MR. APPELMAN: Steve Train. Not hearing anything I’ll mark Steve as absent. Senator Miramant.

SENATOR DAVID MIRAMANT: Hello, I’m here.

MR. APPELMAN: New Hampshire, Cheri Patterson.

MS. CHERI PATTERSON: Here, good morning.

MR. APPELMAN: Ritchie White.

MR. G. RITCHIE WHITE: Present.

MR. APPELMAN: Dennis Abbott.

MS. TONI KERNS: I know he’s here, Max. Let me just.

MS. TINA L. BERGER: He’s self-muted right now.

MR. APPELMAN: We can circle back to Dennis. Continuing on with Massachusetts. Nichola Meserve.

MS. NICHOLA MESERVE: Present.

MS. KERNS: Max, Dennis has his microphone on now, so he should be able to speak.

MR. ABBOTT: I’m present.

MR. APPELMAN: Thank you, Dennis. Ray Kane.

MR. RAYMOND W. KANE: Present.

MR. APPELMAN: Representative Peake, hearing none I’ll mark Representative Peake as absent. Moving to Rhode Island.

MR. KANE: This is Ray Kane; Sarah Ferrara is her proxy. She should be on. I’ll text her.

MR. APPELMAN: Thank you very much. Sarah Ferrara

MS. SARAH FERRARA: Here.

MR. APPELMAN: Rhode Island, Conor McManus.

MR. CONOR McMANUS: Here.

MR. APPELMAN: David Borden.

MS. KERNS: David, you’re self-muted so you need to unmute yourself. It looks like he’s trying, Max.

MR. APPELMAN: Okay we’ll circle back. Eric Reid.

MR. ERIC REID: Yes.

MR. APPELMAN: Connecticut, I have Justin Davis.

DR. JUSTIN DAVIS: Here.

MR. APPELMAN: Bill Hyatt.

MR. WILLIAM HYATT: Present.

Proceedings of the Atlantic Menhaden Board Meeting Webinar – May 2020

MR. APPELMAN: Senator Miner. Mark Senator Miner as absent. Jim Gilmore, New York.

MR. JAMES J. GILMORE: Here.

MR. APPELMAN: Emerson Hasbrouck.

MR. EMERSON C. HASBROUCK: Here.

MR. APPELMAN: John McMurray.

MR. JOHN G. McMURRAY: I'm here.

MR. APPELMAN: Moving to New Jersey. Joe Cimino.

MR. JOE CIMINO: Present.

MR. APPELMAN: Tom Fote.

MR. THOMAS P. FOTE: Here.

MR. APPELMAN: Adam Nowalsky.

MR. ADAM NOWALSKY: Present.

MR. APPELMAN: Moving to Pennsylvania. Kris Kuhn.

MR. KRIS KUHN: Present.

MR. APPELMAN: Loren Lustig.

MR. LOREN W. LUSTIG: Good morning and thank you.

MR. APPELMAN: Thank you. Warren Elliott.

MR. G. WARREN ELLIOTT: I'm present.

MR. APPELMAN: Delaware now, John Clark.

MS. KERNS: He might be muted by the organizer. He does not have zeroes, Dustin.

MR. APPELMAN: John Clark can you hear me?

MR. DUSTIN COLSON LEANING: He's unmuted so he should be able to speak now.

MR. APPELMAN: John Clark might be having audio issues.

MS. KERNS: He is.

MR. APPELMAN: Okay, moving on, Roy Miller.

MR. ROY W. MILLER: Present.

MR. APPELMAN: Craig Pugh.

MR. CRAIG D. PUGH: Here.

MR. APPELMAN: Moving to Maryland. Lynn Fegley.

MS. LYNN FEGLEY: I'm here.

MR. APPELMAN: Russ Dize.

MR. H. RUSSEL DIZE: Here.

MR. APPELMAN: Allison Colden.

DR. ALLISON COLDEN: Present.

MR. APPELMAN: PRFC, Marty Gary.

MR. MARTIN GARY: Here, Max.

MR. APPELMAN: Now to Virginia, Steve Bowman.

MR. STEVEN G. BOWMAN: Here.

MR. APPELMAN: Bryan Plumlee.

MS. BERGER: He might be muted. Nope.

MR. APPELMAN: Bryan, you are self-muted if you're trying to speak. We'll circle back to Bryan. Senator Mason.

SENATOR MONTY MASON: Here.

MR. APPELMAN: North Carolina I have Steve Murphy.

MR. J. BRYAN PLUMLEE: I'm sorry, Bryan Plumlee here.

MR. APPELMAN: Great, thanks Bryan. Steve Murphey.

MR. STEVEN W. MURPHEY: Here.

MR. APPELMAN: Jerry Mannen.

MR. JERRY MANNEN: Here.

MR. APPELMAN: Great. Mike Blanton.

MS. KERNS: He's not in attendance.

MR. APPELMAN: Hearing none I will mark absent. South Carolina, Mel Bell.

MR. MEL BELL: Here.

MR. APPELMAN: Senator Cromer, hearing none I will mark as absent. Malcolm Rhodes.

DR. MALCOLM RHODES: Here.

MR. APPELMAN: Georgia, Doug Haymans.

MR. DOUG HAYMANS: Here.

MR. APPELMAN: Spud Woodward I know you are here. Representative Rhodes. Hearing none I will mark as absent. To Florida. Jim Estes.

MR. JIM ESTES: I'm happy to be here, Max.

MR. APPELMAN: That's great, Jim. I have William Orndorf, hearing none I will mark as absent. Representative Altman.

REPRESENTATIVE THAD ALTMAN: I'm here.

MR. APPELMAN: From U.S. Fish and Wildlife Service, Mike Millard.

MR. MIKE MILLARD: I'm here, Max.

MR. APPELMAN: Thanks Mike, and from National Marine Fisheries Service, Derek Orner.

MR. DEREK ORNER: Yes, present Max.

MR. APPELMAN: Do we have resolution for John Clark?

MS. BERGER: We're working on it right now. John, I sent you a message, and call the number I just sent you.

MR. APPELMAN: Do we have resolution with David Borden?

MS. KERNS: David is self-muted; he just needs to unmute himself. He might be either on the phone or away from his computer maybe. I don't know. I know he has sound though, because he did speak earlier.

MR. APPELMAN: Okay, other than those two Mr. Chair, we have full attendance. Everyone has been accounted for.

CALL TO ORDER

CHAIRMAN A. G. "SPUD" WOODWARD: Thank you Max, and thank you everyone for taking the time to join this, I guess first ever webinar-based meeting of the Atlantic Menhaden Management Board. Whenever I decided to accept the nomination for Vice-Chair and Chair, I had no idea that we would be in the situation that we're in now, but we will certainly make the best out of it. Please bear with us. We might have a few technical difficulties, but we will get through them.

