

ATLANTIC STATES MARINE FISHERIES COMMISSION

Radisson Hotel Alexandria, Virginia

ATLANTIC MENHADEN MANAGEMENT BOARD

April 5, 2000

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ATLANTIC STATES MARINE FISHERIES COMMISSION

Radisson Hotel      Alexandria, Virginia

ATLANTIC MENHADEN MANAGEMENT BOARD

April 5, 2000

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**Attendance**

Board Members:

Niels Moore, NFMOA, Vice-chair  
Dr. David Pierce, Massachusetts DMF  
Bruce Freeman, New Jersey DF&W  
Bill Adler, Massachusetts Gov. Appte.  
Eric Smith, Connecticut DEP, proxy for Ernest Beckwith  
Bill Goldsborough, MD Gov. Appte.  
Jack Travelstead, VA MRC  
Jule Wheatly, Beaufort Fisheries  
Damon Tatem, NC Gov. Appte.  
Tom Fote, proxy for Sen. Bassano, NJ Leg. Appte.  
Pat Augustine, NY Gov. Appte.  
Fred Frillici, proxy for Sen. Gunther, CT Leg. Appte.  
Tia Pullen, proxy for Ritchie White, NH Gov. Appte.  
John Connell, NJ Gov. Appte.  
Jeff Tinsman, proxy for Andrew Manus, DE F&W  
Brian Culhane, proxy for Sen. Johnson, NY Leg. Appte.

George Lapointe, Maine DMR  
David Borden, Rhode Island DEM  
Pat White, Maine Gov. Appte.  
Susan Shipman, GA Coastal Res.  
Gordon Colvin, NYS DEC  
A.C. Carpenter, PRFC  
Steve Jones, Omega Protein  
Ray Rogers  
Richard Daiger, Bevans Oyster Co.  
Preston Pate, Jr., NC DMF  
Dr. Jaime Geiger, USFWS  
Paul Perra, NMFS  
Eric Schwaab, MD DNR  
Bob Palmer, FL FWCC  
Mel Bell, SC Fish. Mgmt.

Ex-Officio Members:

Mike Street, NC DMF

Michael Bloxom, LEC Rep.

Staff:

Dr. Joseph Desfosse  
Dieter Busch  
Amy Schick

John H. Dunnigan  
Tina Berger

Guests:

Joseph W. Smith, NMFS  
James Price, CBARF  
Paul Tolme, AP  
Rob Winkel, NJ F&W Law Enf.  
Charles Williams, Omega Protein  
Paul Spitzer

Keith Walters  
Tim Hobbs, NCMC  
Phil Jones, MD DNR  
Joe Meyer, NJ F&W Law Enf.  
Sherman Baynard, CCA  
Pete Jensen, MD DNR

**There may have been others in attendance who did not sign the attendance sheet.**

Atlantic Menhaden Management Board

April 5, 2000

**SUMMARY OF MOTIONS**

**1. *Motion to approve the minutes of the February 7, 2000 Board meeting.***

Motion by Mr. Lapointe, second by Mr. Travelstead. Motion carries by voice vote.

**2. *Move that we reinstate the industry on this (the) expanded board.***

Motion by Mr. Wheatly, second by Mr. Adler. Motion carries.

**Motion clarified as:** *“the intent is to include an option in the public hearing document which would allow the industry to stay on the board”.*

**Motion further clarified as:** *“to add a second alternative to the public hearing draft of the amendment to have the management board structure look as it is now, with all of the states represented as well as the industry members”.*

**Substitute motion offered:** *“to list as an alternative in Amendment 1 the board structure that would include the structure of the interim board with both the states represented through the three commissioners and industry”.*

Substitute motion made by Mr. Lapointe, second by Mr. (Eric) Smith; substitute withdrawn.

**Motion as read into the record:** *“move to add a second alternative to the draft FMP to continue having industry members on the Menhaden Management Board”.*

Motion carries by voice vote with one abstention.

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC MENHADEN MANAGEMENT BOARD

Radisson Hotel

Alexandria, Virginia

April 5, 2000

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The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Roosevelt Room of the Radisson Hotel, Alexandria, Virginia, on April 5, 2000, and was called to order at 8:00 o'clock a.m. by Vice-Chairman Niels Moore.

VICE-CHAIRMAN NIELS MOORE: Good morning. If you're here for the Atlantic Menhaden Management Board meeting, you're in the right place despite the fact that I'm once again in front of you. Mr. Pruitt apparently could not make it this morning, so I'll be substituting for him. Welcome and good morning. Our first item here, welcome and introductions, so, Joe, please take the roll.

(Whereupon, the roll call was taken by Dr. Joseph Desfosse.)

DR. JOSEPH DESFOSSE: You have a quorum.

VICE-CHAIRMAN MOORE: Approval of agenda, does anybody have any changes or additions to our agenda today? Does everybody have a copy of the agenda? Hearing none, if there is no objection, then we'll go ahead and approve that. Approval of minutes from our last meeting, February 7. Does everybody have the minutes? Copies are available over here if you do not have them.

**APPROVAL OF MINUTES**

DR. DESFOSSE: The minutes came into the Commission office early last week. They were Fed Exed to everyone in the middle of the week. I'm hoping that everyone received them prior to the meeting.

VICE-CHAIRMAN MOORE: Do we need a couple of minutes to look these over or are we comfortable with them as they stand at this moment?

MR. GEORGE LAPOINTE: **I move approval of the minutes.**

VICE-CHAIRMAN MOORE: Is there a second?

MR. JACK TRAVELSTEAD: **Second.**

VICE-CHAIRMAN MOORE: All those in favor, say aye. The motion passes, minutes approved. Public comment. Is there anybody in the audience at this point who would like to have anything to say? Jim Price.

**PUBLIC COMMENT**

MR. JAMES PRICE: My name is James Price, president of the Chesapeake Bay Acid Rain Foundation. I would like to address the new board and let them know that I've requested to the old board, and I'd like to renew that request to the new board, to take action to reduce the harvest, in fact, eliminate the harvest of age zeroes along the Atlantic Coast, and consider your authority under Section 6 of the Interstate Fisheries Management Program Charter to take that action this year. It won't be necessary to wait until the amendment is drafted and finalized, which could be a couple of years before we see any change in management based on the track that it's taking now. I think that would be waiting too long under the current situation with the stock declining the way it is. To continue to harvest age zeroes, I don't feel is in the best interest of the resource.

Last fall, I think it was a fairly large number of age zeroes targeted and about 4 percent of the landings, in fact, were age zeroes. I hope the board and the ASFMC would take this under consideration.

Also, I know there is some new information that's out from the SABRE Project, which we've been waiting for for about a year, and I don't think good decisions could probably be made, even though they're in the current draft amendment, without reviewing this information, and it's going to be hard to obtain because there's limited copies and it's about a 200 page report. But I'd be glad to make it available to board members or anybody interested in reading this report. It was published or paid for by the National Marine Fisheries Service and it's a very detailed report on Atlantic menhaden. Thank you.

VICE-CHAIRMAN MOORE: Thank you, Mr. Price. Is there anybody else from the audience who would like to speak at this time? Let's move to the next agenda item, review options for overfishing definition specifications. Joe.

**OVERFISHING DEFINITION**

DR. DESFOSSE: Let me first preface this discussion with the comments that when we planned this meeting, we were hoping to have Doug Vaughan here to answer stock assessment questions, but Doug is busy doing the menhaden assessment right now. That assessment is due to be presented to AMAC in two weeks. Due to a number of different assessment priorities, Doug has been pretty much swamped with assessment work.

The fall-back position was to have John Merriner here to answer questions as best as he could, but due to a recent knee operation, he could not make it as well. So we have Mike Street here as the Technical Committee Chair and Joe Smith is also here. He may be able to answer some questions that come up to the board. With that in mind, there is a handout that the Plan Development team put together, Section 2.5, "Definition of Overfishing." I'll walk the board through this as best I can and if you have any questions we will try to answer them. The PDT identified a number of options for the board to consider for overfishing definitions.

