

**PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC STRIPED BASS MANAGEMENT**

**The Westin Crystal City
Arlington, Virginia
May 1, 2018**

Approved August 8, 2018

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1. **Approval of agenda** by consent (Page 1).
2. **Approval of proceedings of February 2018** by consent (Page 1).
3. **Move to task the Stock Assessment Subcommittee to develop a range of F (fishing mortality) and SSB (spawning stock biomass) reference points as part of the 2018 Benchmark Stock Assessment as recommended by the Board Guidance Workgroup** (Page 9). Motion by Mike Luisi; second by John Clark. Motion to substitute (Page 11).
4. **Motion to substitute: To task the Stock Assessment Subcommittee to develop biologically-based threshold reference points (F and biomass) that considers the objectives of the FMP. Furthermore, develop a range of target reference points F and Biomass that would provide a range of risk that the Board would consider in achieving the objectives of the FMP** (Page 11). Motion by Doug Grout; second by Pat Keliher. Motion fails (Page).
5. **Motion to amend: to add “and develop biologically-based threshold reference points (F and biomass) that consider the objectives of the FMP. Furthermore, develop a range of target reference points (F and biomass) that would provide a range of the risk that the Board would consider in achieving the objectives of the FMP.”** (Page 15). Motion by Mike Luisi; second by Doug Grout. Motion carried (Page 16).

Main motion as amended: Motion to task the Stock Assessment Subcommittee to develop a range of fishing mortality and spawning stock biomass reference points as part of the 2018 Benchmark Stock Assessment as reference points (F and biomass) that consider the objectives of the FMP. Furthermore, develop a range of target reference points (F and biomass) that would provide a range of risk that the Board would consider in achieving the objectives of the FMP. Motion carried (Page 16).

6. **Move to adjourn** by consent (Page 21).

ATTENDANCE

Board Members

Patrick Keliher, ME (AA)	Loren Lustig, PA (GA)
Steve Train, ME (GA)	Andy Shiels, PA, proxy for J. Arway (AA)
G. Ritchie White, NH (GA)	John Clark, DE, proxy for D. Saveikis (AA)
Doug Grout, NH (AA)	Roy Miller, DE (GA)
Sen. David Watters, NH (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Dennis Abbott, NH, Legislative proxy	Ed O'Brien, MD, proxy for Del. Stein (LA)
Raymond Kane, MA (GA)	Russell Dize, MD (GA)
Mike Armstrong, MA, Chair	Mike Luisi, MD, proxy for D. Blazer (AA)
Rep. Sarah Peake, MA (LA)	Steve Bowman, VA (AA)
David Borden, RI (GA)	Rob O'Reilly, VA, Administrative proxy
Jay McNamee, RI (AA)	Chris Batsavage, NC, proxy for S. Murphey (AA)
Matt Gates, CT, proxy for P. Arrestad (AA)	Doug Brady, NC (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)	Michael Blanton, NC, proxy for Rep. Steinburg (LA)
Emerson Hasbrouck, NY (GA)	Bryan King, DC
John McMurray, NY, proxy for Sen. Boyle (LA)	Martin Gary, PRFC
Heather Corbett, NJ, proxy for L. Herrighty (AA)	Derek Orner, NMFS
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Sherry White, USFWS

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

Ex-Officio Members

Staff

Robert Beal	Max Appelman
Toni Kerns	Jessica Kuesel
Katie Drew	Caitlin Starks

Guests

Rep. Thad Altman, FL (LA)	Colleen Giannini, CT DEEP
Joe Cimino, NJ DEP	Robert Newberry, DelMarVa Fishermen Assn.

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, May 1, 2018, and was called to order at 1:15 o'clock p.m. by Chairman Michael Armstrong.

CALL TO ORDER

CHAIRMAN MICHAEL ARMSTRONG: Good afternoon everyone. I would like to call to order the Atlantic Striped Bass Management Board.

APPROVAL OF AGENDA

CHAIRMAN ARMSTRONG: First order of business, approval of agenda, does anybody have any changes to the agenda? We do have an item or two that we'll include in other business at the end, so approval of the agenda.

APPROVAL OF PROCEEDINGS

CHAIRMAN ARMSTRONG: You've all read the proceedings I'm sure, and do you have some changes? Yes, Colleen.

MS. COLLEEN GIANINI: I just wanted to make a note that on Page 24 of the February 18 meeting minutes, I did not represent the state of New Jersey in the final roll call.

CHAIRMAN ARMSTRONG: So noted.

PUBLIC COMMENT

CHAIRMAN ARMSTRONG: At this time there is an opportunity for public comment for items that are not on the agenda. We have no one signed up; is that correct, Max?

MR. MAX APPELMAN: We have one.

CHAIRMAN ARMSTRONG: Oh I'm sorry, we do; Captain Newberry, could you come on up to the microphone?

MR. CAPTAIN ROBERT NEWBERRY: Mr. Chairman and members of the Committee, my name is Captain Robert Newberry; I'm Chairman of the DelMarVa Fisheries Association. First of all as a comment that I have, I would like to congratulate Mr. Russell Dize as the new appointee from our Governor of Maryland to sit on the ASMFC. It's good to have him on board, he's been here before and I think he'll be good to work with.

Number two, I would also like to thank this Panel for the unanimous vote in the conservation equivalence that our Department of Natural Resources worked hard on that is now going through the process in Maryland. I would like to thank you very much for that vote. It's going to be very helpful for what we're facing in Maryland; so I want to thank you very much for that.

Also, looking forward to possibly down the road of addressing – it's kind of a touchy issue – but the accountability for the recreational fishery, not only in the bay but coastwide for striped bass. I thank you very much for taking the time and letting me speak. Thank you very much.

PROVIDE GUIDANCE TO THE STOCK ASSESSMENT SUBCOMMITTEE REGARDING BIOLOGICAL REFERENCE POINTS FOR THE 2018 STOCK ASSESSMENT

CHAIRMAN ARMSTRONG: Are there any other public comments? Seeing none; we'll go to the first agenda item, Providing Guidance to the Stock Assessment Subcommittee Regarding Biological Reference Points. As you know, we formed a working committee last meeting and we met several times. We sent out a survey that most of you responded to; and Max is going to summarize the report from that group, and summarize the results of the survey.

MR. APPELMAN: Just to refresh everyone of how we got to where we are. Of course there is a benchmark assessment currently underway for striped bass. One of the terms of reference

for that benchmark is to update or redefine biological reference points.

I think everyone is also aware that we've heard some concerns from members around this table that the current reference points may be too conservative and/or are restricting fishing unnecessarily; which has raised questions about whether the FMP objectives have changed since the implementation of Amendment 6, and maybe those acceptable risk levels have changed as well – an example being the balance between preserving biomass versus allowing fishing, and determining that best balance is ultimately a Board level decision.

With all of that in mind, the Technical Committee and the Stock Assessment Subcommittee came to the Board in October of last year requesting guidance regarding the Plan objectives, and the types of reference points that they should pursue in the upcoming benchmark.

Initially, the Board hoped to have a workshop but with budget and time constraints we couldn't really make that happen. Instead, the Board decided to establish a workgroup of Board, Advisory Panel and Stock Assessment Subcommittee members to develop guidance recommendations for the Board to consider today.

I want to just take a minute to clarify that the goal of this exercise is to give the Stock Assessment Team a starting point for developing reference points. There are a lot of different roads that the stock assessment could have gone down regarding reference points; and I think everyone would agree, no one is interested in exploring a set of reference points that this Board isn't interested in.

Again that was the goal of this exercise; and if any new management objectives did come to light from this, or if new reference points are identified at the end of the assessment process, the Board would still need to go through the adaptive management process to adopt those

objectives or reference points into the management program. This is just helping the Stock Assessment Team develop reference points in the assessment.