APPROVAL OF AGENDA

CHAIRMAN WOODWARD: We have an agenda before us. Are there any recommended

modifications to the agenda as presented? Just raise your hand if you have a recommendation.

MS. KERNS: Joe Cimino has his hand up, Spud.

CHAIRMAN WOODWARD: Okay, go ahead, Joe.

MR. CIMINO: I just had a request to add something during other business, just an item for discussion. I would appreciate it, thank you.

CHAIRMAN WOODWARD: All right will do, thank you, Joe. Are there any other changes to the agenda?

MS. KERNS: I do not see any other hands up.

CHAIRMAN WOODWARD: All right then we'll accept it by consent. Thank you.

APPROVAL OF PROCEEDINGS

CHAIRMAN WOODWARD: Our next agenda item is the approval of the proceedings from our February meeting. Everyone should have had a copy of that. If there are any changes, modifications, corrections, please raise your hand so that we can get those on the record.

MS. KERNS: I do not see any hands up.

CHAIRMAN WOODWARD: All right, then we will consider the proceedings accepted by consent.

REVIEW OF ECOLOGICAL REFERENCE POINT WORKGROUP ANALYSIS

CHAIRMAN WOODWARD: We have a pretty simple agenda for our meeting this morning. We have really one item, and it's an informational presentation by Dr. Matt

Cieri, and it is a follow up to the motion to postpone at the February meeting on the acceptance of ecological reference points.

Just a little reminder of a motion made by Megan Ware, seconded by John Clark that passed the Ecological Reference Point Workgroup with some specific actions to evaluate the ecological reference points. What we've got this morning is a presentation to provide us information on the results of that analysis that you requested. I assume that Matt is onboard and ready to go.

DR. MATT CIERI: I am.

CHAIRMAN WOODWARD: All right very good, well you have the helm.

DR. CIERI: Can you all see my presentation?

MS. KERNS: Yes.

DR. CIERI: All righty. Thank you everyone. My name is Matt Cieri, and I'm with Maine DMR. I am the Ecological Reference Point Working Group Chair. I'll be providing you today with an updated analysis based around the Board's charges from what seems like a lifetime ago, the February meeting. Just to give you sort of an outline of where we're going today. I'm going to give you a little bit of an introduction, go over some of the additional analysis suggested by the Board, give you some of the results associated with that analysis, go over some of the uncertainties, some of the next steps in the process, as well as some questions and wrap up. Before moving on it might be useful to just simply go over the terms of references that the Board wanted to look at while we were going to the benchmark. These are the more pertinent, in terms of reference associated with the benchmark, and these included to develop models to estimate population parameters that take into account menhaden's role as forage.

Also, to develop methods to determine reference points and total allowable catch for Atlantic menhaden that account for menhaden's role as forage. Just to give you sort of a more introductory information. At the end of the benchmark the Ecological Reference Point Working Group recommended a combination of both the BAM single species assessment, and the NWACS-MICE model as a tool to help evaluate tradeoffs between menhaden harvest and predator biomass into established quotas.

As you guys probably remember, what we in the group called the rainbow plot shows striped bass biomass here on the Y axis, I'm sorry, striped bass F here on the Y axis, menhaden F here on the X. The current striped bass F target here at 0.2, the menhaden current F here as of 2017 in the dash line. There are higher striped bass amounts as abundance here in population size down near the 00 mark near the origin, and as you move up to the right fewer and fewer striped bass.

The solid lines here represent B target and B threshold. At the end of the benchmark assessment as we presented in February, the ERP had developed example ERPs. These were based on a maximum F for menhaden that would sustain striped bass at their B target, when striped bass were fished at their F target.

Then we had an example ERP threshold of the maximum F on menhaden that keeps striped bass at their B threshold when striped bass are being fished at their F target. In that example, all other ERP species were fished at their status quo or 2017 levels. Hopefully you guys sort of remembered this particular graph.

Here we have striped bass B over B target, so basically if this is at 1, striped bass biomass is at B target here, and then the

threshold value here in this dashed line. What you can see is in the gray we have the current status quo F for menhaden, which is down here. The ERP target is in this green solid line, and it's where this relationship line between striped bass and menhaden crosses the B target.

We also have the same thing for the threshold in which this dash line here is where this relationship line crosses the B threshold. Then we have the single-species BAM targets and BAM thresholds here in blue, with this being the target and this being the threshold. Hopefully that's a little bit of a refresher.

At the end of the work that we presented in February, we had defined sort of an ERP target and threshold based around that graph that I just showed. This sort of gives you an idea of the F target in that example was 0.19, with a threshold of 0.57. The current F as estimated in 2017 was 0.16. To meet the current striped bass management objectives, the F target and threshold for Atlantic Menhaden should be lower than the single-species target and threshold, and that the current F is below the target ERP target and threshold, indicating that the stock is not experiencing overfishing. At the end of that meeting the Board tasked the ERP Work Group with conducting additional runs of the NWACS-MICE tool, to explore some different sensitivities to ERPs under different assumptions of ecosystem conditions. These were the additional analysis that the Board wanted to see.

They included all other species fished at their 2017 status quo levels. This is the example ERP that we presented at the winter meeting. Another run was that all species were fished at their target that allowed them to reach their target biomass. Third was that all species were fished at an F level that would keep them all at their biomass threshold.

For a fourth, it was to have Atlantic herring and bluefish only fished at a rate that allowed them to reach their biomass target, while spiny

dogfish and weakfish were fished at their status quo levels. Speaking of status quo levels, this is pretty much what we're talking about. For status quo what was used for the 2017 status was that Atlantic herring was not overfished. It was below its target but not yet overfished.

Bluefish was both overfished and overfishing occurring, spiny dogfish was below its F target but above its SSB target, and for weakfish that the total mortality was too high and its status was depleted. Now to give you sort of an idea of this sort of ECOSIM ecosystem scenario sort of laid out as a table. Here is each one of the examples from 1 to 4.

For example, here is the ERP examples that we showed in February, and then here is Scenario 2, Scenario 3 and Scenario 4. This is each of the species and their F target, or status quo or F threshold. It's important to note here that for some of the stocks involved the F target and F threshold were defined as the F rates within the NWACS-MICE model that would let these species approximate their targets and thresholds respectively.

What this means is in some cases, for example for bluefish and for Atlantic herring, the F in the model was set at something different than what is in the management plan to allow these stocks to achieve either their B target or their B threshold as appropriate. Going over some of the results. What you can see here is we have the first scenario, the example ERPs that were presented in 2020 winter meeting.

We have the targets and thresholds that I went over a little bit earlier. Down here we have the probability of exceeding the ERP target using a quota of 216,000 metric tons, which was what was being analyzed. This gives the probability that that quota will

exceed the ERP target in 2019, 2020, and 2021.