The PDT suggested that the board may wish to consider using a target and threshold approach similar to what is used under the Magnuson Act. The terminology here in the first paragraph we think is reversed. There's a typo, "target and threshold" should be reversed in the second sentence of the first paragraph. Basically, what you want to do is identify a conservative target and also have a more conservative threshold whereby you would halt or take drastic measures to reduce fishing if you are exceeding that fishing mortality rate.

There are two broad strategies for defining overfishing that are used in practice today. One is to use a fishing mortality rate strategy; the other is to use a stock biomass or a spawning stock biomass strategy. Fishing mortality-based reference points are designed to prevent fishing mortality from getting too high, which could result in the subsequent decline in the population. Spawning stock biomass-based reference points are designed to prevent SSB from getting too low and compromising the ability of the stock to replenish itself. The PDT felt that to accurately categorize the status of the stock, we need to look at both the fishing mortality and the biomass simultaneously. There are a number of different options under each of these categories.

### Fishing Mortality

I'll quickly run through them and you'll see that some of the information is lacking. Doug was busy trying to put together some other mortality-based reference points, and those will be presented to AMAC in mid-April. The first category is the fishing mortality rates and thresholds. The standard ones in use are to use the ones that are based on yield recruit models, such as F-max and F-01. F-max represents the level of fishing mortality that maximizes the biomass return to the fishery, while F-01 is based on the economic return argument. I won't get into the details of this. I will say that F-max currently occurs at a full F or a fully recruited F of 1.0 while F-01 occurs at about 0.5 for Atlantic menhaden, based on the period from 1995 to 1998. The mean full F for that same period was about 0.9. The data that was used was calculated from the 1990s. Typically F-01 has been considered as a candidate for the target F value for other species, with F-max being the threshold mortality rate. However, in this case, F-01 may be too precautionary as a target value for menhaden since it is one half the threshold value based on F-max, and the PDT feels that it has no biological basis.

The second option under fishing mortality targets is to choose a fishing mortality target and threshold based on static spawning potential ratio, such as F 5 percent, F 10 percent or F 20 percent. These are based on the history of the stock. Statistics on spawning potential ratio for menhaden are presented in table 5.1 of this handout. It's the next to the last page and it's also presented in figure 2.7, which is on the last page, the bottom figure. The current SPR is 11.5 percent, and that's based on last year's assessment, 1998. That will be updated in two weeks. For precautionary concerns, the PDT felt that a target of 10 percent SPR may be reasonable with a possible threshold value of 5 percent SPR. A fishing mortality rate equivalent to 10 percent occurs at fully recruited F of 1.1. F 20 percent occurs at about 0.7. You see here in bold F 5 percent occurs at approximately 1.5 to 1.7, but that's one of the estimates that Doug still needs to calculate. The PDT notes on this that based on the historical data base for Atlantic menhaden, 20 percent SPR has only been attained once. That was in 1960, and has only been attained once since 1955. Therefore, it may be unreasonable for a threshold level. The stock appears to be extremely resilient and has done well at levels below 10 percent. The median SPR value is 5.3 and the 25<sup>th</sup> percentile is 2.9, while the 75<sup>th</sup> is 8.6.

The third set of options under the fishing mortality target is to base it on what's called F-med or F-rep. This is the level of fishing mortality that allows the stock to replace and maintain itself with the fishing pressure, i.e., under equilibrium conditions. The corresponding F value for F-med is estimated at 0.9. It's also based on the historical performance of the spawning stock biomass and recruitment of Atlantic menhaden, and it provides a level of F that should allow for the long-term sustainability of the stock. Theoretically, F-med could be considered as a candidate for the threshold F value; however, based on the historical performance of this stock, it may be more appropriate as a target value. The stock appears to have maintained itself over the last thirty years or so with F rates exceeding 1.0. Figure xx here refers to a figure that is not in the handout; Doug is preparing that as well.

The final set of options under the fishing mortality strategy is to choose a fishing mortality target threshold that corresponds to FMSY. This is based on an assumed spawner-recruit relationship. FMSY is defined as the level of fishing mortality that produces maximum sustainable yield on a continuing basis and is based on the spawner-recruit relationship. For Atlantic menhaden this relationship is weak at best. The level or recruitment seems to be related more to environmental factors than to the spawning stock biomass. The data on SSB and recruitment levels is found in table 7.2 of this handout as well. Due to time constraints, the value for FMSY could not be included in this handout. Doug needs to calculate that as well. Do you want me to stop here and see if there are any questions, or move on?

VICE-CHAIRMAN MOORE: Anybody have any comments? Let's have board members first, and then we'll go to the audience. Bruce.

MR. BRUCE FREEMAN: Thank you, Mr. Chairman. Joe, in looking at various ways of determining what Fs or what thresholds, was there any comparison done with species on the west coast, forage species that have similar life history habits as menhaden to see if, in fact, people on that coast had tried to deal with coming up with some definition of these biological reference points, and how they approached it, and what they used? I'm thinking particularly of the Pacific sardine.

DR. DESFOSSE: It was not brought up at the most recent PDT meeting, but it's something that we probably should look into.

MR. FREEMAN: I have no idea whether in fact there's anything, but I think it would be useful, if, in fact, someone has had experience with doing this. This is kind of breaking new ground for us.

We've been dealing with the top predators and this is very different life history characteristics. It seems if we get off on the wrong number here, it could create a problem, but simply trying to see what has been used in other areas and what has been successful may be useful. There may not be anything, but I think it's certainly worth a look.

VICE-CHAIRMAN MOORE: Mr. Lapointe.

MR. GEORGE LAPOINTE: In a similar vein, we might want to look at Atlantic herring as well, something a little closer to home. Joe, you may not be able to answer this question, but when you were discussing fishing mortality targets under number one, with F-max and F-0.1, there is a conclusion that F 0.1 may be too precautionary because it's half of the threshold of F-max.

Was there any discussion about what another alternative might be? The PDT mentioned targets and thresholds and then mentioned a potential target and a potential threshold, and then threw out one of them. Was there discussion of some intermediate value as a target?

DR. DESFOSSE: From my recollection, at the last PDT meeting we went through the list of fishing mortality reference points and sort of mixed and matched. Mike, do you recall that?

MR. MIKE STREET: In looking at most of them, we looked at pairs or groups that seemed to be related and in that group, other than F-max and 0.1, we didn't have another one. We did in the other groups, but the PDT feels that we need to look at a combination of measures to use for determining overfishing rather than just one measure.

VICE-CHAIRMAN MOORE: Thank you. Any other questions or discussion? Jack.

MR. TRAVELSTEAD: Did the PDT make a recommendation as to which one of these was more appropriate? It seems to me it's going to be awfully difficult for the board to look at all of these and decide which one is the best without some sound, scientific advice from the PDT or the Stock Assessment Committee or whatever. I realize Doug is not here, and I certainly don't have any objection to going through this. We have a lot of new members on the board, they need to hear this, but it seems to me if we could put this off to another meeting where we could have Doug and others here to help guide us, it would be helpful.

DR. DESFOSSE: I think the feeling from the PDT was that we need to look at both the fishing mortality targets and the spawning stock biomass together and probably use the target and the threshold approach, but with maybe a quarter of these reference points not calculated yet -- they were not available due to Doug's time constraints -- the PDT did not come out with a preferred option for the board to consider.

MR. TRAVELSTEAD: But you're also telling us that they will be calculated by the June meeting?

DR. DESFOSSE: It should be available in two weeks when AMAC meets and then the next commission meeting week would be the Spring meeting in June.

MR. TRAVELSTEAD: Is there a board meeting planned for the June meeting already?

DR. DESFOSSE: It will be.

VICE-CHAIRMAN MOORE: Thank you. Any other discussion? Paul.

MR. PAUL PERRA: About the closest thing I can see as coming out a recommendation now is you say a 10 percent SPR may be reasonable. Coming out of that meeting, was that what people were focusing on or were they still looking at some of the other levels? Because this is basically what we looked at before, except a higher level. I believe before we had a 5 percent level.