Here is a snapshot at the benchmark timeline right now. September of last year was the data workshop; that is what sort of spawned this whole exercise. Then today, the Board will give some formal guidance to the stock assessment subcommittee regarding reference point development; which the Stock Assessment Team will take into the modeling workshop in a few weeks. Then as we heard yesterday the stock assessment is on the SAW/SARC schedule for this November. In February of 2019, the Board can anticipate reviewing those findings and consider a management response at that time.

This is a glance at our membership of the Board Guidance Workgroup; so WG is going to denote Workgroup in my presentation. We tried our best to ensure all interests were represented on the Workgroup, but remember that membership was volunteer based. It was also limited to five Board members and five AP members; but you can see that we have a pretty good spread geographically amongst the Board and Advisory Panel. We also had our Stock Assessment Subcommittee Chair, our Technical Committee Chair, and two other stock assessment members.

Again, the Workgroup was tasked with developing reference point guidance recommendations. To do that as our Chair pointed out, the Workgroup developed a survey and sent that to all Board and AP members to solicit their input and facilitate that process. The survey asked 15 different questions, most of them were multiple choice, but some were fill in the blank or write-in questions, regarding what member's value most from the striped bass resource and fishery and regarding overall satisfaction with the state of the stock and management under Amendment 6. The results of that survey were then used to develop these recommendations; which I'll go over.

If you didn't take the survey or haven't seen it, there is a copy in your briefing materials along with a summary of those results, and an appendix with all of the write-in responses that were received.

I'm just going to highlight some of the major take-home points from the survey results; but feel free to dig into your briefing materials for more details.

Okay, so respondent demographics starting with the Board. We had pretty good turnout; 27 Board members completed the survey, and we had representation across all jurisdictions except for the District of Columbia, and that's what this pie chart is showing you. There is no meaning behind the colors; it's just trying to spice up my presentation a little bit. It was pretty dull; just a visual representation. Then looking at the bar chart, this is showing you all the sector categories that you could check off in the survey; again, just showing you that we had representation across all those sectors. But that big bar on the right side that is your Administrative Commissioners, so predominately Administrative Commissioners.

Looking at our Advisory Panel respondent demographics, we had nine AP members complete the survey, which is somewhat a product of the size of the AP. It's a small group, and so that's on par really for AP participation. All sectors were represented, as you can see from the bar chart there; but the bigger bars, the top two, are representing the recreational sector; mostly recreational representation there. And then the pie chart showing you the major fishing areas that were represented from Chesapeake Bay, coastal Maryland, coastal Delaware, up Delaware Bay, Long Island Sound all the way up and around Cape Cod too; so a pretty good turnout.

Of course the ultimate goal of this survey was to hone in on some commonalities across different regions and sectors and user groups. However, and probably not surprising to many of you, the survey was unable to identify an

overwhelming majority regarding general satisfaction with the management of striped bass, current management triggers, or with the current reference points. I'm showing these figures to give you another visual of what I mean by overwhelming majority. These three figures ask the three primary questions in the survey.

Left to right the questions are, are you satisfied with the state of the stock and management; Question 2 is, are you satisfied with the current management triggers, and the right figure Question 3, are you satisfied with the striped bass reference points? The left hand column on each figure is the yes column; the right is the no column. Then the blue is Board and the orange is AP. Again, the take home is that here is no overwhelming majority. There are some slight majorities on the second two charts, but overall it's pretty split.

If we hone in a little bit on respondents that are not satisfied with the current reference points, some of those responses show some commonalities there that the biomass target is too conservative and/or unachievable under current conditions; and that being not just environmental conditions, but also conditions of other predator and prey populations was cited in those responses.

Another commonality there is the development of stock specific reference points being very important to these respondents; also something we've heard around this table. Additionally, survey results indicated an interest in revisiting the pre Addendum IV reference points. We remember with Addendum IV, it implemented a new set of F reference points, fishing mortality reference points that were designed to achieve the respective biomass targets and thresholds over the long term. But in short, under Amendment 6, the F target and threshold were a bit higher; and it seems that that sort of situation was desirable among these respondents.

Then my last bullet here is that there didn't appear to be a strong preference for the type of reference point; whether that be an empirical or historical-based reference point, or a model-based reference point, as long as they met the management objectives.

When asked to rank the current management objectives from most important to least important, there was pretty high agreement between the Board and AP respondents. What I'm showing you here is the management objectives as they appear in the management plan. There are seven of them and they are listed as such on the X-axis there.

Then, the higher the bar, the more important that objective was to the survey respondents. Management Objective Number 2 stood out as the most important; that one is to manage F to maintain an age structure that provides adequate spawning potential. No matter how you slice and dice the results, this stood out as the most important objective.

The second, third and fourth most important differed a little bit, but pretty in line with each other, and then the other commonality here is 5, 6, and 7. Those also stood out as the least important objectives; no matter how you group the respondents together. Same concept with the figure here, there was less agreement between the Board and the Advisory Panel respondents when it came to ranking factors of a viable and quality fishery, although there was some overlap. This is showing you the Advisory Panel respondents. Their top three factors of a quality and viable fishery were pretty similar in nature. Broad age structure, high abundance of market size fish, high abundance of trophy size fish, so I guess the take home there is a broad age structure and a lot of each age, right? The overlap between the Board and the AP was that broad age structure factor; but they diverged with their second and third most important. High catch rates and stability and consistency in regulations ranked as important factors to the Board respondents.

A couple caveats to consider here, low sample size, which I think is more of a product of the size of the Board and the size of the Advisory Panel. Nonetheless, it's something to point out. You didn't see any robust statistical analyses around these results. It's pretty much taken at face value. Also the Workgroup brought this up a couple times, we try to get equal representation across all the different fishing sectors and user groups, but as far as our respondents, one sector in particular, the commercial sector, was really underrepresented in those responses.

Moving on to Workgroup recommendations, after reviewing all the results, having a couple conference calls, the Workgroup recommends that the Stock Assessment Subcommittee develop a range of F and SSB reference points, sort of reflecting that there was no overwhelming majority. But at least we can give some expectation to the Board by making this recommendation.

As part of this we would be tasking the Stock Assessment Team to revisit current target and threshold definitions; so as they're defined in Addendum IV. Also revisiting the pre-Addendum IV approach, as they were under Amendment 6. Also the Stock Assessment Team should continue to strive for development of stock-specific reference points where possible. That of course stood out amongst the survey results; and we've heard that around the Board table as well.

Then, an important part of this is for the SAS to clarify the various implications of the different reference point values that they bring forward. This would ultimately allow the Board to explore the tradeoffs of different management objectives and different characteristics of a quality fishery following the assessment.

ADVISORY PANEL REPORT

MR. APPELMAN: Mr. Chair, if I could add one thing while I still have the floor. The Advisory Panel also met via conference call to review the

Working Group's recommendations and the survey results. This was the APs opportunity to develop its own recommendations if warranted.

Based on discussion, it was also clear that there was no overwhelming majority. It seemed, depending on where you're fishing and what time of year you're fishing, you're seeing very different things on the water. Some AP members wanted to stay the course with management; others felt regulations could be relaxed a little bit. In the end the Advisory Panel supports the Workgroups recommendations to explore a range of fishing mortality and spawning stock biomass reference points that would allow the Board to explore tradeoffs of different management objectives. That is the end of my presentation. I'll take any questions.

CHAIRMAN ARMSTRONG: Any questions from the Board members? Rob O'Reilly.

MR. ROB O'REILLY: Thank you Max. A question is what exactly is the pre Addendum IV alluding to? For example, the SSB target certainly way before 2014 and implementation of Addendum IV in 2015. There were many thoughts that you showed in one slide talking about essentially the target being unreachable; that is my words there.

But those thoughts went back quite a way before pre Addendum IV. You know the 1.25 times the 1995 SSB target was a cause of concern for several members of the Board going back quite a bit. When you say pre-Addendum IV, how far back are you talking about?