As you can see, the relative probability is 60 percent 71, and 66. Also we have the probability of exceeding this particular ERP threshold, and that is in 2019 through 2021 is 0. For Scenario 2, all of the stocks at biomass target, and just sort of to sum up here, the negative aspects of rebuilding bluefish and spiny dogfish and weakfish as competitors here was outweighed by the rebuilding of Atlantic herring, which serves as sort of an alternative prey source.

Here the ERP threshold ended up being undefined, which I'll explain in a minute. If striped bass was fished at an F target in Atlantic herring biomass approached its biomass target, increasing F on menhaden wouldn't actually drive striped bass to its threshold over the ranges of F that we explored. This is Scenario 2, note that this is our F target under this scenario for ERP, and the probability of exceeding that using this 2016 quota was very, very low through 2019 through 2021, and just about 0 for 2019 through 2021 for the threshold.

For Scenario 3, kind of the opposite; everything at its biomass threshold rather than its target. Some of the positive aspects of reduced competition on striped bass were outweighed by negative aspects of lower Atlantic herring biomass. You can see the ERP threshold and targets here. Note that the target is like a tenth of what it was in the previous example.

Here the F threshold was defined, and you can see that the probability of exceeding a target with 216,000 metric tons is very high, around 100 percent. The probability of exceeding the ERP threshold however, was relatively low, 0 in 2019, and about 13 percent in 2020 and 2021. For Scenario Number 4, this is with Atlantic herring and bluefish at their target biomass.

This is nearly identical to Scenario 2, everything at target. Again, negative aspects of rebuilding bluefish are outweighed by rebuilding of

Atlantic herring. Now as you can see, the F targets is pretty much the same. Our F threshold ERP is still undefined, very low probability of exceeding the ERP targets, and almost no probability of exceeding the ERP threshold.

Just to sort of sum up and wrap up some of the results. Again, here are our scenarios. Here is the ERP target from each one of the examples. Here is the ERP threshold, and note here is our example at 119. For Scenario 2 and Scenario 4 the ERP target increases above the ERP example, but declines for Scenario 3.

Note that the ERP thresholds are undefined for Scenario 2 and for Scenario 4. It's important to note that when Atlantic herring are at their biomass and striped bass were fished at their F target, again the ERP threshold was undefined. I'm going to show you this graphically in a second. This is similar to the plot that I showed earlier with the blue and the gray dotted lines.

As you can see the status quo, the example ERPs are here in the gray. You can see this relationship line between striped bass biomass and Atlantic menhaden F crosses the B target and the B threshold, just as we talked about earlier. When everything goes to biomass target you can see we get this sort of straight-ish line.

When Atlantic herring is actually at a fairly high biomass, you actually over the Atlantic menhaden F that we evaluated, you actually never get to this B threshold line. When everybody is at their biomass threshold you can see that the line moves down and to the left here in the blue, and it crosses the B target for striped bass much closer to the origin, as well as when it crosses the B threshold.

You can see for bluefish and Atlantic herring at its target biomass they're again right on

top of each other with the results from Scenario 2. Into a lot of rainbow plots. I'm going to go over these rainbow plots. Each panel is each one of the scenarios, Scenario 1, Scenario 2, Scenario 3, and Scenario 4. Striped bass full F over here on the Y axis, menhaden full F down here. The horizontal dash line here that is your striped bass F target. Where it crosses here in B target and B threshold, here in for example in the example ERPs, this is going to be your ERP target, in this vertical dash line and the threshold. Moving from status quo, Scenario 1 to everybody at their biomass threshold. You can see that high striped biomass is down near the origin in purple, lower striped biomass here in the red. You can see that that line ends up getting pulled downward, right. The ERP target under this all at biomass threshold, Scenario 3 example, is really, really close to the origin and the threshold is moved a little bit to the left.

For me I always find it useful to look at where these lines intersect. You can see that when everybody is at their threshold the ERP targets and thresholds move a little bit to the left. Going over here to everybody at its biomass target, you get sort of a different sort of picture. For one thing, your ERP threshold ends up becoming undefined, which means that at a striped bass F at its target it never quite gets to its B threshold, no matter what F that you actually look at.

You can see in general that of course striped bass tends to be a little bit, there is not a lot of red associated with this, and the line actually ends up becoming a little bit more horizontal. Again, for Scenario 4 exactly the same picture as Scenario 2, where you see that it again doesn't cross the B threshold.

We're going to look at the results for bluefish. We've kept the lines exactly the same, sort of an F target for striped bass, as well as an F target for Atlantic menhaden. Here the colors indicate the abundance of bluefish. As you can see between Panels 1 and Panel 3, there isn't a whole lot of difference.

There is not much change, everything is pretty much red, which indicates that bluefish are still going to be overfished. Going on to Panel 2 and Panel 4 however, they are pretty much the same thing. You can see that there has been a dramatic change in bluefish, and that is because bluefish under that scenario they are fully rebuilt above their BMSY proxy.

You can see what that looks like. Note that at a striped bass F that is at its target, and a menhaden F near its target, you can see that we're looking at bluefish biomasses approximating 1.2 as opposed to 1, so above its biomass target. The same similar type of a plot for weakfish. Again, the color and these contours here represent weakfish biomass.

Again, striped bass target F from the vertical dash line, and the ERP target in the dashed line that is on the vertical. What you'll see is that there is not much change among any of these particular panels. In fact, none of the surface plots, none of the stuff that we did seemed to affect weakfish a lot. Those are our results. I now want to go over a little bit of the uncertainties.

The stocks here were fished at rates that allowed them to sort of approximate their biomass targets or thresholds, and this isn't going to line up with the values from the FMP, particularly for federally managed stocks. There are a couple of reasons for that. In order to get these stocks to their biomass targets or their thresholds, required in some cases a little bit lower F than what we see in the FMP.

Part of that is the result of using an EwE, using the NWACS-MICE model to predict things, also, this sort of discrepancy between that and single species assessments. Weakfish under any of the scenarios that we did didn't rebuild, in keeping with a lot of the high natural

mortality that the recent assessment has suggested, and that this M wasn't really something that we could attribute well to the predators or prey within the modeling structure that we looked at. As you probably gathered, the relationship between Atlantic herring and striped bass was really, really strong, and was sensitive in the model estimates based around herring vulnerability.

The model's response to herring predicted a higher consumption of Atlantic herring at high biomass. This was a little bit more than what we had expected. While we understand that herring is probably an important component of striped bass diets, we felt that the model may be overestimating the importance of Atlantic herring on a coastwide basis, especially on an annual level. As we get into next steps, we think that there is more work needed around this particular relationship.