DR. DESFOSSE: I think what the PDT was leaning towards was the F 10 percent and F 5 percent as the threshold; 10 percent being the target, 5 percent being the threshold, based on the historical performance of the stock.

VICE-CHAIRMAN MOORE: Board members, any other discussion?

MR. DAVID V.D. BORDEN: Thank you, Mr. Chairman. I'd just like to follow up on Jack's comment. I think Jack actually suggested the appropriate course of action given the fact that the PDT really doesn't have a recommendation before us. And given the fact that there's a great deal of additional analytical work that's going to take place over the next couple of weeks, it seems to me that it would be beneficial for us to not have a labored discussion on this at this point, simply just move on and let the system do what it does best and come back to us with a recommendation at the next meeting.

DR. DAVID PIERCE: I would agree with David Borden on that. It took me a long time last night to chew on this and try to understand exactly what was being recommended by the PDT, and then, of course, I realized there were no specific recommendations from the PDT. They laid it out rather well, so we should be thankful for that, but it seems to me that what they are recommending, however, is the use of the approach of a target F and a threshold F and a target spawning stock biomass and a threshold to be used in combination for judging what needs to be done for management of menhaden.

Perhaps we can just focus on that aspect of this part of the definition of overfishing. I like the concept. Certainly, in New England with groundfish and with other species, we've used it; it's proven to be very useful. I suspect that it'll be as useful with menhaden, although I must add onto that remark that in light of the other information that's been presented by the PDT and in light of what's in the plan itself, the addendum, it seems that fishing mortality has no effect on recruitment, and that's one of the important aspects of why we set the particular target and threshold to deal with recruitment.

So I think that's going to be one important focus of our discussion, if not right now then a little later on, certainly at the next meeting. We're going to restrain the menhaden fishery to keep fishing mortality under control and to rebuild spawning stock biomass to some target, but how does that relate to recruitment? And it doesn't. It's going to be a real thorny issue.

VICE-CHAIRMAN MOORE: Thank you, Dr. Pierce. Discussion from our board members?

MR. BORDEN: One other point, Mr. Chairman. When the PDT comes back with their final analysis, each one of these different alternatives has different implications in terms of what it results in terms of a population structure and that

type of thing.

And I think it would be helpful, at least from my perspective, if the PDT tried to identify just in bulletized form what those differences are so that when we take this out to the public, then we can sit there in front of the public and say, "This is the implication of this strategy, this is what it means."

MR. FREEMAN: I have a question. When Joe had gone through this, we stopped at the spawning stock biomass. Are you anticipating going on? I agree with the concept of we're not going to make a decision here today because of some pieces missing, but I'm looking ahead at age structure, and I'm just curious if, in fact, you're going to review that?

Then if so, the question I had would be directed, I guess, to the Service. I know years ago they had a coastwide survey of young of year fish. They had a beach seine survey that was conducted. And I know over time that's been reduced because of funds and available people and so forth, and my question is is there any anticipation of resurrecting that young of year survey?

MR. PERRA: It's not in our budget right now. Basically, we really don't have a young of the year survey. The only way we could do it is get extra money in the budget or somehow get a cooperative program among the states to get the data.

MR. FREEMAN: That's certainly another option, and we do this with various state surveys which are conducted along the coast. It just seems that it was a very useful way to look at the structure of the population. Of course, by the time they are two years old, you do get a good sampling, but now it appears with the restrictions of the fleet, where they're working geographically, there's some question of whether you can get a good idea of the age structure; because you're only looking in a small area, not looking throughout the coast.

It seems like this will be an important aspect of the management and yet there seems to be no mechanism to do this either on young fish or larger fish. I may be getting ahead of the story here, but it just was of interest to me.

MR. JOE SMITH: I'm Joe Smith of the Beaufort Lab for John Merriner. We're not totally devoid of juvenile abundance surveys, Bruce. The Federal Survey went by the boards in the mid-eighties budget. The survey went away.

Doug, in his last few stock assessments, does draw from the individual states. The states have various beach seine surveys, trawl surveys, a real hodgepodge of gears. But he does try to normalize those surveys and I think in his last few assessments he's had juvenile abundance indices by state and by coast. He has tried to do it for the entire coast as best he can with what he has.

Our feeling at Beaufort was we tried to -- we thought about pushing for resurrecting juvenile abundance surveys a couple of years ago during the Pfiesteria hysteria. The feeling was if we couldn't resurrect it during those times, we couldn't resurrect it. There's just no money apparently in our budget for it. But we're not totally devoid of a handle on juveniles.

MR. FREEMAN: If I could continue along those lines, it appears that New Jersey is going to be doing quite a bit more in Delaware Bay in the near future, and it appears that we will at least have a good seine survey in that area. We'll have information that we'd certainly be willing to supply. The way this is designed, it's really designed to sample a population in the Bay, and this is both Delaware side and New Jersey.

And if other surveys were conducted for whatever reason and they could be added together, it may provide information at very low cost or no cost. It just seems to me it's a very valuable tool and something that I think eventually we'll need if we're really to understand this fishery, or something like that. So I would suggest that the Plan Development Team give thought to that if they haven't already.

VICE-CHAIRMAN MOORE: Thank you. David.

DR. PIERCE: Yes, it would be very helpful if the Plan Development Team next time around would follow through on a recommendation that was made by Joe DeAlteris yesterday in his fine presentation, and that is give us the exploitation rates as well as the fishing mortality rates because it is easier to relate to exploitation rates. And frankly, because natural mortality is so high, 36 percent each year being removed due to natural mortality -- that's one of the numbers used in the plan -- I want to make sure that whatever F we do select, for example, as a threshold, when it's translated into a percent removal, it doesn't, when you add it to natural mortality, exceed 100 percent.

I find it much easier to relate to the percent exploitation than to the Fs. And it's not a simple matter of -- well, the Fs would have to be calculated with an assumption that natural mortality is relatively high, so we get away from the table that was shown by Joe yesterday on the board, because the table that he showed, they give the relationship between fishing mortality and exploitation was based on, I think -- I take that back, I'm sorry.

My point is the exploitation rates will be very helpful so we don't embarrass ourselves by having an annual removal greater than 100 percent.

VICE-CHAIRMAN MOORE: Good point. Any other discussion from our board members before we move on to the next section? Okay, why don't we go on to the audience. If there's anybody in the audience who'd like to comment on this particular section? Yes, sir, and identify yourself please.

MR. PAUL SPITZER: I'm Paul Spitzer. I'm an independent researcher, and my main question was the timeframe used to make the calculations. There's a quote in there of replenishment over the last 30 years or so.

If you go back to the sixties, that's the period the first great depression of the menhaden population, which may very well have resulted from the initial overharvest during the high mechanization period that preceded that.

So I'm just wondering if all of these calculations perhaps are based on the wrong time period and a longer timeframe should be used in making our understandings of what's going on.

DR. DESFOSSE: The historical performance of the stock is based on data that goes back through 1955 and it's updated continually. The estimates in terms of the fishing mortality are based on the most recent time period, but the historical data that is included in -- I forget which table it is -- is based on the total timeframe of the sampling of this stock.

MR. LAPOINTE: Joe, correct me if I'm wrong, but there are no data prior to that time series, that's why it begins in 1955 is because there's nothing before then.



VICE-CHAIRMAN MOORE: Anybody else in the audience that would like to comment at this time? If not, let's continue with Section B now, spawning stock biomass.

### Spawning Stock Biomass

DR. DESFOSSE: Does the board want me to continue going through these options, briefly? Okay, I'll try to keep it brief. The spawning stock biomass options that the PDT put together, there are three of those.

The first is to choose an SSB target or threshold which is based on historical patterns. Table 7.1 summarizes the pattern of historical spawning stock biomass. The current value is equal to 73,200 metric tons while the median is 41,000 metric tons. The interquartile range is 21,000 tons through 69,000.