MR. APPELMAN: I think those comments were really in relation to the F reference points. The 1995 value they we're referring to for biomass that has been the biomass reference point for a while now. But the change between Amendment 6 was really the period we were talking about here; and Addendum IV was a change in the F reference points, getting those in line with each other. It basically brought down that F value. I think those comments we

we're hearing is to have a higher F, and I guess my words, allowing a little more fishing to happen.

CHAIRMAN ARMSTRONG: Follow up, Rob.

MR. O'REILLY: The slide we have up right now, and I'm going to agree with you, but at the same time the slide we have up now talks about based on historic SSB, which I assume goes all the way back to 1995 SSB. I don't know. But you did have a comment up there on one of the slides, which talked about and I'll paraphrase, dissatisfaction with the SSB reference point. I'm hoping that some others will also speak up about this. But I think that was definitely something that has been a concern for a number of years; not just the fishing mortality rate. I mean that's my perspective.

MR. APPELMAN: That specific bullet is really getting at the concept of, and you know that is why it says "and/or F levels." It's not just talking about spawning stock biomass. It's the notion that there was a time period that most people would think was a good condition of the stock. What happened under Amendment 6 is we took that biomass level. But perhaps looking at the F level instead and having our biomass reference points match that. That is what this is getting at. It's looking at basically the definition of what it was under Amendment 6 versus what it is now.

CHAIRMAN ARMSTRONG: John.

MR. JOHN G. McMURRAY: This slide that is up there now Max, recommend SAS develop a range of F and SSB alternatives. From a process perspective how would that work? Would that range of alternatives be part of the stock assessment; and how would we go about making a decision on which alternative the Board would prefer?

MR. APPELMAN: I'm going to give that to Katie; our stock assessment leader.

DR. KATIE DREW: Yes, I think it would be part of the assessment in that we would sort of select, I would say, a method to develop a reference point and then the actual level of the reference point would be chosen later after the Board has a chance to review the final outcome. We would probably pick say a range for example, let's keep the current definition. What would the reference point look like if we keep the current definitions? What would the value and therefore the associated SSB levels and the associated F and harvest levels be if we chose a higher F; maybe in line with what the pre Addendum IV level of F was. Then we would go through peer review with those, and we would say, you know, make sure we've calculated these correctly and that they are biologically meaningful.

Then the Board would come and see these; and you would have as part of your sort of response to this assessment, you would select from there the reference points that you would like to establish with this fishery. I think that is where the discussion about tradeoffs and things like that would come into play.

MR. McMURRAY: Thank you for that explanation, but the actual decision making process, would that be done through an addendum, or would it be just a discussion amongst Board members in one meeting?

MR. APPELMAN: That would be through some management document. I think Reference Points is in your tool bag in the Management Plan. But if the Board felt that it was a big enough issue that they wanted to go through an amendment that is possible.

CHAIRMAN ARMSTRONG: Doug.

MR. DOUGLAS E. GROUT: One of the things that I would like to see with this is that the Stock Assessment Subcommittee tells us what the thresholds are; either via an empirical approach for both SSB and F, or more ideally I would rather have some kind of a model base for the SSB, if it can be done.

Then the Board would set the targets reference points based on our risk that we're willing to take with the fishery; because the way I understand thresholds is, this is a threshold for fishing mortality, is the point at which we're going to be overfishing. Then we can't stay above that level for very long without harming the stock.

The biomass, we want to make sure it does not go below the threshold; because that can harm the future sustainability of the stock. But then a target, which is sort of a buffer off of this, is sort of the risk that this Board, how close to the threshold we want to fish. Obviously if we wanted to fish closer to that threshold, have a fishing mortality rate that is closer to the threshold, we're willing to take more risk.

If we want to have something a little bit more conservative, then we would prefer to take less risk as we're dealing with this. That's the way I was hoping we would be making recommendations on ways to develop the targets; not so much the thresholds, which I hope will come out of our stock assessment scientists. Am I off on this?

MR. APPELMAN: No, I don't think you're off. I think this recommended tasking is to explore primarily the threshold, right. We have targets and thresholds in our plan, so that will be part of their exercise in the assessment.

CHAIRMAN ARMSTRONG: Jay.

MR. JASON McNAMEE: I think I will start by supporting what Mr. Grout just said. Reading through, well going through the survey and thinking through this. I think it's a mistake to develop reference points that are detached from the underlying model for all of the various reasons of it; interconnections, changing productivity, all sorts of reasons. I think I'm being supportive of what Doug just said about not having external reference points. It should be integrated with the model; just as a general comment.

But my question is the stock-specific reference points I think sound cool. I was just wondering, are you guys developing, so I know there was a stock-synthesis model in there which could accommodate some spatial information. My question is; is that where you would develop it? Are you doing standalone like statistical catch-at-age models for the different areas, or how would one develop stock-specific reference points?

DR. DREW: That's a good question. It's certainly something we're going to wrestle with at our next assessment meeting. But I think that we are developing a statistical-catch-at-age model that does have some spatial structure within it; so that it allows us to model the Chesapeake Bay stock as a unit that also interacts then with the coastal fishery and in the Bay fishery. As well as then sort of either one or two additional other stocks that also then interact in the mixing zone of the coastal fishery. I think the goal, if we were able to develop stock-specific reference points, it would be on the basis of a spatial model such as that; where we have some kind of ability to parse out what's happening at the Chesapeake Bay level, and what's happening sort of with the other stocks.

MR. McNAMEE: I interpret that as you're working on something that's integrated.

DR. DREW: Yes.

MR. McNAMEE: Cool. Well, thank you.

CHAIRMAN ARMSTRONG: Other questions. Mike.

MR. MICHAEL LUISI: Max or Katie, can you just remind me. You mentioned Term of Reference Number 5 and what that led to; as far as coming up with the recommendations that this Workgroup put together. But it's been a while since we've mentioned an issue that we wanted to have explored having to do with the male and female ratio information. Can you just remind me so I'm sure that that is still included

in those terms as something that the Stock Assessment Subcommittee will be working on?

DR. DREW: Yes it is still part of the terms of reference; although I think we softened it to if possible. I think it is, and that is also something we'll be evaluating at our next modeling workshop is whether the data are there to support, or to what level the data are available to support male and female information.

CHAIRMAN ARMSTRONG: John.

MR. McMURRAY: Max, you mentioned as part of the survey there were folks who were dissatisfied with the reference points; because they do not believe that they were achievable, given current productivity and the number of average to below average year classes we've experienced since 2003. A few years ago we were over target, right? Am I misunderstanding that?

MR. APPELMAN: The biomass target? I believe 2003ish, 4ish was the last time we were at or above the target.

MR. McMURRAY: Okay. Well, if there is reason to believe that something has changed that's reducing productivity, I would argue that that is a reason to be even more cautious instead of less cautious. It also provides reason for maintaining a good age and size structure. But that was more of a comment than a question, sorry.

CHAIRMAN ARMSTRONG: Jay.

MR. McNAMEE: One other thing that kind of popped into my head as I was looking at this is none of this; this is all – understandably so – single species oriented. I was wondering if you thought, and I don't think there is, but if there is any nuance in these where one might incorporate multispecies considerations; or will there be flexibility moving forward?

I mean it's not something that is immediately available for the current assessment process;

but hopefully not too far down the road. I guess I'm wondering, should we be thinking about that and leaving room, and if there is some management process that follows the assessment we should be leaving in some consideration for, I'll just be specific about it; you know where the striped bass population should be relative to some of the objectives for the menhaden fishery that sort of thing.

DR. DREW: Good question. I think how we exactly word the final management document is certainly still a little up in the air. But I think part of the range of reference points that we could produce would essentially be here is different levels of SSB and the F value that will achieve that level. Therefore, here is the quota that comes out, and here is the age structure that would be associated with that, and how do you guys feel about that as a management Board?