It seems to be that the relationship between striped bass and menhaden is somewhat attenuated by the biomass of Atlantic herring. For next steps, you want to look at some additional analysis for the next Board meeting. These include exploring alternative herring biomass scenarios, and this is particularly relevant given the uncertainty of Atlantic herring recruitment.

Atlantic herring like Atlantic menhaden are a recruitment driven stock, and there might be some uncertainty in the future about recruitment events. It might be a good idea to take a look at potentially lower herring biomasses, and how that might affect the ERPs. We also really want to explore the sensitivity of model parametrization for Atlantic herring and striped bass relationship.

I think this is particularly important. We do think the model may be overestimating the importance of Atlantic herring. We know that they are important, but we're not quite sure if they're that important. We do want to take a look at some of the parametrization,

particularly look at some of the seasonal components associated with that.

We also want to explore scenarios in which some of those ERP focal species are fished at their actual single species F reference points, to see whether or not, for example, rebuilding of Atlantic herring or for bluefish is possible, without having to tweak the Fs further down, compared to what is in the federal FMP. After that I want to thank all the other collaborators on this project, everybody on the Committee, and take your questions.

CHAIRMAN WOODWARD: All right, thank you Matt that was a very informative presentation. It's a complex issue, and you have done a great job of distilling it down to terms that most of us can understand. Before we get into questions, I just want to make sure that we've got David Borden and John Clark back on audio, if you all would both chime in and let me know you're there.

MS. KERNS: David, you should be able to speak. You are self-muted right now, if you just unmute yourself.

MR. DAVID V. BORDEN: Yes, I'm here.

CHAIRMAN WOODWARD: How about John?

MS. KERNS: We might have to unmute him, one second. Dustin, you may well find him faster than me.

MR. COLSON LEANING: He's unmuted.

MS. KERNS: John, we cannot hear you.

MR. COLSON LEANING: His microphone is green, so he shouldn't be muted by any means. It's maybe something on his end with his software or computer.

CHAIRMAN WOODWARD: Okay, well we'll hopefully continue to work on that. In the meantime, if you have questions for Matt just raise your hand and get in the queue, and Toni will be bringing you up.

MS. KERNS: For the queue I have Lynn Fegley and then Allison Colden, John McMurray, Justin Davis, Nichola Meserve, and Emerson Hasbrouck, so Lynn you're up, Allison you're on deck.

MS. LYNN FEGLEY: I counted to ten before I raised my hand, hoping that I wouldn't be first. Thanks, Matt, for this presentation. As always, it's an incredible amount of work. I guess I have one question and one comment or request, and the first is when I saw this the results were pretty counter intuitive at first blush, because of the fact that when we went to the scenario where everybody is at their biomass target, the reference points went way up, or to say it another way.

You could very much liberalize your fishing on menhaden, in the scenario where everybody is at their biomass target, which is not what I expected. I understand that the reason for that is because if you rebuild herring it really doesn't matter what you do to menhaden. If your objective is that menhaden are not limiting to striped bass that objective is met solely by putting a lot of herring out there.

What that does is it gives us a situation where on one of your slides earlier in the presentation it says, to meet the current striped bass management objectives, the F target and F threshold for menhaden should be lower than the single species target and threshold. What I'm saying is, it's a little bit counterintuitive that we suddenly have an ERP that is much greater than the single-species reference point.

I would question that it is at all realistic, given the fact that we're probably not going to get herring back to its target biomass anytime in the near future, and given that the F that was

used in the simulation, or in this analysis, is the F from the NWACS model, not the FMSY that herring is managed under.

I guess my question is, how do we reconcile what would appear to me to be this unrealistic influence of herring. That is one. Two is, is there any scenario where an ecological reference point for menhaden could realistically be higher than the single-species reference point.

That leads me to my third, and I know this is a lot, I'm sorry. When we get to discussing these next steps, I would certainly like to understand for the outcomes of each of these next steps, what is the management utility of those for the Board. For example, if we for the first bullet explore alternate Atlantic herring biomass scenarios, given the uncertainty in future recruitment.

I think we know if we have continued low herring biomass those ERPs are going to look pretty different. To me that kind of seems obvious, so maybe I'm missing something. I think it's important for the Board, because this is so complicated, and because we could really start to travel down a rabbit hole. It would be good for us to understand for each of these next steps, what are the discreet pieces of information that the Board can then take and apply to its next management decision? Thank you for your patience that was a lot.

DR. CIERI: Okay, where do you want me to start first?

MS. FEGLEY: I guess start with the question about the influence of herring, the question about the striped bass objective, and whether an ERP could realistically be higher than the single-species reference point.

DR. CIERI: Theoretically it can. One of the things that when you start looking at ecological-based fisheries management is

when you start drawing in multiple different species as predators, of course you also have to start drawing in multiple different species as prey. There is the ability within an ecosystem for predators to swap from one small silvery fish to another.

I think that the ERP Work Group shared your concerns about the importance of Atlantic herring. I think part of that is actually a seasonal difficulty within the model. I do think it's something that we need to work on, and I think it is something that I think that we've outlined as something to do more sensitivity runs around, and to see if we can sort of look at the vulnerabilities.

That said, Atlantic herring is an important component of striped bass diets, particularly in certain times of the year and in certain locations. I wouldn't be too surprised that adding in alternate prey items into the model would change your reference points. But I agree, I don't think Atlantic herring probably is as important as the model is currently portraying it.

That is something that we want to work on. But it is certainly very possible that you can get ERP reference points that are less conservative than a single species, particularly if the estimate of natural mortality within a single-species model is quite a bit higher than what you would expect from an ERP model, particularly if you allow for prey switching. That is, I think your first question, so for your second question. Sorry.

MS. FEGLEY: No, you're good, sorry go on.

DR. CIERI: What was your second question? Sorry, I'm going to break this down, because I'm not sure if I can remember from one explanation to another. Your second question?

MS. FEGLEY: Yes, I apologize. The second one just really, you know we can mop it up. It just had to do with the management utility for each of these next steps.

DR. CIERI: Yes, and I think it's important to understand that particularly for federally managed species, by law they have to be rebuilt. I know certain species can languish below their BMSY or their BMSY proxy, but the long-term federal management is to have Atlantic herring and bluefish at their BMSY proxies.

I mean it is not unreasonable Atlantic herring, you know prior to these recent difficulties in recruitment, was at and actually well above its biomass target for decades. I don't think it is unreasonable to assume that that is the long-term place where Atlantic herring is going to be managed at.

I think the sort of tradeoffs between Atlantic herring biomass and menhaden removal is something that the Board has to sort of examine in their risk-appropriate approach. Do they set ERPs that account for lower herring biomass, even though Atlantic herring is probably going to end up going back to its BMSY value?