The PDT felt that a target level corresponding to the median value of 41,000 metric tons may be reasonable. The candidates for the threshold levels could be the 25<sup>th</sup> percentile or the spawning stock biomass that produces -- it's calculated under Ricker curve assumptions -- produces one half maximum recruits. This value corresponds to 24,300 metric tons. The current trigger value for SSB in the 1992 FMP is 17,000 metric tons. The only year in recent history where SSB dipped below that level was 1986. It was almost 16,000 metric tons. The spawning stock biomass that produces the theoretical maximum recruitment occurs at almost 109,000 metric tons. The maximum recruits that would be produced by this SSB is 5.3 billion. The PDT notes that SSB levels seen in the 1950's were the result of two extraordinarily large year classes, and that due to changes in habitat since the late fifties and early sixties the carrying capacity may have been changed, it's been affected, and it may be unreasonable to base expectations on the stock sizes seen during that period due to the habitat alterations.

The second option would be to choose an SSB target and threshold based on the population biomass that produces MSY. The values would be to calculate a BMSY as a target value, and something that's called the minimum spawning stock threshold, MSST, for the threshold value. For Atlantic menhaden, again, the spawner-recruit relationships is weak, and the level of recruitment seems to be more related to environmental factors than to the spawning stock biomass. This is another one of the numbers that Doug still needs to calculate, and again, it should be available in mid-April.

The third option under spawning stock biomass would be to identify an SSB target and threshold that corresponds to the F-med calculations. That would be for a target value, and the threshold would be based on the MSST. Due to the time constraints, again, these values are not available, but they will be in mid-April.

### Magnuson Strategy

Strategy C would be to combine both the fishing mortality target strategy with the spawning stock biomass strategy. This follows the Magnuson Act approach of having two control rules, which are F and SSB based, and they cover different aspects of the stock status. I'll also point out that this was the recommendation of the peer review panel, the peer review that was held in 1998.

VICE-CHAIRMAN MOORE: Thank you, Joe. Any discussion from our board members first?

DR. PIERCE: Joe, I think that the PDT is saying that number two is not the way to go; am I correct on that?

DR. DESFOSSE: Yes.

DR. PIERCE: So, number two would not be an option in the PDT's mind, but number three and number one would be options that we could discuss?

DR. DESFOSSE: Yes, that's the feeling at this time. The PDT suggested that the calculations move forward so that you do have the option under two fleshed out.

VICE-CHAIRMAN MOORE: Further discussion? Okay, we'll go ahead and move to the audience.

MR. SPITZER: Paul Spitzer, independent researcher. I hadn't read ahead to the next section when I made my last comments, but I would repeat the emphasis that I made before. Why should these 1950's year classes be anomalous, and what habitat changes do you invoke such that we could not reach those kinds of numbers again?

DR. DESFOSSE: I don't want to talk about the Technical Committee's conclusions, I'll let Mike discuss that if he wants. The PDT felt that since the level of recruitment that was seen in those two year classes -- I think it was 1951 and 1958 -- had not been seen outside of any other time in the 44-year history of the database, that they were anomalous.

I'm not sure about the alterations to the habitat. There are some documents out there, NMFS source documents on habitat issues for other FMPs that reference alterations to habitat. We have not put that information together and put it into this draft FMP yet.

VICE-CHAIRMAN MOORE: One second, please, Mike Street first.

MR. STREET: There is not too much quantitative data, but there is a strong feeling among a lot of people that the carrying capacity of the system has been compromised by the last 50 years of dredging, filling, channelization and pollution, and that the system can no longer sustain the levels of stocks that formerly may have existed.

VICE-CHAIRMAN MOORE: Any further comments? Bruce.

MR. FREEMAN: I have a question sort of in response to the questions you asked. You indicate, or you asked the question why we're using where we are. It appears that your premise may be valid in that there may be other information, but we simply don't have it or it doesn't exist. And you may be right, there may be differences, but do you have a suggested way to approach it?

MR. SPITZER: No, not really. I'm just trying to emphasize the level of perhaps uncertainty, you might call it, that's here. I'd respond to Mr. Street by saying that given that menhaden are the kinds of feeders they are and the quantity of nutrient coming in off the East Coast that supports blooms of plankton, et cetera, you might as well argue the other way, that up over the whole of the century, we've done things that in some ways might enhance menhaden habitat at various

points from time to time.

But, no, it's more just sort of a common sense thing, that I assume one of the reasons the whole thing got started in 1955, the surveys, was because people were looking down the road and seeing post World War II this whole high tech fishery coming in, spotter planes, all of the experience that people had gained with technological fisheries, and common sense says that historically this is what was going on, that all of a sudden we gained this capacity to exploit these stocks at a level we hadn't before. But I can't offer a more refined option at this point, no.

VICE-CHAIRMAN MOORE: Thank you. I believe Joe, you might have had a comment?

MR. SMITH: Paul, I might direct you to a new buzz phrase that mostly is coming out of the West Coast, I guess, is regime shift. It's environmental variables changing an ecosystem, increasing or decreasing productivity. I think the Northwest Coast is way ahead of us in the southeast in looking at these things, regime shifts, multi-species management, and environmental factors, but that's the new buzz phrase is regime shifts. And that's maybe what we're seeing in Atlantic menhaden. You come in in the fifties and you think that's the way things should be, and you're just looking at one decade. Now we can look back at four or five decades and we see contraction, expansion, contraction, expansion. We've almost gone through two cycles.

VICE-CHAIRMAN MOORE: I'd just make the comment that I think we're pretty fortunate to have 45 years of a database here that Doug Vaughan says it's certainly one of the best in the country. I think we're pretty fortunate from a data standpoint. Any other board members?

MR. ERIC SMITH: Eric Smith, I've not had the opportunity to meet. I hear this debate and I appreciate it for two reasons, because it's a lively one and healthy and good points being made.

The other side of it, though, is if we have such a good database, we should always be wary about discarding data. What I hear is the early fifties data, we're speculating that maybe things have changed. That in itself I don't think is a reason to say that the two highest datapoints in the series are no longer valid. If somebody tests a hypothesis and says, okay, habitat or behavioral shifts, or whatever fish shifts have resulted in we'll never see that again, that's fine.

But if it's because we think it's happening but we don't know for sure, in my view you've got a 45 year dataset which is far better than a lot of other species we have and that's what you have to deal with. We have that. It makes my skin crawl a little bit to hear, well, those two years don't count any more. I'm obviously characterizing it for effect there, but that makes me a little leery.

So I would urge that you deal with the data you have and speculate or test why something is no longer valid, but if the conclusion of the PDT or the Technical Committee is there's a reason to leave it out, the reason should be clear.

VICE-CHAIRMAN MOORE: Thank you. Any other discussion? Bill.

MR. WILLIAM A. GOLDSBOROUGH: Just a comment relative to this discussion, that with striped bass we have a juvenile index/database going back to the fifties that had previous high points in the sixties through 1970, that were shattered in the mid-nineties. Of course, striped bass is intimately related to menhaden.

VICE-CHAIRMAN MOORE: Thank you. Tom.

MR. TOM FOTE: Isn't that also true that some areas are worse than they were in the fifties? Some areas, because of the Clean Water Act and sewer plants, that we've seen are a lot better than they were in the fifties. I can pick a few areas in New Jersey. We've opened more shellfish beds in the last 15 years than we've closed, which is the first time in history. We've also seen fish come back in the Delaware River because of sewer plants and things that were put in place.

So, yes, we've lost a lot more wetlands, we've lost a lot more bays and estuaries, but some of the pollution has come out of the system. So there is some difference. Some of the areas were more polluted in the fifties than they are now, especially in the Delaware river.

VICE-CHAIRMAN MOORE: Thank you, Tom. If I could just make the comment that this has been a topic that I know has been discussed on numerous occasions at the PDT level. Every year at the AMAC level it comes up and it gets a lot of discussion because it's very tempting to look at the fifties and say, wow, look at that stock, I wonder if we could attain something like that again. And it has been under discussion numerous times. I just wanted to point that out. Any other discussion for board members? Bill.

MR. GOLDSBOROUGH: A question for Joe Smith to clarify what he was saying a moment ago about regime shifts, and noting waxing and waning since the fifties and having gone through two cycles, I think he said. Joe, do you mean that is a result of regime shifts due to anthropogenic factors or climatic or both?