But that does leave open then, the other question would be then, when we do have that multispecies model available to say, this is how. Plug those target and threshold values into that multispecies model and say okay, under this level of striped bass what is that going to do to the menhaden fishery, and what are the tradeoffs there so that we can evaluate sort of the tradeoffs between allowing fishing and preserving biomass?

Not just for striped bass, but then also bringing that when that multispecies model is ready for us to evaluate, bringing those different target and threshold striped bass levels into that model, to also have information on what would that do to the menhaden population as well? I think kind of the methodology could be there, and then how the Board chooses to sort of structure the reference points down the line I think is up to them.

CHAIRMAN ARMSTRONG: Ed, did I see your hand up?

MR. ED O'BRIEN: Yes thank you, Mr. Chairman, I just had a couple questions. First of all I'm

sure you all are actively exploring getting somebody from commercial on this committee. We always had somebody on the Advisors Committee who was pretty commercially oriented; sometimes two or three.

MR. APPELMAN: We do have commercial advisory panel members who are representing the commercial sector; Arnold Leo at the back of the room is one of them. He was participating on our Guidance Workgroup. He also took the survey. But there is more recreational representation than there is commercial. It's also reflecting of states appoint their advisory panel members.

MR. O'BRIEN: Well Arnold is a great man. I think that's good representation; but it seems to me you ought to have a little bit more. Relative to the reference points, yes the male/female thing is important, and I know you all are looking at that. Developing that more and making it official, I think would be good for all of us.

Also, if you could explore when it comes to the nurseries, particularly the Chesapeake Bay, Potomac River, if you could get some more feel for everybody as to when those fish actually leave and go out into the ocean. We've all got our ideas on that. But it seems to be that could be defined a little bit better. Do you agree with that?

DR. DREW: It's not something that the assessment can do right now; but I think they are working on. I know we are working with Dave Secor on some telemetry studies; so that we can actually tag the fish and monitor where they go out. There has been some historical tagging work on that. I think that is something that needs more attention and research, and is getting some that we can hopefully fold those results back into the assessment and be more informed on that front.

MR. O'BRIEN: Yes, we used to have, I remember Tom O'Connell when he was here. He brought in some pictures of these huge

schools of rockfish. But it seems like we could develop this a little bit more; as to when they vacate. Relative to the comment somebody made about how we really don't yet understand the recreational fisheries. Of course we've got MRIP and that's data, and very important. But I think there is really something to that comment.

It would be nice, I mean I've been around this a long time and I don't understand the recreational fishery, per se, as at just how strong it is, how economic it is. I think somewhere along the line past experience and whatever has been written could be reviewed, and that could be developed a little bit more; because you hear that from a lot of people. Thank you very much, Mr. Chairman, they were the comments I wanted to make.

CHAIRMAN ARMSTRONG: John.

MR. McMURRAY: This is a question, not a comment. I promise. Max, in the briefing material you mentioned the AP would have the opportunity to provide its own guidance at some point. Where in the process would that take place?

MR. APPELMAN: The AP did meet via conference call, and it was their opportunity to provide alternative recommendations if they so chose. After reviewing the results and after having some discussion, it turned out that they were in the same camp as the Workgroup; so that happened. Of course, during any management response they will be a part of that process as well.

PROVIDE GUIDANCE TO THE STOCK ASSESSMENT SUBCOMMITTEE

CHAIRMAN ARMSTRONG: Thank you for all those comments. I think an awful lot of the discussion will be better informed when we see what we get back from the Stock Assessment Subcommittee. In that interest, we need to formulate a charge to the Stock Assessment

Subcommittee, and I think Mike you have a motion.

MR. LUISI: I do, Mr. Chairman. I would move to task the Stock Assessment Subcommittee to develop a range of F and SSB reference points as part of the 2018 Benchmark Stock Assessment as recommended by the Board Guidance Workgroup.

CHAIRMAN ARMSTRONG: Do we have a second? John Clark. Discussion, Doug.

MR. GROUT: Mike, are you talking about targets or thresholds or both?

MR. LUISI: My motion speaks to that last slide that was put up; as far as what those recommendations were. I got a little lost in that discussion over targets and thresholds, and wasn't exactly sure where that was going. I was waiting to hear something from staff. I wouldn't have any problem in the comments that were heard today. Not only would the Working Group's recommendations move forward, but thoughts from Board members today could also be part of that guidance; as to the work of the SAS in the coming months.

CHAIRMAN ARMSTRONG: John.

MR. McMURRAY: I'll support the motion; but I want to be clear that the public is going to have a chance to comment on this. The public is going to have a chance to weigh in. I don't know if I got that answer when I asked. What is the mechanism going to be to choosing a reference point?

Is that process going to allow for a significant period for the public to comment on it; because this is a big decision? We're talking about changing the management objectives theoretically; that were well established in Amendment 6 after years of debate and public comment. I think it's only fair at this point that we make sure the public gets to weigh in.

MR. APPELMAN: Back to my first slide. I think we're getting a little bit into the weeds here. This is about giving the Stock Assessment Team a starting point when it comes to developing reference points. When they're done with this assessment and it goes through peer review, you're going to have, the management board is going to have a suite of reference points that they can weigh the pros and cons and decide what goes out to public comment in a management document. This is Step 1 of 50; just honing in on a range that they can work with, and take away the guess work from that Stock Assessment Team so they can confidently explore a number of different reference points as tasked by the Board.

CHAIRMAN ARMSTRONG: John, I see us having a very vigorous debate on the data that come out of that; and us having a recommendation, which will then go to perhaps an amendment, which will go to public hearing, et cetera.

MR. APPELMAN: I'll just add. I mean John, more directly to your question. There will be a public comment process to adopt any reference points, any new management objectives, or anything like that. We are not making changes to the management program, its objectives, regulations, reference points, at all right now. That will come later.

CHAIRMAN ARMSTRONG: One more follow up.

MR. McMURRAY: Thank you for that but I'm still not sure whether or not that range is going to be part of that amendment process. I mean are we going to pick one of those alternatives and then have status quo and the reference points and then have it go out to public; or is the public going to be able to weigh in on the range? I think it's important that they do weigh in on the range.

MR. APPELMAN: That is a Board decision. The reference points that go into that draft document are a Board decision.

CHAIRMAN ARMSTRONG: Mike then Ritchie.

MR. LUISI: I'll just make one more point. As a member of the Guidance Working Group, you know we took the survey, we developed the survey, Board members took the survey, and the AP. I think it was our goal would have been to provide more focused guidance to the SAS. But given what we got back as part of the survey. I mean it was clear that it was a split decision on most issues; and nothing really stood out as being what we would see as a more focused attempt at providing direction.

In conclusion, which is what is referenced on the board right now, and which is how I formulated that motion. It's to provide for that range; and that range of alternatives would be something in a future document. I'm just thinking back to menhaden. You know we had a range of different ways for which we could manage menhaden under reference points; so something similar to that John would be kind of how I would see it unfolding over the next year.

CHAIRMAN ARMSTRONG: Doug.

MR. GROUT: Mr. Chairman, I'm going to try and refine this motion with a substitute motion.

CHAIRMAN ARMSTRONG: Can I hold that thought for a second, and ask Katie; put you on the spot. When the SAS receives this will they say that's a darn good charge, or we've got enough meat on the bones here?

DR. DREW: Yes. I mean I don't know if we're going to say that's a darn good charge, but I think we can work with what has been presented here and the knowledge of kind of we have the survey results, we have the Working Group's discussions. We have had the Board discussion, so we kind of understand where we're coming from; and therefore I think this is more as Mike was saying.

I think the dream would have been like you guys came to a single conclusion and be like yes, this is a set of reference points that we want; and that would minimize our work. But I think you know hearing this discussion, we

understand kind of what the Board is looking for roughly. This will help us move forward in an efficient manner.