That is sort of a risk/reward calculation that the Board has to do. But what I think is really important is I think we do need to take a look at some of the biomass scenarios, which don't have herring quite as rebuilt as above BMSY, which you guys can then use as sort of a proxy to give you an understanding of what happens if herring isn't rebuilt, or isn't rebuilt in a timely enough fashion to mitigate your risks.

CHAIRMAN WOODWARD: Thanks Matt, I guess Allison you're up next.

DR. COLDEN: Thank you Matt for that presentation, can you all hear me?

MS. BERGER: Yes.

DR. COLDEN: Okay, thank you. Matt, I wanted to follow up to Lynn's question and

explore the next steps around the herring biomass a little bit, and then I have one other question. Do you expect, I think the way you just described it was somewhere in between, you know not quite rebuilt. Do you expect any of the herring scenarios that you would explore would fall outside of the scenarios that are already included, between Scenario 2 and 3 with herring at its threshold and herring at its target?

DR. CIERI: I think that is something that we can discuss as a Work Group. We can certainly put some in there for things that are lower than the herring threshold. I do want to reiterate that for those that aren't really familiar with the Atlantic herring FMP in Amendment 8. Herring F goes fairly quickly to zero, the further below the threshold that they get.

The fishing actually comes to pretty much a grinding halt not much further past the F threshold, according to Amendment 8. I think I wouldn't want to see sort of an analysis that was too much below the threshold, but it is something that we can do. If that is something that the Board would like to task us with.

DR. COLDEN: Okay, do you mean that the F comes to a halt when biomass dips below the B threshold, or are you referring to the F threshold?

DR. CIERI: No, the B threshold. It linearly declines to 0, as you move further and further below B threshold.

DR. COLDEN. Okay, and the other question I was hoping you could talk through or clarify a little bit is going back to the risk probabilities that were projected for each of the scenarios. Yes, if you could pull those up, I think that would be helpful. For the example ERP at the beginning, when you were reviewing the results you showed that the 2017 F rate was very close to the ERP target F. I'm just trying to reconcile that with the example ERP probability of

exceeding ERP target of 60 to 70 percent, so could you talk through that a little bit?

DR. CIERI: Yes, certainly. As you guys might remember from the single-species assessment, menhaden are projected to go down slightly, you know from 2009 through 2021. This just sort of reflects that, that this particular quota at 216,000 metric tons sort of gives you a probability here in 60, 71, and 66.

I think it's important to understand that for the ERP example that it was assumed that striped bass would be at its B target, and we all know that is not really the case, it's probably closer to its B threshold. But if striped bass were at its B target, this is the probability that you would get if striped bass was at its target. I don't know if Katie wants to sort of chime in, if there is something that she would like to say as well.

DR. KATIE DREW: Yes, thanks Matt. I just wanted to also add to that that the F of 0.16 that is approximately the ERP target, is the F from 2017, where we had a lower TAC. The 216,000 metric tons does represent a slight increase from where we were in 2017, and so that also contributes a little bit to like the higher probabilities of exceeding the ERP target in this scenario, compared to sort of where we were in 2017.

CHAIRMAN WOODWARD: All right, Toni, who is up next, and who is on deck?

MS. KERNS: We have Justin Davis with Nichola Meserve on deck.

CHAIRMAN WOODWARD: Justin, go ahead.

DR. DAVIS: I'll just start off by thanking the Working Group for continuing to produce this really great work, I just continue to find it really interesting. You know it really demonstrates that this ecosystem approach

is sort of performing as advertised, as it is presenting a way of making sort of quantitative decisions, you know tradeoffs, evaluating tradeoffs around management decisions for multiple species.

I've got a question about a way that I'm sort of interpreting Scenarios 2 and 4, relative to Scenario 1 that I would like to see if Matt agrees with.

I think one of the motivations for this Board asking for these additional scenarios was that the Scenario 1, presented back at the winter meeting assumed status quo F for bluefish and herring, when we knew that this Commission and some of our federal partners had taken actions to relax F for those species to decrease F. I remember at the winter meeting kind of asking a question about, well what does it mean if we set an ERP that assumes status quo F, but we know that we're making an attempt to reduce F?

Does that mean we're setting the ERP too conservatively, or not conservative enough? My interpretation looking at what is presented here in Scenarios 2 and 4 is that you could look at Scenario 1 as essentially a very conservative approach to setting the reference point, given the uncertainty about the success of the management initiatives to reduce F on bluefish and herring, and initiate rebuilding.

Both Scenarios 2 and 4 suggest that were we to successfully rebuild bluefish and herring, and I think this is primarily due to herring. That sort of in retrospect we could have fished menhaden less conservatively, but that if we do not have success in rebuilding herring and bluefish that essentially Scenario 1 reflects an appropriate fishing mortality for menhaden.

If we essentially have very little success in the near term in rebuilding those species, we will at least be fishing menhaden conservatively enough to achieve our management goals for striped bass. Does that sort of match with your

understanding, or is that a realistic way to interpret these results?

DR. CIERI: I think it's an appropriate way of interpreting some of the results. I think the ERP that we gave as an example is one in which it incorporates the current status of Atlantic herring, bluefish, spiny dogfish, and weakfish. That is a pretty safe bet. Again, I would sort of go back to what I said earlier. Long term I think the goal is to have Atlantic herring and bluefish rebuilt, as part of the federal management process. But having said that I believe you are correct.

CHAIRMAN WOODWARD: All right thank you Justin, and Nichola you're up, and who's on deck?

MS. KERNS: Emerson Hasbrouck.

CHAIRMAN WOODWARD: Ten-four, go ahead, Nichola.

MS. MESERVE: Thank you, Mr. Chairman and to Matt as well and the ERP for doing these additional analyses for us, which I agree with everyone it helps us get a better idea for how the example ERP is per it has the potential to perform. I have a bit of a question about the timeline. The assessment with ERPs is obviously met with a great deal of anticipation from the managers and the public alike, in terms of when we could implement an ERP.

We're looking at potentially another delay in adopting an ERP with some additional tasking to the Work Group, which looks very worthy to me. However, I wanted to check that we still have the potential for a timeline where the Board could be adopting an ERP, such that it could be used to set a TAC in 2021. That is my first question. Then the second part would be whether the ERP Work Group expects if their task would be additional analyses, if they expect to be in a position of reaffirming its

recommendation of the example ERP, or potentially changing that to some other recommendation.

DR. CIERI: I'm going to let Max or staff actually handle the first one, as far as timeline.

MR. APPELMAN: Yes, thanks Matt. Nichola, I would say that definitely there is an opportunity for the Board to set a TAC for 2021 with new ERPs. That timeline is not impacted here. You want to start thinking about moving down that road soon. Of course, if you wait until October for example, that might present some challenges. But as we stand right now that timeline is not impacted.