MR. JOE SMITH: I don't know, Bill. I'm just fresh back from Seattle where there was a workshop on ecosystem management. I went out with Doug, tagged along with Doug, and that's where I was acquainted with regime shift relative to Pacific sardine where they talk about -- with Pacific sardine you can go back thousands years in the sediments. They've looked at a number of scales and sediment cores and estimate that every hundred years there are two booms of Pacific sardines. And they have enough environmental data to look at those booms or expansions of the stock and say it's probably due to that eastern boundary current, that California current, that expands up the coast. It's a south to north current. They've got an eastern boundary current; we've got a western boundary current. They've got an animal that has a very discreet spawning period, and I think in the spring a few months.

We've got an animal that any month of the year you can find spawning individuals in the western boundary current of the Gulf stream. So they've got a better handle on the environmental factors. I don't know, here. This is a complicated animal. We've got juveniles in the Bay of Fundy back in the nineties.

The thing is we do have now two cycles of up and down, expansion, contraction; expansion, contraction. And maybe, to clarify back in the fifties, we did start sampling on a limited basis in 1952. I think John Rentjes and Tony Pacheco sampled up in Jersey and Delaware. When they realized that no one or two areas on the coast could effectively sample the whole stock, that's when they decided in 1955 to sample all the ports from Florida up to Southern New England.

So that's why that data set starts in 1955. There was a limited amount of sampling in the mid-Atlantic in 1952. I don't

know if I answered your question, Bill.

DR. GOLDSBOROUGH: I guess my point was that we see natural cycling in a number of species, and it's generally due to climatic factors, so that's not unexpected. But I'm not aware of any documentation of waxing and waning of stocks due to waxing and waning of anthropogenic impact.

VICE-CHAIRMAN MOORE: Thank you, Bill, thank you, Joe. Mike.

MR. STREET: In the SABRE reports, I haven't seen the whole thing and I would like to get a hold of it. I'm not sure how much of it I'll truly understand since most of it is modeling, and that's not my field. But I have read a couple of the abstracts and one of them said -- several of them referred to it, in fact -- that the formation of year classes of menhaden appear to be determined by factors acting on the fish when they are late larvae to early juveniles; that is, as they're coming across the shelf, entering the inlets, and beginning to move into the estuaries.

And those are clearly some sort of environmental factors. It could be physical factors, current, et cetera. It could be biological predation, but that was just from two or three of the abstracts.

VICE-CHAIRMAN MOORE: Thank you, Mike. David.

DR. PIERCE: It's getting back to the document and B, spawning stock biomass. Number one, choose an SSB target and/or threshold based on historical patterns. I read that over and then I compare the numbers in those two paragraphs with figure 2.6 in the same handout. And I note that the PDT is suggesting that a threshold of around 17,000 metric tons might be appropriate, a target of around 41,400 metric tons might be appropriate for spawning stock biomass.

But when I look at the figure, I see that since the mid-eighties there's been some up and down and then a slow rise in spawning stock biomass until 1997, when it peaks, relatively speaking, relative to 1965 or so through the current time period. It peaks and that peak is quite a bit above the suggested target and threshold presented by the PDT. I just wonder why the PDT has suggested those sizes of threshold and target when in recent years, we've actually been able to get the spawning stock biomass up to about 100,000 metric tons.

In addition, 100,000 metric tons is approximate to the theoretical -- they emphasize that -- the theoretical maximum recruitment that you would get, 108,900 metric tons. So my question to the PDT simply is why are we shooting so low when we were at least able to get ourselves up to 100,000 as a spawning stock biomass in recent years for whatever reason.

Granted, it's nothing like the spawning stock biomass that we were able to achieve back in the fifties and early sixties. We've already discussed that and those may be biomass levels we can never expect to achieve again. So that's my message to the PDT, a question and why shoot so low?

DR. DESFOSSE: I'll try to address that. There are two tables that you should look at. Table 5.1 is the summary of the historical SSB and you'll see there's 44 observations. It's the second line down, SSB times 1,000 metric tons.

The 1998 value of 73,000, you see the 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentiles; the PDT was basing their conclusions on that information, and also the table preceding that, which is table 7.2, where Doug has put together probabilities for high, middle, and low recruitment based on high, middle, and low spawning stock biomass.

There seems to be no relationship between SSB, the size of the spawning stock biomass, and the size of the recruiting class that it produces. If you look at high spawning stock biomass, you see that there's an equal probability of getting both low recruitment and high recruitment. And there is a tendency to get or have a higher probability of having low recruitment from low spawning stock biomass, 36 percent, versus a high recruiting class from a low biomass of 18 percent. So the PDT was basing their comments on this information.

VICE-CHAIRMAN MOORE: Thank you, Joe. Any other discussion from board members? Anybody in the audience like to make a comment? Jim Price.

MR. PRICE: My name is Jim Price, and I'd like to comment again on the historical spawning stock biomass. I know we discussed it. We don't want to rule out, and I certainly would agree, the data that was collected in the fifties, but I'd like to point out that, really, no one knows whether that could even be a low figure or a high figure.

If we went back another fifty years, we might see a spawning stock biomass twice the size of what we see in the fifties, so again, to rule that out now would, I think, with no scientific reason would be a real serious mistake, because we've had meetings, we've had workshops in the Chesapeake Bay region looking at this very problem, and we've come up through the Chesapeake Bay program with data that suggests that there's plenty of adequate food in the Chesapeake Bay once the larval menhaden enter the Bay. There may be problems at the mouth of the Bay, but certainly, we have not uncovered any evidence that would suggest the Bay doesn't have the carrying capacity that it had in the fifties where Atlantic menhaden.

Examples would be striped bass, how they've recovered. We see no reason why menhaden or other species can't recover as well. And other species are recovering at the present time, so I'd like to point that out that that's critical in not eliminating that data. And the other thing, the workshops that we've had, there are other options that we've looked at.

For example, the ctenophore population that has exploded in the Chesapeake Bay, and they could be a predator for Atlantic menhaden larvae. So there are all kinds of possibilities that could keep the menhaden population down, but nobody has really been able to figure out what's causing the problem now, so speculation in this report here would be -- I don't think would be founded on science anyway if you want to eliminate that data. Thank you.

VICE-CHAIRMAN MOORE: Thank you, Jim. Gordon.

MR. GORDON C. COLVIN: Joe, I may have found my answer here, but you referred to table 7.2 which appears to indicate some difficulty in detecting a stock recruitment relationship. This is over the entire time series in 1955 to 1997?

DR. DESFOSSE: I believe so.

MR. COLVIN: It would be interesting to explore this issue further. We didn't have very high spawning stock biomass for very much of that time series relative to the beginning part of that time series, and you wonder if there are relationships that just don't show up because you don't have much to compare. And that's something I hope we continue to explore. I would also just note that there are a couple of benefits to having a high biomass, one of which is that sometimes it helps with recruitment and maybe that's the case here and maybe it's not.

In all cases, however, it means there are more fish in the population that provide whatever benefits those fish provide. So I would like to emphasize that we not look only at stock recruitment issues when we talk about spawning stock biomass targets, but also about the benefits of having a larger population. I sort of agree with what Dave Pierce has kind of laid out here.

VICE-CHAIRMAN MOORE: Point taken. Any other board member discussion? Anybody in the audience? Age structure, we do have one section left here for Joe to review.

### Age Structure

DR. DESFOSSE: One of the other things that the board at its last meeting asked the PDT to look into was age structure. The PDT discussed this issue at length at its last meeting and came up with a recommendation that in lieu of defining the targets for the specified population age structure as part of the overfishing definition, that the Technical Committee should monitor the age structure through the current VPA methodology and report back to the board during the annual report. This can be formalized in Section 3.0 of Amendment 1 in the monitoring program.

The PDT did suggest retaining the current trigger estimates as part of a long-term monitoring program and renaming these as biological and fisheries status reference points. They would no longer be trigger variables; they would just be estimates of stock status. The PDT noted that it may prove difficult to manage the stock to ensure that a certain percentage of the population is made up of ex-age classes. It's currently difficult if not impossible to get an accurate picture of the younger age classes without the fishery-independent survey, as was pointed out earlier.