I think the other thing to say is if we come back with a set of stuff that you guys absolutely hate everything on that page, we can have more of a back and forth I think, on some of these numbers and on some of these values after the assessment is done. But I think this does give us a starting point to move forward with in a way that is going to be efficient; and not slow down the assessment.

CHAIRMAN ARMSTRONG: Doug, I'm going to take Colleen first.

MS. GIANINI: I was just going to say that I can support the motion that Mike had put forward, and I appreciate the Working Group's recommendation to include remembering the Addendum IV approach; because I think it's important to remember where we've come from, and I think it could help put in context the new reference points that come out of this exercise.

CHAIRMAN ARMSTRONG: Doug.

MR. GROUT: I would like to put forward a substitute motion that I think refines what the Working Group came up with; but more along the lines of what I made with the previous comment. I believe that I would like the Stock Assessment Subcommittee to come up with the best, most robust biologically-based reference points, both biomass and F at the threshold level.

Then to develop a range of target-based reference points for the Board to consider on this, so here is my motion. Okay, you ready? I should have described it beforehand. **Move to substitute to task the Stock Assessment Subcommittee to develop biologically-based-threshold reference points (F and biomass) to address the objectives of the FMP.**

That meets the objectives of the FMP, excuse me not address. Furthermore, develop a range of target reference points, both biomass and F that would provide a range of risk that the Board would consider in achieving the objectives of the FMP. If I get a second to this I'll speak to it a little bit more; but not much.

CHAIRMAN ARMSTRONG: Pat Keliher, are you seconding?

MR. GROUT: Okay as I said. My concern here was that the broad base of reference points. Based on my past role as a scientist, I think it's a role of our Technical Committee and Stock Assessment Committee to come up with the best biologically-based reference points they can at the threshold level. Tell us where overfishing is going to occur. Tell us when the stock would be overfished; and we would be in jeopardy of losing the existence of the stock, and that it is the Board's role to develop what kind of fishery they want to see, and develop your targets around those levels. That could be a range. As we said, we have very different opinions here on what type of a fishery this Board would like to have. That's where the debate would come at the policy level is what the target levels are.

CHAIRMAN ARMSTRONG: Discussion, Rob.

MR. O'REILLY: I think the substitute motion adds a little something more than perhaps the original motion did. But one thing I notice is that when Max made his presentation he really talked about seven different items that we're looking at in the objectives of the FMP. Perhaps the word should be to consider the objectives of the FMP, because unlikely to meet all seven. That would be sort of a friendly suggestion amendment for Doug. But otherwise I do like the substitute motion.

MR. GROUT: The first part it doesn't say consider. It's only the second part. I'm okay with that as a friendly.

CHAIRMAN ARMSTRONG: Jay.

MR. McNAMEE: I like the motion. I'll offer that the way I interpret the threshold aspect of the motion is you're talking about internally derived based on the parameter estimation of the model. That is where that information will come from; and I'm supportive of that. I also like the bringing risk, a discussion on risk into this.

I would offer that I think maybe as a subsequent motion we might want to get more specific there. That is our gig. As the Board we determine the risk that we're willing to take. Maybe there is a sequence to this. Maybe we don't have to do that today; and we can follow up with that. But I guess I just wanted to state for the record that the continuum and the range of risk are infinite. I think we need to get a little more specific with that and give them some specific guidance there at some point.

CHAIRMAN ARMSTRONG: Mike.

MR. LUISI: If this motion were to pass and substitute for the original, the concern that I have is that we lose all of the guidance from the Guidance Workgroup regarding the points that Max summarized for us in his presentation. Things like stock-specific reference points gets lost, it's no longer part of that recommendation for moving forward.

To me we lose the suggestion by the Workgroup members that we take a look at pre Addendum IV reference points, and perhaps reset some of the words that we were using on the call were kind of resetting the reference points prior to Addendum IV. All of that to me, if this is a substitute we lose all of that; all of that guidance from the Workgroup that met and worked over the last six months to provide these recommendations. I don't have a problem in developing something as to what Mr. Grout and Mr. Keliher have put up here; but not in lieu of all of the other guidance. That's where I'm struggling right now in the loss of the other elements to what we were all hoping as part of that Guidance Workgroup that the SAS

was going to continue to work on. I'll leave it at that thank you.

CHAIRMAN ARMSTRONG: Good point. I've got John and Rob, but Doug do you want to address that?

MR. GROUT: Yes just to that. That was not my intent, and if we need to come up with some additional wording for the target part that would allow the Stock Assessment Subcommittee to also consider some of the recommendations that came out of the Working Group, I'm more than willing to have that included in there for their consideration within that range of targets. I just was trying to move out what I think was a science exercise from a policy exercise. I think what the Working Group came up with is very valid policy exercise suggestions.

CHAIRMAN ALEXANDER: John, okay Rob.

MR. O'REILLY: I offered a friendly amendment but it got skewed a little bit, so I would like to go back to the substitute motion and tell you what I had in mind. Originally it said to meet the objectives period, it didn't say to consider meeting. Now to say to consider meeting seems like avoidance to me.

All I meant was to replace the word meet with consider; and if you replace the word to before consider with that it would read that "consider the objectives of the FMP," because we certainly want to consider all those objectives. We just don't know the culmination of what we'll have there.

Then if I may since there has been information back to the original motion, to speak to that for a second. What was missing there for me is we don't really have a reference to what the range is going to be all about; what it's going to be doing. We went through an exercise all of us, and some thought the trophy fish, some thought that recreational fisheries, some thought the yield.

You can't say all that but I mean I think there was a little bit of that missing in the original motion. But again, on the substitute motion Line 3, if it said and with Doug and Pat's forbearance, if it said that "consider the objectives," and get rid of "to consider meeting." I mean that was my intent of my friendly amendment.

CHAIRMAN ARMSTRONG: Doug, are you okay with that?

MR. GROUT: Yes.

CHAIRMAN ARMSTRONG: And Pat, thank you. Emerson.

MR. EMERSON C. HASBROUCK: I agree completely with the issues that Mike raised on this, and I don't want to see anything lost relative to the issues that were brought forth by the Stock Assessment Subcommittee. For that reason I would be opposed to this substitute. Then I also have a question, Mr. Chairman. I'm a little confused here. Aren't we also through this process going to consider changes to the objectives in the FMP, or do I have that wrong?

DR. DREW: I would say we're not going to consider changes to the FMP right now; because we haven't done the full public comment process with that. I think as a SAS member when I read this, what I would interpret that as would be consider the current objectives of the FMP to develop these reference points, and then as part of the next management process the amendment or the addendum that would be the chance to revisit the objectives and possibly then adjust the reference points as well. But I think the objectives wouldn't be reconsidered without the full blown public process.

CHAIRMAN ARMSTRONG: Jay.

MR. McNAMEE: I appreciated Mr. Luisi's comments before. I guess I don't necessarily agree that I think the spatial discussion; I think that can be accommodated here. It's just that

the threshold reference points would be in that case they would be generated on a sub-stock level. I think you're right on the second one might have gotten lost. But I don't feel like the spatial discussion has gotten lost with the substitute motion. I think whether it's the coastwide stock or split up into sub units, I think in either case you could retrofit this motion to accommodate either of those.

CHAIRMAN ARMSTRONG: John.

MR. McMURRAY: I'm just rereading the range of risk portion of this motion. I want to ask the question of the Technical Committee. Would the current reference points be at the bottom of that range, or would you consider a full range; because certainly there are some people who think our reference points are too risky now from geography or an expansion perspective? I would hope that you would consider a lower level of risk than what we're looking at with our reference points now, in addition to what I'm presuming will be a lot of alternatives that provide a higher level of risk.

DR. DREW: If that is the will of the Board we could certainly consider additional, more conservative reference points as well out of this.

CHAIRMAN ARMSTRONG: Okay, Adam.