DR. CIERI: For the second one. Under our next steps, I think we can have some of that analysis, for I think all of it frankly, done by the August meeting, provided Dave doesn't kill me. But having said that we've already had discussions around some of these over e-mails, and some preliminary runs have been done, which we have to bring back to the group. I do think that we can have some of these explored by the August meeting.

MS. MESERVE: Maybe I'm asking you to look into your crystal ball a little bit here, but do you expect that those additional analyses will lead you to a position where you have a recommended ERP, whether it be the initial one or some iteration of it?

DR. CIERI: I'm not quite sure we will ever recommend something. We will present you the information and allow you to make your own choices, as always.

MS. MESERVE: All right that's fair, thank you Matt. If I could just follow up. I would say that I think the Work Group has done a great job here again. They are basically asking us to recommend, to task them with some additional analysis that is going to help us take the work that they make, and select an ERP to move forward with. It's my hope that the Board will

task the ERP Work Group with the three specific analyses that are in the memo, and have been presented in presentation today, and report back on that work at the August meeting.

CHAIRMAN WOODWARD: We'll address those next steps once we handle all the questions. Emerson, you're up, who is on deck?

MS. KERNS: We have John McMurray and then Cheri Patterson after Emerson.

CHAIRMAN WOODWARD: All right, go ahead, Emerson.

MR. HASBROUCK: Thank you Matt for your presentation, and thanks to the Working Group as well for all the work that they've put in this. Matt, in your presentation you had mentioned that the relationship between Atlantic Herring and striped bass is very strong. That the relationship between striped bass and menhaden seems to be influenced by Atlantic herring.

That adding in alternative prey species may also result in a higher F for menhaden (fade) point. To me as a biologist that just means what we kind of know with striped bass anyhow.

That they are very opportunistic feeders, and they are going to kind of prey on whatever is in abundance and whatever is easy for them to prey on. I'm wondering then why you think that the model may be influencing herring dependence with striped bass, rather than just actual biology. That is my question, thank you.

DR. CIERI: When we went through and we looked at this we were a little bit surprised. The diet data doesn't seem to line up with this level of dependence between striped bass and Atlantic herring, as you're well aware of. While a good chunk of striped

bass is in the Gulf of Maine, exposed to Atlantic herring in the summertime, and as well as much of the population in the winter, on the winter-feeding ground.

There wasn't as much diet data to back up the relationship between striped bass and Atlantic herring, as there is for striped bass and menhaden. I think this is something that we really need to look at. We believe that there is probably a seasonal component that is probably really important that we want to explore further.

But let's be frank. The overlap between striped bass and menhaden is a lot stronger than the overlap between striped bass and Atlantic herring. While we do think it's important, we think that this looks like it might be a little bit more important than we had initially seen from the diet data, and so we want to explore it.

CHAIRMAN WOODWARD: Is that good, Emerson? Do you need any follow up?

MR. HASBROUCK: The only follow up I might have, is I'm not sure what the diet data is that Matt is referring to, and where those samples were collected. Are they distributed pretty evenly up and down the coast, or were they taken primarily in those areas where striped bass and menhaden overlap?

DR. CIERI: A little bit of both. But I will sort of point out that one of our biggest contributors of diet for striped bass is, at least one study done by Gary Nelson, who works out of Mass DMF, who documented a lot of herring and menhaden in the diet of striped bass in the Gulf of Maine. The other is the Northeast Fishery Science Center Bottom Trawl Survey, which also takes a lot of guts, as well as the fins biomass survey.

There is a lot of information that goes into this model. Within the stock assessment you can take a look at the whole suite of information that we've brought into this. After a very large

and lengthy comprehensive look at almost all the diet studies that have happened on the U.S. East Coast for the last 30 years. We felt that there wasn't as much data to back up that sort of very strong relationship between Atlantic herring and striped bass, as there would be for menhaden.

MR. HASBROUCK: One follow up, please.

CHAIRMAN WOODWARD: Go ahead.

MR. HASBROUCK: Could it be then that in the model that Atlantic herring presents itself possibly as a proxy, in a way, or some of these other alternative prey species that are not included in the model?

DR. CIERI: No, I don't think that is really the case. We really did isolate, if you go through the assessment report, we isolated the major components of the ecosystem, and we even had a broader ecosystem model, the full model, which sort of gave the information that we needed to sort of hone down this information. No, I don't think that the model is forcing striped bass consumption on herring, as a result of not including other aspects of the ecosystem.

CHAIRMAN WOODWARD: John McMurray.

MR. McMURRAY: I might be getting ahead of the conversation here, but everything that has been said up to now bides that we are planning on just to keep tinkering with inputs. The questions have all been technical, and frankly a little difficult to follow. My question, is the working group planning on producing a simplified summary decision document with three or four options that the non-science folks and the public might actually be able to understand?

You know, we've worked on this an awful long time, and I think the expectation is to make a decision in August. Yes, I mean it

would be useful to have something like that a week or two in advance of the August meeting, and I'm just wondering if that is the game plan moving forward.

DR. CIERI: I'll defer to Max or Katie.

MR. APPELMAN: I was going to say maybe Katie should jump in and answer this one.

DR DREW: Yes, I think that is definitely the goal of what we would want to do. We want to make sure that when we come to August, people feel kind of comfortable understanding the performance of this model, and the potential ERP options. We're not necessarily recommending, oh this is the right option, because obviously it depends on kind of how the Board wants to assess risk and manage risk.

For example, that threshold scenario says that you have to forego menhaden yield, in order to keep striped bass at its target or its threshold, when herring or alternative prey species are at their threshold. As opposed to the situation where herring is at its target. As opposed to the situation where herring and other species are kind of continue at their status quo level.

What we want to provide is sort of a range of different, these are sort of the different effects that you get in different ecosystem considerations, and different management scenarios, and it's up to the Board to decide how risk averse they want to be, or how conservative or not conservative they want to be with menhaden.

But the goal is definitely to kind of provide the range and understand the limits in the sensitivity of the reference points, so you can understand here is how the example ERP performs under this set of assumptions compared to some of these other assumptions. Then the Board can decide what the most reasonable ecosystem is to try to manage, either in the short-term or in the long-term. Our goal is definitely to provide as accessible a

document as possible to the Board and to the stakeholders, to help understand this tool. There are certain decisions that we can't make for you, like how risky you want to be, or how conservative you want to be with menhaden. But we can help you understand.

If you want to be more conservative, here is the reference point that you're looking at, and how does that relate to a less risky alternative or a more risky alternative. For sure, when we come to the Board in August, we can show you all of this information. But I think you guys then have to be in a place where you are ready to make a decision, or ready to understand how risky or how conservative you want to be.

MR. McMURRAY: Mr. Chair, can I ask a follow up question?

CHAIRMAN WOODWARD: Go ahead.