It's also becoming increasingly difficult to accurately sample the overall population based on the fishery-dependent sampling due to the consolidation of the fishery in its geographic range. Changes also in the reduction fishery practices have resulted in a reduced harvest of juvenile fish.

VICE-CHAIRMAN MOORE: Thank you, Joe. Any discussion about the age structure? Board members first.

DR. DESFOSSE: I would ask if the board concurs with the idea of retaining that methodology and including that as part of the annual report?

VICE-CHAIRMAN MOORE: Bill.

MR. GOLDSBOROUGH: I guess I need a little clarification on what's being recommended. In lieu of defining targets, the PDT recommends retaining the current triggers and calling them reference points.

What would that mean for management? How would they be applied and how would we respond to changes in those parameters, especially given that the peer review -- well, I guess the peer review, if I recall right, recommended not using those triggers or at least not using some of them. Maybe you can clarify it for us.

DR. DESFOSSE: The suggestion here from the PDT is that in lieu of identifying a certain age structure that you want to be at, that you retain the methodology that has been used in the past, the trigger variables, and include that as part of the report. The Technical Committee would monitor the age structure of the population -- it's part of the output of the VPA -- and report to the board what is going on with the population, whether you're having more age classes represented in the population or if the age structure is being truncated.

The PDT is not suggesting just renaming the trigger variables and using them for management. They just want to get the board's concurrence to continue the dataset and use that as part of the report on the status of the fishery and the status of the stock.

MR. GOLDSBOROUGH: So then these reference points would be used to describe some optimal age structure? We would just monitor them and they would tell us how well we're doing relative to age structure. Is that basically it?

DR. DESFOSSE: The reference points that we spoke about before, the fishing mortality and SSB, are separate from this discussion.

MR. GOLDSBOROUGH: Right, I used the term reference point because that's what the PDT is recommending we call them.

DR. DESFOSSE: What Mike was saying just now is that these reference points would supplement the other information on the status of the stock. I'm not sure if I've totally answered Bill's question.

MR. GOLDSBOROUGH: I guess my point was that if we would continue to use these trigger variables but we're going to call them reference points -- and I understand the importance of that distinction, that they are biological and fishery reference points, and that the peer review had recommended throwing out those that were based on the fishery, I think, for management purposes, right?

But that we would be retaining them mainly to give us some ongoing guidance as to the status of the age structure, right? So, in essence, isn't that a target of sorts for age structure for management purposes?

MR. STREET: It is not a target unless you select it as a target. It is a measure and supplemental information that we would bring forward. For example, the primary concern right now is recruitment, and recruitment is one of the datapoints that we've been bringing to the board for years, and for a good number of years we have told you that recruitment has declined and we are concerned.

And now recruitment is the central concern. So we've been providing the measure; it's just we've never had a target. In the current plan the point was that when these thresholds that we had set as the trigger variables were exceeded, we would bring it to you and it was up to you to make decisions. And they were criticized as not really being trigger points because there was no required decision. It was up to this board on whether or not action took place, and none ever did.

But I think that it's very important to maintain these measures and inform you of these measures because they do provide information on how the stock and fishery are performing.

MR. GOLDSBOROUGH: So they would be just for our information and we wouldn't use them for management purposes?

MR. STREET: You would use them as you saw fit.

VICE-CHAIRMAN MOORE: Thank you, Bill; thank you, Mike. Further discussion? Bruce.

MR. FREEMAN: I had a question on the very last paragraph under the age structure. The sentence just caught my eye where it indicates that the average size, the mean weight of age two and three year old menhaden has increased. Is there any explanation for that Mike or Joe, or anybody?

MR. JOE SMITH: During the nineties we've had poor recruitment, that's no big secret. We've also had a contraction of the stock. We haven't seen fish in commercial quantities north of Cape Cod since 1992, 1993. Coastwide contraction of the stock, it's almost like everything shifted down below Cape Cod; hence, your bigger and older fish are no longer north of Cape Cod being fished by an IWP up in the Gulf of Maine. They're being fished in the mid-Atlantic and to some extent Chesapeake Bay. In the mid-nineties we saw some enormous two and three-year-old fish coming out of Chesapeake Bay that looked like fish coming out of the IWP in 1988, 1989, 1990.

So I think when you're seeing this coastwide contraction, probably because of low recruitment for consecutive years, you're just seeing larger fish at age in areas where they're not when you've got an expansion of the coastal stock up north. And I think to some extent we saw that in the sixties, too. We took a little peek at mean size at age in the Chesapeake Bay area in the sixties, and, indeed, that seemed to have shot up.

MR. FREEMAN: If I may, Mr. Chairman, you seem to be indicating that since the fish are in the optimum area, that they will be larger for a given age, was that the explanation?

MR. JOE SMITH: Well, they were down there in the heart of the fishery in the nineties. The Chesapeake Bay is the center of the fishery. And there are some density-dependent things going on. When we see really good year classes come through, robust year classes, mean size at age of those ones goes down. There's some density-dependent stuff going on, too. Consecutive weak year classes in the nineties, we've seen bigger size at age one fish, a couple of things.

VICE-CHAIRMAN MOORE: Thank you. Anyone in the audience care to comment?

MR. PRICE: Jim Price, and I have a question on the bottom of the second paragraph where it says the changes in the reduction fishery practices have also resulted in a reduced harvest of juvenile fish. Could somebody explain to me what they mean by that, because I thought the juvenile fish accounted for about 70 percent of the landings?

DR. DESFOSSE: The reference is to age zero and age one fish, not to age two. Some of the age two fish are maturing so the term "juvenile fish" in this case is referring to the age zeroes and age one, which the industry has not targeted as they had in ten, fifteen, twenty years ago.

VICE-CHAIRMAN MOORE: Anyone else? So what's the desire of the board here in terms of action?

DR. DESFOSSE: I think from a staff perspective, if I could just add here, the PDT will have the results of the assessment in two weeks and AMAC as well at the AMAC meeting. Are there any additional items that the board needs to see or that the board would like the PDT to work on for the next board meeting? That would be something that staff would find helpful.

### Juvenile Surveys

MR. PERRA: I would think I would like to see some kind of recommendation for getting juvenile data from the states. I know we've had recruitment farther up north now, and there may be databases that could be utilized out of Connecticut, New York, Maine, that we could add to the juvenile survey data.

In most of the plans there are recommendations for coordinating sample collection and states can be asked or required to collect samples. I'd like to see the PDT take a look at what they think would be a good coastwide perspective. Maybe they don't need to require every state to do sampling, but we at least could talk about what are the key areas that you'd need to get the data from.

VICE-CHAIRMAN MOORE: Steve Jones.

MR. STEVE JONES: Mr. Chairman, I fully agree with Paul, and I think if these states showing interest now, that I think they basically maybe should be required, each state to sample, because we have seen in this past year real good recruitment in the northern, states but since we don't fish up there, there's no way of telling how many recruits are coming into our stock.

So I think it would be a real good idea that each state that does have interest on this board have a requirement so we can get a good picture of what the overall stock or recruitment is out there.

VICE-CHAIRMAN MOORE: Bruce.

MR. FREEMAN: I would suggest along those lines that Joe contact each of the states to see what present sampling is conducted and whether, in fact, that information would be useful. At least we'll get an idea of what's available, and then determine if in fact that's adequate or more should be done. But as I indicate, from New Jersey I think there will be considerably more sampling, and somewhat more opportunistic, but this will occur for a number of years, and I think it would be very valuable and certainly would be willing to supply that information.

VICE-CHAIRMAN MOORE: Thank you. David, and then Bill.

DR. PIERCE: The points have already been made that at least last year there was a very significant abundance -- at least it appeared to be a significant abundance of juvenile menhaden, young of the year, in our coastal waters in Massachusetts.

I will go back to Mike Armstrong, a member of the plan development team, who deals with menhaden for us in our state, and ask him to explore this a bit and to work with the other PDT members and technical people to determine if indeed a fishery-independent monitoring program might be possible in our state, since if this is the beginning of a trend -- hopefully it is -- we certainly need to be on top of it and to assess it as best we can.