MR. ADAM NOWALSKY: I interpret the substitute as asking the SAS to give us back one, threshold F and biomass, and a range of target F and biomass. That is how I read the substitute. Am I interpreting that correctly?

CHAIRMAN ARMSTRONG: Doug.

MR. GROUT: It's a range of F and a range of biomass thresholds. Excuse me, it is a single value that they think is the best threshold F, the best biologically-based threshold F and biomass, and a range of fishing mortality rate and biomass targets for us to consider based on some different risks. I do want to emphasize, if some of the Board members would feel more

comfortable I could add a sentence that would expressly ask the Stock Assessment Subcommittee to consider some of the suggestions in the Working Group paper.

CHAIRMAN ARMSTRONG: Adam.

MR. NOWALSKY: Thank you for clarifying that. My hesitation with supporting the substitute motion is that we have seven objectives in the FMP. When I look at a motion that asks for a single F threshold number and a single F biomass number, I have a very hard time believing the SAS themselves can come back with something that considers the objectives plural of the FMP.

I think we would get a very good biological number, very sound, scientific based. But I think it's ultimately the charge of this Board to consider all of those objectives; and we're not going to be able to do that around this table with a single number for a threshold in my opinion.

CHAIRMAN ARMSTRONG: Rob.

MR. O'REILLY: I certainly am used to having just that; in terms that unless we're, and I hope Katie Drew will help on this, but unless we're going to decide the model format, how are we really going to be able to choose a different threshold then another threshold then another threshold?

How exactly would that work; because everything I'm familiar with you do get a threshold value for both F and SSB in one way or the other. Unless the Board instructs the SAS that well, don't like that threshold. They may have to do another model; or how is that going to work? That's what I'm trying to figure out.

DR. DREW: I think well yes that's a good question. I think there are a number of different ways that we come to our various reference points, and it's true that if we do go with a model-based reference point, so an MSY type reference point or an SPR type reference

point. There is a single value that comes out of that.

We would have a little more flexibility with the empirical reference points; that is to say maybe our threshold is not the 1995 spawning stock biomass, maybe it's half of that or maybe it's a level of where we saw recruitment at or above this level associated with this level of SSB. That definition does sort of; you do get a single answer for an SSB.

But there are certain levels of risk associated with each answer that you get out of that. I think there is room for us to develop multiple pairs of reference points; if that's the desire of the Board that reflect different levels of risk or different levels of, I think the point about there are multiple objectives and you can't get one that will address all of them.

There is a tradeoff there. We can give you pairs of reference points that address certain objectives over certain other objectives. But if it is the will of the Board that we focus on a reference point that minimizes the risk of a stock collapse for a certain level of risk; I think we can do that and then give you more range, in terms of what you want for a target, we can do that. But we can also give you matched pairs that address a certain balance of objectives.

CHAIRMAN ARMSTRONG: Doug, you have something so profound to say that it's going to solve our dilemma.

MR. GROUT: No, other than clarify that I think Adam and I have a difference of opinion that I do think we should allow the Stock Assessment Committee to come up with the best biologically-based threshold reference points. Yes, there are multiple objectives, but I think clearly when you're talking about biologically-based threshold reference points you're talking about maintaining the stock.

You're talking about a certain subset of the references, the objectives. With a policy, the target, I think that is where we consider all the

objectives. I think it's a policy decision as to how close to that threshold we're going to fish, and how close to that threshold does this Board want to fish to meet our objectives?

CHAIRMAN ARMSTRONG: Emerson.

MR. HASBROUCK: Based on what I just heard Katie say, I would think that the output from the original motion would also include whatever the output might be from the substitute motion. I think with the original motion, we'll get what we're looking for in the substitute plus more. That's another reason why I would not support the substitute, but would support the original motion.

CHAIRMAN ARMSTRONG: Doug, you had mentioned you would be willing to add some of the broader language. I would ask Mike, is there anything he can add from your motion that would make the second one palatable?

MR. LUISI: Mr. Chair, I think it's too late to change now. But the way I've listened to the conversation between Adam, Doug and Emerson, I see this biologically-based threshold reference point as being just one alternative. Where yes, we might have a choice in making a policy decision on how close to that threshold we want to fish, based on a target we select.

But unless it states more clearly in this that there will be other empirical-type reference points being considered. That's where I have felt since the beginning, since the motion was made that we have now lost that opportunity. It would almost be like this motion should have amended the original to include another way of taking the original motion and amending it to include a biologically-based threshold reference point option would have been the way to go. But in hindsight I think we're too far along to modify that now.

CHAIRMAN ARMSTRONG: Okay, I think it's time to vote so I'll read the motion. Move to substitute to task the Stock Assessment Subcommittee to develop biologically-based

threshold reference points (F and biomass) that considers the objectives of the FMP. Furthermore, develop a range of target reference points F and Biomass that would provide a range of risk that the Board would consider in achieving the objectives of the FMP. Do we need to caucus? We need to caucus for one minute. Are you ready? All hands for yes; no; null; abstain. The motion fails 6 to 9. We now move to the original motion. Yes votes on the, oops, Mike.

MR. LUISI: I think it's important that oh and that all just disappeared didn't it. There we go. I think it's important as a consideration; and the only reason we voted against it was because it limited us in what came out of the Working Group. With that said; I would like to see something develop as it was mentioned here, based on the biologically-based threshold reference points and a range of targets. I would move to amend to include just that as tasking to the SAS, to include a biologically-based reference point range, how was it worded up there before?

Move to amend to include a biologically-based threshold reference points that consider the objectives of the FMP. Furthermore, develop a range of target reference points that would provide a range of the risk that the Board would consider in achieving the objectives of the FMP. I think by amending that then we are as to Emerson Hasbrouck's comment, we're including all of the work of the Subcommittee and this new tasking on biologically-based reference points, and I'll leave it at that.

CHAIRMAN ARMSTRONG: Is that a second, Doug; second by Doug Grout, discussion, Ritchie?

MR. G. RITCHIE WHITE: Question for Katie. Does this create a lot more work? I mean is this something that is doable?

DR. DREW: I mean I would say number one, I think all of the reference points that we would put forward would have a basis in the biology of

the species; regardless of whether you're talking about a model-based or an empirically-based. It would all be based on the biology of the species. I think my one hesitation with the idea of the threshold is that there is an assumption about risk levels when you're developing that threshold.

To task us to come up with a single threshold would be to require us to come to consensus on the appropriate level of risk when you're developing that biological threshold. Even if we use a model base like an SPR or an MSY based reference point, there is a certain amount of risk implicit in that.

I think if we have the ability to provide paired target and threshold values that gives us the ability to sort of dodge the risk question and put that more to the Board; in terms of the threshold, and explicitly lay out this is the biological consequences of this target and threshold. This is the biological risk level with this target and threshold. Whereas a single threshold would sort of require us to come to consensus, and I can't say right now how difficult that would be for that.

CHAIRMAN ARMSTRONG: Okay, we have a motion and a second to amend the first motion. If this passes we will simply lift that language and add it to the end of the original motion. Is everyone clear on that? I need to read this into the record. Move to amend to add "and develop biologically based threshold reference points (F and biomass) that consider the objectives of the FMP. Furthermore, develop a range of target reference point (F and biomass) that would provide a range of risk that the Board would consider in achieving the objectives of the FMP." Adam.

MR. NOWALSKI: I appreciate the collegial effort here around the table to try to satisfy as many people as possible. For those who sat through lunch with me would understand where that comment came from. But I have a question about what we're achieving. Our SAS is not a contractor we're hiring off the street; that we

don't know what to expect that we have to give very explicit instructions that I expect my 2x4 walls to be straight and plum and level.

Part of the Working Group document said the SAS should continue to strive for development of stock-specific reference points where possible; which I think encompasses that biology element here. I don't know what additional we're getting out of this. If there is specific direction that says you're going to get more by adding this, I'm all for it. I just don't know what that extra is that we're getting here; other than a lot of words.