MR. McMURRAY: Just to be clear. The intent is to provide those options in advance of your August meeting so that Commissioners can make a decision in August, because I think that is what the public is expecting, and I think we have to be clear about that goal now.

DR. DREW: Yes. Our intent is to complete all of the work that we have suggested. We have identified certain areas that we feel are uncertainties that we want to really flesh out from a technical standpoint, so that we can be confident in the information we're giving you in August. You know obviously I don't think we can control the Commissioner's concerns or uncertainties, or things like that. If people come to the Board and say, oh I want to see more work, oh I want to see more work.

That is a Board decision, and certainly you guys can have that discussion. But our

intent is to provide as structured and as accessible a document as possible before the August Board meeting, with materials or supplemental materials, so that you can see everything that we've sort of recommended to be explored laid out for you, and understand the range and the sensitivity of these reference points, and understand sort of some of your options or considerations for levels of risk or uncertainty, and then can make that decision if you the managers feel that you're ready to go forward at that point.

MR. McMURRAY: That is useful, thank you.

CHAIRMAN WOODWARD: I'm going to speak to this later, but since it has sort of come up, I'll go ahead and address it now. It is certainly my intent as your Chair, to bring us to the decision point in August, whether that is an in-person meeting or a webinar meeting, which none of us know at this point.

Yes, at some point we have a motion in limbo that has been postponed that has got to be addressed, and we've got to move this forward. It is certainly my intent to get us across the finish line, and to do whatever is necessary as preparatory work, so that whenever we do have that August meeting, and whatever format it is, everybody is at a point where they can make a decision. Okay, Cheri you are up. Is there anybody else in the queue?

MS. KERNS: Then we have Roy Miller and Justin Davis does have his hand up. I think it's a new question.

CHAIRMAN WOODWARD: Well I certainly don't want to stymie questions, but we are already 17 minutes over time, and I don't want to cut into anybody's lunches, so we'll do the best we can. But I'll just ask everybody to keep your questions succinct and on point, so you said Roy and then who else?

MS. KERNS: Then Justin after Cheri, but I also wanted to let you know that there are two

members of the public that have either raised their hands or sent in questions.

CHAIRMAN WOODWARD: Okay, very good. Okay Cheri, you're on.

MS. PATTERSON: Thank you, Matt. Every time I get more information, I glean more information from your presentations, and I really do appreciate all this hard work that you and the Work Group have done. Can you go to the last slide, please? Mr. Chair, I would like to entertain a motion when you feel that it's ready. I understand that you have additional questions, potential technical questions beyond me, and then if you care to come back, I can make a motion.

CHAIRMAN WOODWARD: Yes, I'll tell you what. If you'll just hold back and let's see what else we've got, but I'll certainly get back to you on that. Okay Roy, you're up.

MR. MILLER: Just very quickly. This strong relationship between Atlantic herring and striped bass, Matt, being higher than expected. I wonder. I'm assuming that we're referring to female striped bass biomass primarily, rather than total striped bass biomass, or I may have that wrong. Is it total striped bass biomass, are the males included?

DR. CIERI: Yes, the males are included.

MR. MILLER: Okay. Well, I'm wondering if we're getting a misleading picture. Knowing that Atlantic herring are not terribly abundant in Delaware Bay and in Chesapeake Bay, and male striped bass, because of their delayed migrational habits, are much more dependent on Atlantic menhaden than they would be on Atlantic herring.

I wondered if that was the reason that this strong relationship between herring and

striped bass might throw us off track a little bit. We should look at that, since in the producer area portions of the range of striped bass we're basically talking about menhaden, and not Atlantic herring. Thank you.

DR. CIERI: I think it's important to note that the EwE model, the NWACS model, doesn't really have the ability to do spatial resolution. We can probably do something looking at some temporal resolution, although that is something that we've only discussed as recently as a Work Group. The frame to look at for the NWACS model is coastwide across the entire year. Drilling into anything more specific, either by particular sexes or in particular areas, it is just not possible with this type of a modeling approach.

CHAIRMAN WOODWARD: All right, Justin.

DR. DAVIS: I have a bit of a process question that it is possible Cheri is going to address this with her motion. But at the last meeting the motion to postpone was sort of until a certain time, and the motion said that we were postponing until the Working Group came back with the result of the analyses that they presented today.

I'm just wondering if this Board needs to take some affirmative action to postpone the postponed motion again until August, or if we can just at least do that via sort of Board consent, and get it in the record, even though we don't have a button here for nodding your head. We can't just look around the room and see if that is the consent of the Board. But I'm just wondering if we need to get it in the record that we're postponing that motion again.

CHAIRMAN WOODWARD: Good question. Max, do you think we need to go on record as saying the motion continues in postponement?

MR. APPELMAN: I'm going to look to Toni or Bob on this one, but my initial reaction is that we don't need any motion here, that it was a

Commission leadership decision to make this particular Board meeting informational only. But, I again defer to Toni or Bob to chime in or correct me.

MS. KERNS: I think that because the Work Group still had uncertainties with the analyses that they presented. I would say that the information being presented is still continued, and that until we have the additional work from them, we consider the motion postponed. But if you want to put it on record, Spud, you could say that or what I have said is on record.

CHAIRMAN WOODWARD: Yes, I think her explanation is whatever Max said, but I appreciate you bringing it up, Justin. We'll make sure we don't get ourselves crossways. Okay, any other questions? If not, I'm going to go to Cheri. Is anybody else in the queue, Toni?

MS. KERNS: Right now, we just have members of the public that are in the queue.

CHAIRMAN WOODWARD: All right, Cheri, I'm back to you.

MS. PATTERSON: I would like to make a motion that the Board task the ERP Work Group to continue with analyses to address the listed recommendation scenarios before the August Board meeting.

CHAIRMAN WOODWARD: Very good, do I have a second. If so, just raise your hand so you can be identified by Toni.

MS. KERNS: We have Nichola Meserve with her hand up as a second.

CHAIRMAN WOODWARD: Okay.

MS. PATTERSON: Task the ERP Work Group to continue with analyses to address the

listed recommended scenarios before the August Board meeting.

MS. KERNS: Spud, while Maya gets these. Because this is a TC tasking, you could try to see if anybody disagrees if you would like to, instead of calling the roll. Commissioners could raise their hands by disagreeing, I guess. We don't always do tasking.

CHAIRMAN WOODWARD: All right. Is this your motion, Cheri, is this accurately portrayed?

MS. PATTERSON: No, that is fine with me, thank you.

CHAIRMAN WOODWARD: All right, so we have a motion before us to task the ERP Work Group to continue with analysis to address the listed recommended scenarios before the August Board meeting. Is there any opposition to the motion as presented? If so, raise your hand. I don't see any raised hands, and we will consider it is supported unanimously. We will move on.