I'm unfamiliar with how the surveys are done in other states, but I'm sure Mike and other members of our staff can

contact those states that do have a program to see if we can put something in our waters that would be along a similar nature.

MR. GOLDSBOROUGH: I would request that as the PDT fleshes out these options, that specific mention is made of how each of them relate to the appropriate recommendations in the peer review, as appropriate for each of these options. Also, I'd like to request that all members of the board receive a notice of the upcoming AMAC meeting, given that these technical analyses are targeted to be completed for that meeting. I think that would allow the board at least to be aware of, if not choosing to get involved, to come to that meeting and be involved in the discussion with the most up-to-date information.

DR. DESFOSSE: In addition to sending out formal notice of the meeting, I'll just mention that the AMAC meeting is April 18 and 19 in Norfolk, Virginia. If anyone wants further details at this meeting, I can give them to them.

MR. STREET: Relative to coastwide young of year sampling, the Management and Science Committee has, on several occasions over the years, conducted a survey of the states as to what kinds of sampling programs and other types of programs are going on in their various jurisdictions.

And I would suggest that that would be an appropriate format to use to determine what is going on that might be useful to identifying relative abundance of juvenile menhaden to serve as a basis if the Commission would want to have either a recommended program for providing the data or a required program to provide young of year data.

VICE-CHAIRMAN MOORE: Well, unless there's any objection, unless I hear otherwise, we can move on to the next section now. I would note that we have fallen about thirty minutes behind schedule.

DR. DESFOSSE: Based on the earlier comments when we first started reviewing the overfishing definition information, it's my feeling -- and correct me if I'm wrong -- that the board does not wish to go any further in terms of the agenda items in reviewing the management options.

Obviously, you can't review and approve the public hearing document. I think you've given instructions to the PDT, and we'll come back to you with more information plus the updated assessment at the June meeting. Is that the sense of the board?

VICE-CHAIRMAN MOORE: David.

MR. PIERCE: Thank you, Mr. Chairman. The assessment, as I understand it, is going to be done in two weeks, and then when will that be circulated to all of the board members?

MR. STREET: We will include the results of the information in the AMAC report to the board. That is, particularly for the six trigger variables that we now monitor, we have historically had supplemental information in that report, and we'll work with Joe to see whether we want to just do it all as part of the AMAC report or have a separate PDT report.

There's no need to kill extra trees, so we'll try and come up with the most efficient way to present the information since it's going to just all be done together, because, as I said, we always do supplemental analyses of various kinds as part of the AMAC report. We'll get the report done as quickly as we can after the meeting. We generally leave the meeting with a rough draft report, and so we'll be pretty close to it. But this is going to have additional information, so we should be able to have it in a pretty timely fashion after the meeting. It'll depend to a degree on how fast Joe can work, and also because Doug Vaughan, I'm sure, will have to do a few more additional runs on some things as questions come up.

MR. BORDEN: Just as a follow up, I'm just concerned about the timing, that we can anticipate, then, approximately four weeks from now we would have the updated assessment, and we'd have a PDT recommendation on the overfishing definitions, filling out the holes that essentially exist?

DR. DESFOSSE: That's what I would strive for, as a staff person, to try to get it to the board in a timely fashion so that they could review it prior to the June meeting.

#### OTHER BUSINESS

VICE-CHAIRMAN MOORE: Well, is there any other business for the board? Steve.

#### Management Board Structure

MR. JONES: Yes, Niels, I have some letters that I'd like to pass out to each board member. You probably may have not seen them. They were addressed to Chairman Pruitt, and they are from senators in Washington, representatives, and also from various states with the concern of the makeup of the board here. Obviously, we have an expanded board now and with intentions of booting all of industry off, obviously, we of industry are not totally happy with that. We feel like we're a big player in this and we'd like to be part of this board, especially since it's so expanded. I think we're up to about 50 members now. So we feel like we should still be included on that and a lot of these letters will address this from the senators, like I said, in Washington and various states. They're concerned that we're being held out of this when we have vital information that we can share. So I would like to pass these around at the end.

My management has discussed this with Mr. Dunnigan with the new board just being the commissioners from the states, and he assured us that any decisions out of here would be scientific and not political. And I'll have to believe Mr. Dunnigan for his word, but the actions of the last meeting of the board concerns me greatly in that it was brought up about this Gilchrest letter. He immediately wanted to put quotas on the industry and all. And one of the options was to kick us off the board immediately, so when I hear things like that, I'm not sure everything is scientific and not being politically driven. So that's where my concerns come from there.

So while we're in the draft form, **I would make a recommendation that we reinstate the industry on this expanded board** of approximately 50 members. With that in hand, I will pass these out and let you look at them and read them, and I'd like for you to read over them and ponder what these senators and congressman have to say.

VICE-CHAIRMAN MOORE: Steve, did you give that to us in the form of a motion or do you wish to make a motion?

MR. JONES: I would just like for the board to consider it. I don't want to be forced into making a motion. I would just like for each commissioner to consider this.

MR. JULE WHEATLY: **I'll go ahead and make it in the form of a motion.**

VICE-CHAIRMAN MOORE: Make an informal motion?

MR. WHEATLY: Make in the form of a motion.

VICE-CHAIRMAN MOORE: Please do.

MR. WHEATLY: A motion to reconsider and put industry back on the board.

MS. SHIPMAN: Mr. Chairman, we need a parliamentary ruling on whether this motion is in order or not. I do not believe it is, and I'd like to request our Executive Director or whomever is our Resident Parliamentarian to give us a reading on that.

VICE-CHAIRMAN MOORE: Dieter.

MR. DIETER BUSCH: Mr. Chairman, since the board took action on this at the last meeting and right now the board structure has been identified as being an interim structure until and when the amendment is completed, at this point the industry is on the board as are the states. So I think this is the way the structure is right now, and then the amendment process will finalize the membership.

VICE-CHAIRMAN MOORE: David.

MR. BORDEN: Thank you Mr. Chairman. I think Dieter stated the point well. If the intent here is slightly different than that and if the intent is that in the public hearing document we would include an option which would allow the menhaden industry to stay on the board, then I think that's a different suggestion.

And it's certainly something the board can take up, but I agree with Dieter's interpretation. I think what has been suggested here is something slightly different than what the intent is. I think the intent is -- if I understand the comment that was made, **the intent is to include an option in the public hearing document which would allow the industry to stay on the board.**

MR. WHEATLY: Correct.

VICE-CHAIRMAN MOORE: Mr. Dunnigan, do you care to provide any clarification or guidance here?

EXECUTIVE DIRECTOR JOHN H. DUNNIGAN: My highest FMP director and my chairman are both in agreement. It must be correct.

VICE-CHAIRMAN MOORE: Jule, I think we need something referencing this as an option in the FMP.

MR. WHEATLY: What I'm asking is to reconsider, and I know this board can't make any final decision on it. We're just asking to reconsider.

VICE-CHAIRMAN MOORE: Jack.

MR. TRAVELSTEAD: Jule, **let me suggest that you change your motion simply to add a second alternative to the public hearing draft of the amendment to have the management board structure look as it is now, with all of the states represented as well as the industry members.**

The only option available now in the public hearing draft is to go to what we call the normal structure for a management board, which would be no industry representatives. I think what you mean by reconsidering is to allow industry to be present on the board. The way you get at that is to simply add a second alternative to the public hearing draft that could be considered in October.

MR. WHEATLY: I'll take any change you want to make, anything that'll help out. Anything that would help keep industry on the board would be fine.

VICE-CHAIRMAN MOORE: Jule, I think we need a second to continue this discussion.

MR. WILLIAM A. ADLER: **Second.**

VICE-CHAIRMAN MOORE: Okay, further discussion then? Yes, sir.

MR. A.C. CARPENTER: I'm looking through the draft management report. Where is the section that deals with membership of the of the management board?

MR. DESFOSSE: It's Section 4.8. I have to get my copy out to figure out what --

MS. SHIPMAN: Page 58.