CHAIRMAN ARMSTRONG: Time to vote. Okay, on the motion to amend yeses. Caucus, sorry.

MR. APPELMAN: I just want to make a comment to the Board. I'm confused a little bit, because if this passes what I read is that we now have two pieces to the motion. One is to put forward multiple sets of reference points, thresholds and targets, and another part of the motion that says one threshold and multiple targets. I think it creates some confusion to the Stock Assessment Team. I'm just throwing that out there.

CHAIRMAN ARMSTRONG: We vote, all right we're going to vote; yeses; noes; null; abstention. The motion passes 12 to 3. It is now incorporated into the original motion. Can you take a picture of that or something? Let it be noted for the record that both pieces have been read in already and we will combine them. The Stock Assessment Committee has a question of the objective of this. Katie, could you state those concerns?

DR. DREW: Right now it says develop a range of reference points and develop a single threshold and multiple targets. It is "develop a range of reference points", period, and also "do one target and multiple thresholds." I just wanted to confirm that the intention from the Board with this motion if it passes is that we should develop one threshold and multiple targets while still taking into account the Workgroup's

recommendations, or is it the intent that we should do multiple thresholds and multiple targets?

CHAIRMAN ARMSTRONG: That would be stunned silence. Emerson.

MR. HASBROUCK: If you're looking for a response to Katie's question, my response would be the latter of the suggestions that she made where we're looking for multiple thresholds and multiple targets. That is my opinion. That is where I wanted to go originally.

CHAIRMAN ARMSTRONG: I would interpret it that way also. But also further saying and one of those multiple will be biologically based. Do we have consensus on that? Yes.

DR. DREW: Okay thank you.

CHAIRMAN ARMSTRONG: What do we need to do? Do you need to caucus? We need to vote on this. I see no caucuses needed. All in favor raise your hand; opposed; null; abstention. Motion passes unanimously.

2018 BENCHMARK STOCK ASSESSMENT PROGRESS UPDATE

CHAIRMAN ARMSTRONG: Okay, Katie could you give us an update on the stock assessment progress?

DR. DREW: Yes, Mr. Chair. I touched on a lot of this briefly. We are having an assessment/modeling workshop in May, so mid-May that our plan is to bring sort of some of our potential candidate models with different stock structure to the floor, and sort of evaluate what kind of data we have to support those different models. Evaluate the quality of our sex-specific data to see what kind of sex-specific information we can fold into these models, and decide on a final preferred model that addresses the objectives of the TORs and is most supported by the data at this workshop. As well as now considering the Board's additional guidance on the reference points,

and start talking about potential candidate reference points that would address the recommendations of the Workgroup.

After this meeting in May, we will have a subsequent meeting in September that will be after the new MRIP estimates have come out so that we can run the model with the most recent and up-to-date MRIP estimates. That will include the changes to the effort survey and the APAIS Survey, and that complete calibration; so that when we go to peer review in November we will have data through 2017 that include the new MRIP numbers.

CHAIRMAN ARMSTRONG: John.

MR. JOHN CLARK: Yes, maybe this should have come up earlier when the stock-specific modeling came up Mr. Chair, but Katie could you just once again go over how these stock-specific parts of the model are going to work in the overall whole? Because we're hearing of course, we were very much in favor of getting Delaware-specific reference points.

But I think the thinking was when that was requested it was going to be the way it was under Amendment 5, where we almost had a specific set of reference points that just covered the Bay there. We've been hearing from our members on the Stock Assessment Team that there is a lack of data to really develop a model for that.

But I'm just curious as to whether we would be looking at it as it was in the past, where we would be looking at these specific stocks almost as independent units or are they all just part of a whole, and therefore anything that was more. Like if more was given to a single stock it would take away from the coastal whole, or how the whole thing will work.

DR. DREW: That's a good question and that's certainly something we're going to talk about at the modeling workshop. I think right now, and certainly the issue with the Delaware Bay data is something we're going to have to really

hammer out at the May workshop. Right now the model that we're sort of putting forward as our preferred structure anyway, is the ability to have within a single model multiple stocks; so that we recognize that you know Chesapeake Bay is a producer area. It has its own fisheries that are fishing on its fish.

But then, those fish move out to the coast where they're fished on by a different fleet; and in that coast are also mixed-in fish from other producer areas. I think the model is going to try to manage those dynamics separately so that we can say okay, the size of the Chesapeake Bay stock is this. The size of either the Delaware Bay stock or the size of the alternate other stock, which would include some of the Hudson River as well, the size of that other stock is this and so therefore if we fish at this level on the Chesapeake Bay, you can take this much quota in the Bay and this much in the ocean.

I think the intention is to recognize that there is sort of a mixed zone where you have to control the fishing mortality; recognizing that it's made up of multiple stocks, but that there are separate fisheries that can have a different level of F that is going to impact the total stock, but is also taken directly at a different time.

In terms of how that then folds into management, I think there is still going to be a tradeoff at the Board level to say, you know you could say all of the fishing mortality on the stock happens in the Bay and there is no ocean fishery, or all of the fishing mortality happens in the ocean and there is no fishing mortality.

But ideally, there is going to be obviously something in the middle where the Bay is allowed to take this much out of the Bay, and the ocean is allowed to take this much out of the Bay stock. That kind of question I think is definitely going to be a management question that the Board is going to have to sort of figure out with some of the information that we can provide you; so we can say this is the effect of allowing this much fishing pressure in the ocean and this much in the Bay. Whether that Bay is

Delaware Bay or the Chesapeake Bay or things like that.

But then also you know this is the effect of having this much fishing pressure in the Bay under these size regulations and things like that. But it is going to recognize that even though these are separate stocks they are mixing together; and there is a mixed ocean fishery that needs to be accounted for in the mortality process. I don't know if that helps or not.

MR. CLARK: Just a follow up on that. Then taking the situation that we have where we don't have the complete data, I assume this is the Stock Assessment Subcommittee has been discussing this quite a bit. Is the Committee planning to move ahead with the stock-specific models or only if there is enough data to do so? How will that be addressed for the future of the assessment?

DR. DREW: We are planning to, at this modeling workshop is really where we're going to review. I think the issue is with the Delaware Bay in particular the issue is the length of the time series; so that we are able to parse out this amount of Delaware and New Jersey catch that happened in the Bay, and this is the age structure of that catch, and this amount of Delaware and New Jersey catch happened in the ocean, and this is the age structure of that catch.

We can do that back to maybe 2000; but before that there really isn't enough commercial and MRIP sampling that happened in the [Delaware] Bay specifically for fish that were caught in the [Delaware] Bay versus fish that were caught on the coast. Going back in time is really the issue; so I think one of the things we're going to be talking about is do we go with sort of a 2-stock model where you have the Chesapeake Bay is a stock within that model. Then you have sort of a, oh they're a mixed stock, which would be the Hudson River and the Delaware Bay sort of as a single stock complex that is also contributing to the overall coastal catch.

Would we model the Delaware Bay and only start fitting to the data when it becomes available is something we're also going to talk about. I think those are kind of the two questions we have to deal with; are we going to go with a 2-stock model, or are we going to go with a 3-stock model essentially.

OTHER BUSINESS

CHAIRMAN ARMSTRONG: Okay, seeing no other questions we'll move to Other Business. We have a couple of quick items presented by Derek Orner.

MR. DEREK ORNER: A couple items that have come up recently with NOAA Fisheries I want to bring to the Board; just to get some initial reaction. Manna Fish Farm has recently submitted a permit application in the U.S. Army Corps of Engineer for some proposed offshore aquaculture off of Long Island and New York; looking at finfish, shellfish, and macro algae, but in particular steelhead trout and striped bass.