MS. KERNS: Spud, really quick. Justin Davis, you do have your hand raised. I don't know if it is left over from before. Okay, he took it down, so I think it was just leftover.

CHAIRMAN WOODWARD: Very good, all right motion passes unanimously. All right thank you Matt, thank you Katie. We appreciate the questions from everybody.

OTHER BUSINESS

HYDROACOUSTIC SURVEY TASKING

CHAIRMAN WOODWARD: All right we're going to move on to other business. Joe, you've got an item you want to bring before the Board?

MR. CIMINO: Yes, thank you Mr. Chair, and thanks to Matt and the ERP for all the work they've done, as well as the SAS and TC to date, getting us all this important information. Those

of us that have been dealing with menhaden for a while know that past peer reviews, plural not just the most recent, have pointed out that despite the volumes of surveys used and reviewed for our assessments. You know we still lack a survey designed to target menhaden.

Both the peer reviews and the CIEs have pointed out that there needs to be a sampling of larger, older fish that are sampled across the range. There is a Saltonstall-Kennedy Grant that is a proposal that is out there right now that does intend to do that to some extent. It's a hydroacoustic survey, with principal investigators from the Chesapeake Bay Lab of University of Maryland, as well as co PIs from VIMS and Normandale.

Industry collaborators from Cape May New Jersey, since this is a Mid-Atlantic survey design, with industries assistance and federal partners from National Marine Fisheries Service at the Beaufort Lab, Northeast Fisheries Science Center, state partners with New Jersey's Marine Fisheries Association.

This hydroacoustic survey is a chance to get field confirmation of overwintering adult menhaden in the Mid-Atlantic region, which could shed some light on the existence of spawner biomass in the offshore wintering areas. It is an important component of our needs for the assessment. I believe that the Board would benefit greatly if the TC was able to review, well the survey methodology both from the proposal, as well as from the peer review article put out by Drs. Liang, Nessler, and Wilberg from Chesapeake Bay Lab that we can provide for the Technical Committee. I would hope, I have personally three specific asks for the TC. That they would do a review of the survey design to assess the magnitude of the overwintering menhaden biomass off the coast of New Jersey, to gather biological

samples on older fish in the northern portion of the range, and also reviewing it and providing information. If it's a decent index of relative abundance in the region, if this survey was able to be conducted long term. I just wanted to put that out there for Board consideration as a task to the TC.

CHAIRMAN WOODWARD: All right thank you, Joe. Does anybody have any questions for Joe on this, since it is a tasking recommendation, we do not have to submit it in the form of a motion, unless there is some great concern about this. If so, raise your hand, if you have questions.

MS. KERNS: I don't see anybody with their hand raised, except for a member of the public, but that person has had their hand raised for a while, so I think it was on other issues.

CHAIRMAN WOODWARD: We'll get the public comment in just a second. Seeing no concerns or opposition to that then Joe, we will certainly get your recommendation to the Technical Committee.

MR. CIMINO: Many thanks.

CHAIRMAN WOODWARD: All right, well we are 30 minutes past our cut off time. We've got another Board meeting coming up shortly. Folks need to have lunch. We have two people in the queue for public comment. I will accept that public comment, but we're going to need to keep it brief, so three minutes for public comment. Toni, if you will just kind of help me keep up with that please. Who have we got up for public comment?

MS. KERNS: Will do. Steve Bowman did just raise his hand, so before we go to the public, do you want to go to Steve?

CHAIRMAN WOODWARD: All right, Steve.

MR. BOWMAN: Good afternoon, Mr. Chairman. I'll be very, very brief. I just want to take this

opportunity on the behalf of the Commonwealth of Virginia. You all may know, and most people do know, but I just wanted to get it on the record that we appreciate the patience of the Commission through the past almost two years, as we have dealt with the compliance issue with the Commonwealth of Virginia.

I'm just pleased to report to this Board. If you did not know that the General Assembly of the Commonwealth of Virginia transferred control of the menhaden fishery from the General Assembly to the Marine Resources Commission. At its April 28th meeting, the Marine Resources Commission unanimously adopted a regulation that has Virginia adopt the amended cap as it relates to menhaden.

I just wanted to thank everyone involved, the Commission for their patience during the time of patience, the Commission for their resolve, because if it were not for the resolve of the Commission to move forward, I believe with the last motion that took Virginia out of compliance, we would not have been in as strong a position as we were, as we move forward to attempt to have control moved to VMRC. On top of that. After that occurred, I would like to thank the stakeholders that were involved, recreational fishery and industry, and the Northam administration, Governor Northam and Secretary Strickler, and all who worked very, very diligently to get us where we are today.

I think that removes one less element of conflict that we will have to deal with as we move forward to manage this fishery in a productive manner. I just wanted to get that on the record, and thank you all very, very much for your patience, your resolve, and your assistance. I know we're going to be moving in the right direction, so thank you very much, Mr. Chairman.

CHAIRMAN WOODWARD: Thank you Steve, and kudos to you and your team for your persistence in trying to get this situation resolved. I think we're all much happier now of where we are versus where we were. As you said, it's one less point of conflict for us to deal with as we try to move menhaden management forward. With that public comment, Toni. What have we got?

MS. KERNS: We'll start with Jim Uphoff, Jim I'm unmuting you.

MR. JAMES H. UPHOFF, JR.: Oh, I'm sorry that was just a mistake, I was pushing the wrong button. My apology.

MS. KERNS: Tom Lilly, Tom you are not connected, so I won't be able to unmute you. Tom, you should have received an audio pin from the webinar, so if you could enter that on the phone, do the pound, then the three-digit key, and then the pound that should let you be unmuted.

CHAIRMAN WOODWARD: Everyone should have received the written comment from Mr. Lilly, so we do have that.

MS. BERGER: Tom, in order for you to speak you have to enter an audio pin of 688#.

MS. KERNS: He still hasn't entered it yet, Spud.

CHAIRMAN WOODWARD: All right well in the interest of moving on, we've got ACCSP at one o'clock, so we're already impinging on people's flex time. Instead we do have some written comments from Mr. Lilly, I'm sure his verbal comments would be basically kind of similar to those. Sorry about that Mr. Lilly. We're in a whole new world here, and it comes with some technical difficulties.

ADJOURNMENT

CHAIRMAN WOODWARD: Is there any other business to come before the Atlantic Menhaden Management Board?

MS. KERNS: No hands are raised, Spud.

CHAIRMAN WOODWARD: All right very good, thank you all for your patience, for making this all work, and we're all optimistic that this is a temporary situation. Hopefully we can be back face-to-face for our next meeting, but if not, we will keep things moving, and as always, I'm available if you have questions and comments, things that will help me in my job as Chairman. Don't hesitate to let me know, and with that we will stand adjourned.

(Whereupon the meeting adjourned at
12:15 p.m. on May 5, 2020)