DR. DESFOSSE: Page 58.

VICE-CHAIRMAN MOORE: George, first.

MR. LAPOINTE: To get at the intent that people were talking about, **I'd like to offer a substitute motion, and that is to list as an alternative in Amendment 1 the board structure that would include the structure of the interim board with both the states represented through the three commissioners and industry.**

I'm just trying to get the discussion moving to get it to put it as an alternative in the FMP so we can do it correctly procedurally.

VICE-CHAIRMAN MOORE: We have one motion on the table right now.

MR. LAPOINTE: And I offered a substitute.

MR. ERIC SMITH: Second here, Joe. Is that top language quite similar to what you mean?

MR. LAPOINTE: Yes, I didn't know that Jule had --

MR. ERIC SMITH: It was being revised as you spoke.

MR. LAPOINTE: All right, and **if that's the case, I don't need to do a substitute**, I apologize.

MR. ERIC SMITH: Okay, then **I withdraw as well.**

VICE-CHAIRMAN MOORE: Further discussion on the original motion?

MR. CARPENTER: I was going to follow along with what George had in mind.

VICE-CHAIRMAN MOORE: Bill.

MR. GOLDSBOROUGH: I guess I'd just make a comment that I guess starting with the peer review, in a formal sense

we had a recommendation that we go to a standard makeup Technical Committee and Advisory Panel. They didn't get into board structure at that point because they weren't asked to, but that would follow; the idea being that the Commission and the ISFMP has a well-evolved process for getting input from all stakeholders and from the technical people to the board level.

And I understand this motion, but given that background, it leads me to wonder if someone might make a similar request or motion that other stakeholders be included at the board level. And I just offer that thought as a context for considering this motion. I'm not sure how far down that road or where you stop when you start heading down that road.

VICE-CHAIRMAN MOORE: Thank you, Bill. George.

MR. LAPOINTE: To Bill's comment, I'm not too concerned about that. The reason that I'm uncomfortable with this motion is, in fact, we have had a special arrangement with menhaden, and we're making a transition, and I'm not uncomfortable with defending our transition in public and providing this alternative to provide a counterbalancing idea to talk about why the board made the decision it did.

VICE-CHAIRMAN MOORE: David and then Steve.

DR. PIERCE: Well, I guess my comments are pretty much along the same lines as George. We discussed this at the last board meeting. We made a decision to change board structure after Amendment number 1 is through. I thought it was over and done with, but apparently we didn't follow proper procedure. This motion is being made with the intent for us to follow proper procedure to give it an airing that it requires.

I need to be corrected, I guess, and I misunderstood what we did the last time around. I thought that was the final decision on this issue. Now we're going to bring it out to public hearing again and hear comments on something that we've already heard comments on; and then after debate, we decided to go in a different direction, change the board structure. What have I misunderstood?

VICE-CHAIRMAN MOORE: Steve and then Tom.

MR. JONES: Just to address Bill's question about the stakeholders, you know, I only can put on one hand the stakeholders, which are basically three catches can be 99.9 percent of the resource, but there are three individuals here that represent that, so it's not like any other fishery where you have a large contingency of stakeholders. There's very few that commercially catch fish.

MR. FOTE: What was decided at the last board meeting, to refresh Dave's, we basically made a motion to add all the states on at the same time that we kept industry on the board until we finished the amendment and then to make that decision after the amendment was gone through.

That's the decision that the board made, that's what's in the minutes. And as far as stakeholders, when I do stakeholders -- when we talk about stakeholders and we talk about environmental issues or anything else, the stakeholders are the whole gamut of people that are affected by decisions, whether it's the builders, the environmentalists, the people that live on the water.

And so when we talk about stakeholders, it's not just the people that make the money out of the harvesting of the fish, but it's all the people that represent all the other entities that have got concerns about that. So that's all the stakeholders in the industry.

VICE-CHAIRMAN MOORE: Thank you. Eric.

MR. ERIC SMITH: Thank you. The only reason we need to have this motion today is to make sure in the public hearing document we give this issue a full airing. And the reason it has evolved like this with a lot of letters from Congress is because there's such a sensitivity in it. And that's why, I think, the motion is a good one to air this thing as fully as it needs to be before we make a final decision. The reason I like the motion is because this fishery, like no other, is in the mode of "circle the wagons because everyone is attacking." For that reason, more than most other fisheries, there is a good point to be made that that few number of people maybe ought to be at the table with all the rest of the members of the board so that all the issues that rise and fall in menhaden management get fairly heard and voted on.

I know I agree with Tom. The stakeholder comment, frankly, jangled me wrong, because there's a lot more than just the industry. But it's that industry that always seems to be on the ropes, it's only four people. I think the debate, after public comment, should be what's the right mix of management board for this particular species. Thank you.

MR. PERRA: I'm inclined to support the motion because, basically, we got public comment, we came to a compromise, formed this new animal that's sitting around the table here, and we really haven't got public comments back on the compromise. So let's include it in the document.

VICE-CHAIRMAN MOORE: I think Steve was next.

MR. JONES: I just want to address the stakeholders. I don't want to feel like it was just the commercial end of it. When they expanded the board to three members from each state, then I assumed that would be the stakeholders looking for environmental whatever, so don't feel like I just thought it was the industrial stakeholders. That's why I figured this board was expanded, to cover all avenues.

VICE-CHAIRMAN MOORE: Point taken. Bill.

MR. ADLER: If something like this is finally approved after the public hearing, does this preclude the possibility of also having an advisory panel made up of stakeholders from all stakeholders? Does that preclude that that can't be or could there also be a decision made after the public hearing that we'll also have an advisory panel? Is that still open?

DR. DESFOSSE: The way the draft document is right now, it has advisory panels and technical committee structures similar to all of the other species under the Commission.

MR. ADLER: But that's one option. If you add this as an option and then you go to approve this one, you can still also add in an advisory panel without a lot of fuss, can you?

DR. DESFOSSE: If that's what the board wants.

MR. ADLER: So it's doable; you know how public hearing things go. Okay, all right, thank you.



VICE-CHAIRMAN MOORE: George.

MR. LAPOINTE: I don't think we're going to hear any new arguments, Mr. Chairman, and for that reason I'd like to call the question.

MR. WHEATLY: Second.

VICE-CHAIRMAN MOORE: Do we have a second?

MR. WHEATLY: Yes.

VICE-CHAIRMAN MOORE: Do we need a caucus at this point, or are we comfortable with -- one second please. All right, reading the motion, "**move to add a second alternative to the draft FMP to continue having industry members on the Menhaden Management Board**". Motion made by Mr. Wheatly, seconded by Mr. Adler. Do we need to caucus or are we -- okay, short caucus please.

MR. FOTE: There was a second to call the question, but I still had comments to make. There was no vote whether to call the question or not, you just moved on to the motion. That's why I'm asking for a reading from the Chairman, basically to make a decision.

VICE-CHAIRMAN MOORE: That's beside the point. We just called for a caucus here, Tom. Okay, are we done caucusing then? Call the question. All those in favor of the motion as it reads, please say aye; opposed; abstentions, one abstention; null votes, any null votes? The motion passes. Tom.

MR. FOTE: Just to make my comment, which was different than the other comments that were made, that we did go to public hearing with this option when we went out with the last public hearing document.

We received a lot of comments on that part of the document. As a matter of fact, that was most of the comments in New Jersey. I have no problems with going with this motion and put it back in the public document, but to say we did not go out to public hearings before that is wrong.

And that's all I wanted to correct. And that was not put out there because we did go to public hearings. There was a lot of comments in New Jersey over this issue, and we have those comments on the record, in the written record. So to say that we did not go to public comments is wrong. That's all I was trying to correct.

VICE-CHAIRMAN MOORE: Thank you, Tom. Is there any other business at this point? Is there anybody in the audience that would like to bring up any new business?

MR. WHEATLY: Motion to adjourn.

VICE-CHAIRMAN MOORE: All those in favor of adjournment, say aye. We're adjourned.

(Whereupon, the meeting was adjourned at 9:55 o'clock a.m. April 5, 2000.)

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