This is something that was brought up to the state directors probably about two years ago in a preliminary form; but the concern is there is really no mechanism for legal harvest, transport, possession of striped bass in the EEZ. Manna has recently submitted a letter to the Agency requesting our support in modifying the regulations.

In response to the letter we're working with our Office of Aquaculture, and committed to identifying a number of potential options for moving forward with potentially allowing farming in federal waters. [I'm] bringing it up here to the Board just to start the discussion and get some initial feedback.

Obviously in preparing any regulation, changes in the regulation in the EEZ, we need to bring it before the Board, the Councils and the states. We've identified a couple different options that we would just like to get a little bit of feedback on, and whether we bring it for further discussion later on.

We could initiate some regulatory revisions to clarify the prohibition of the fishing in the EEZ, and that it does not apply to cultured fish; it only applies to wild stocks. We could provide some guidance to Manna Fish Farm, and maybe moving forward with an exempted fishing permit as a pilot or a feasibility study; maybe for an 18 month or two-year window. It could be based on the recommendations or feedback from the group that there is no action to be taken at all.

In addition, if you've read the 2018 Omnibus language that recently provided our funding, we are directed, or the Agency is directed to look at or review the federal moratorium for striped bass at the conclusion of the benchmark stock assessment that we've just been talking about.

I guess at that point I can stop with that brief intro. I don't want to take a whole lot of time and drag on. But just to get some initial reaction or feedback from the Board on aquaculture in the EEZ, specifically for striped bass.

CHAIRMAN ARMSTRONG: Feedback, Pat.

MR. PATRICK C. KELIHER: I'm not sure, Derek if the agencies have even finalized a process by which you would determine site locations. Have you, I mean from a leasing standpoint, and then the second question I have is genetic strains. We've learned a tremendous amount in the hatchery world about genetic strains and genetic interactions with wild stocks from domesticated stocks. Has that been thought through clearly, so we would understand that if there was a large escape that it's not going to be detrimental to the wild stock?

MR. ORNER: I don't have answers specifically to the questions. I know the location they're talking about is some lease property about eight miles off the coast of Long Island.

CHAIRMAN ARMSTRONG: David.

SENATOR DAVID H. WATTERS: Thank you, Senator Watters, New Hampshire. I'm familiar

with aquaculture operations in our waters. But I just wanted to know what kind of discussion, kind of following on what Pat was asking about, about any potential disease or pollution issues; as it might affect the wild stock.

MR. ORNER: Again, I guess my response would be since we haven't had a full proposal submitted by Manna Fish Farms at this point, I don't know the specifics behind some of that.

MR. THOMAS P. FOTE: It was interesting, about a year and a half ago a fish farmer from California, who is actually raising striped bass from five genetic pools down in Mexico asked if he could import it into New Jersey; basically because we don't allow for the sale, our Legislation said of anything except hybrid striped bass that are documented.

I thought it was a good idea. Of course the comments I got was overwhelming objection to anything to do with farm-raised striped bass. They were worried that well; his business is in Mexico so there is no plan of interfering with your genetic pool. But there were just so many concerns of law enforcement and everything else to be bringing it in; they didn't want to deal with it, as I said over my objections.

I don't see a large support. There are a lot of reasons we kept the EEZ closed. The genetic pool, I have real concerns about this. I don't think you're going to find any support, especially in the recreational community. First of all they've been opposed to doing any kind of aquaculture in the EEZ, because they're worried about disease and they worry about the clouding of efforts, so anyway that is the feelings you're going to get from New Jersey on that.

CHAIRMAN ARMSTRONG: Ritchie.

MR. WHITE: What are the next steps in this process; and will the Commission be involved as this unfolds?

MR. ORNER: I can take a shot at that. Yes, very easily on the second part of your question, the Commission would be involved. We're bringing in now is very preliminary stages of it, and we would want a recommendation from the Commission as we go through with any modifications to the regulatory language, whether it's an EFP, exempted fishing permit, or what it may be. A potential recommendation, since we don't have a proposal in hand from the group, would be to perhaps invite Manna Fish Farm to an upcoming Board meeting in possibly August, and give them a 10-15 minute window on the agenda to present what their business plan would be.

CHAIRMAN ARMSTRONG: Roy.

MR. ROY W. MILLER: I just quickly wanted to remind the Board that this Commission worked on a document back in the late 1980s on stocking guidelines that dealt with genetic mixing, disease control and that kind of thing. That guidance probably would still have relevance today, with regard to an ocean aquaculture situation, where the likelihood of escapement is fairly high, or at least greater than zero.

CHAIRMAN ARMSTRONG: We will be running into the Herring Board shortly, so we need to move it along. Doug.

MR. GROUT: Just a quick comment. One of your questions, they potentially would like to change the regulations in the EEZ. I would suggest that we not do a wholesale change of it; but if there is a chance that this is going to be permitted that any striped bass that are going to come out and be sold from this need to be tagged at the pens.

They can be uniquely identified as aquacultured before they go into the market. That way you might be able to have some modification to, depending on where they came in, the size limit restrictions in New York may be different than Chesapeake Bay. Make sure they can be tagged at the pen.

CHAIRMAN ARMSTRONG: Mike.

MR. LUISI: Derek, this issue was raised at a recent meeting of the Mid-Atlantic Council, and there was a great deal of concern offered by members of the Council and of the public. We were in Montauk, New York, so there was even a higher level of interest; given that this application is for the area offshore in the EEZ off of Long Island.

I guess to your point about providing the Board and perhaps even the Council some further information. I think we would all benefit from a presentation or just more information about the details about what this application would have in it, and how it would be carried out. Your suggestion about following back up with the Board I think is a good one.

CHAIRMAN ARMSTRONG: Tom, and then Emerson you can give us the final word.

MR. FOTE: I think a quick question I have is I think red drum is the only one that is also not allowed to be harvested in the EEZ. If we're going to look at one, we should look at the other to see how both of them will be handled. If I'm not mistaken, I think red drum is the other species that is handled like striped bass.

CHAIRMAN ARMSTRONG: Emerson.

MR. HASBROUCK: Just a couple of quick things. I'm wondering if perhaps the Council might share with the Striped Bass Board the comments that were raised at the recent Council meeting that Mike had mentioned. The other is, is there any place in the United States where we allow an aquaculture enterprise to take place for a species that is prohibited in the EEZ anywhere?

MR. ORNER: Not that I am aware of.

CHAIRMAN ARMSTRONG: Okay I lied. John, you're from New York, you get to have the final word.

MR. McMURRAY: Okay. I have a lot of questions, but I'm just going to ask the basic ones. Just to be clear, Manna is talking about raising wild striped bass not hybrid striped bass, correct?

MR. ORNER: That is my understanding, yes. But again I have not seen an actual application.

MR. McMURRAY: Follow up if I may. Are they planning on catching schoolies and growing them out, or are they getting fry or eggs, or how are they getting them; because that is significant in the context of the wild fishery? My other question would be we need to see what the plans are to feed them, because we're looking at depletion of the forage resource also.

CHAIRMAN ARMSTRONG: You're the final word, Adam, and make a motion to adjourn right at the end.

MR. NOWALSKY: Well that's easy; once you see the agenda is having concluded the business of the Board we are adjourned. You don't even need a motion, so I can make those words.

But my point was that it's great that someone is talking about it. I agree we should be engaged in the process. But I think it might be premature to bring them here before the Board when you don't even have an application.

I think some of these questions would be answered in the application. We don't need to take up our time until they get to that point. My recommendation would be once we get an application, have the Service present it and potentially have the applicant on hand at that time to answer questions we may have.

CHAIRMAN ARMSTRONG: I think Derek, you were looking for the flavor of opinions, and I think you got them.

MR. ORNER: Yes, thank you so much.

ADJOURNMENT

CHAIRMAN ARMSTRONG: All right with that we are adjourned.

(Whereupon the meeting adjourned at 3:45 o'clock p.m. on May 1, 2018)