

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

**March 11, 2004
Alexandria,**

ATTENDANCE

Board Members

Lewis Flagg, ME DMR	Robert Smith
Dennis Abbott, NH proxy for Rep. Mary Ann Blanchard	Tom Fote, NJ Gov. Appte.
G. Ritchie White, NH Gov. Appte.	Bruce Freeman, NJ DF&W
William Adler, MA Gov. Appte.	Jeff C. Tinsman, DE Div F&W
David Pierce, MA DMF	Russell Diez, MD proxy for Sen. Richard F. Colburn
Vito Calomo, MA, proxy for Rep. Anthony J. Verga	William P. Jensen, MD DNR
David Borden, RI DEM	Bill Goldsborough, MD Gov. Appte.
Gil Pope, RI Gov. Appte.	A.C. Carpenter, PRFC
Gerry Carvahlo, RI proxy for Rep. Eileen S. Naughton	Lyell Jett, VA proxy for Sen. John Chichester
Fred Frillici, CT Proxy for Sen. George L. Gunther	Catherine Davenport, VA Gov Appte.
Lance Stewart, CT Gov. Appte.	Jack Travelstead, VMRC
Eric Smith, CT DEP	Damon Tatem, NC Gov. Appte
Pat Augustine, NY Gov. Appte.	Preston Pate, NC DMF
Brian Culhane, NY proxy for Sen. Owen H. Johnson	David Cupka, SC DNR
Gordon Colvin, NY DEC	John Duren, GA proxy for Gov. Appte, Ralph. J. Balkcom
Edward Goldman, NJ proxy for Assemblyman	Steve Meyers, NOAA Fisheries
	Bill Cole, USFWS

Ex-officio Members

Matthew Cieri, ME DNR, TC Chair

Staff

Vince O'Shea	Nancy Wallace
Robert Beal	Brad Spear

Guests

Niels Moore, Menhaden Resource Council	Charlie Hutchinson, MSSA Dorchester Charter
Toby Gascon, Omega Protein	Daniel Sides, MSSA/CCA
Mike Bloxom, LEC MD	James Price, CBEF
Roy Miller, DE Div Fish and Wildlife	Amy Schick, Environmental Defense
Dick Brame, CCA	Michael Scott, F/V Wizard
Ed O'Brien, MD Charterboat	Joan Berko, F/V Wizard
Clint Waters, MSSA- Dorchester	Joe and Denise Wagner, F/V Saturn, Alica Linn
Chuck Prah, MSSA	

TABLE OF CONTENTS

Call to Order, Chairman Jack Travelstead.....	5
Approval of Agenda.....	5
Approval of Proceedings, December 2003.....	5
Public Comment.....	5
Technical Committee Report.....	7
2003 Stock Assessment Report.....	15
2003 FMP Review.....	21
2003 Compliance Reports.....	22
Management Implications from 2003 Stock Assessment Report.....	22
Update on Multi-Species Model.....	31
Elect Vice-Chair.....	32
Adjournment.....	33

SUMMARY OF MOTIONS

Move to approve the 2003 Atlantic Menhaden FMP review for publication.

Motion made by Mr. Borden, second by Mr. Fote. Motion carries.

Move to approve the 2003 Atlantic Menhaden PRT Compliance Report.

Motion made by Mr. Jensen, second by Mr. Carpenter. Motion carries.

Move to initiate an addendum to update the biological reference points, F target and threshold, and adjust the frequency of stock assessments.

Motion made by Mr. Borden, second by Mr. Augustine. Motion carries.

Move to include in the addendum a suite of management options to assess and prevent the localized depletion of menhaden in Chesapeake Bay.

Motion made by Mr. Goldsborough, second by Mr. Freeman. Motion postponed.

Move to postpone this motion to the May meeting.

Motion made by Mr. Augustine, second by Mr. Freeman. Motion carries.

Move to nominate Mr. Carpenter to vice chair.

Motion made by Mr. Adler, second by Mr. Augustine. Motion carries

**ATLANTIC STATES MARINE FISHERIES
COMMISSION**

**ATLANTIC MENHADEN
MANAGEMENT BOARD**

**Radisson Hotel
Alexandria, Virginia
March 11, 2004**
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The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Presidential Suite of the Radisson Hotel, Alexandria, Virginia, on Thursday, March 11, 2004, and was called to order at 10:32 o'clock, a.m. by Chairman Jack Travelstead.

CALL TO ORDER

CHAIRMAN JACK TRAVELSTEAD: If board members would take their seats, we'll get started with the Atlantic Menhaden Management Board. Thank you all for coming. Sorry we got started late, but we were in an important session about how to run meetings properly, starting with getting them started on time. We're still allotted three hours for this meeting, and I intend to make use of all of it if it is needed. I'm not going to skimp on anything.

APPROVAL OF AGENDA

Everyone should have a copy of the agenda. Are there any changes proposed by any board member on the agenda? If not, then the agenda will stand as printed. You were also provided with the minutes of the December 2003 meeting. Are there any corrections or additions to those minutes? Seeing none, the minutes will stand as printed.

PUBLIC COMMENT

The next item on the agenda is public comment. We have allotted 15 minutes for public comment for issues that otherwise will not be debated and appear on the agenda today. If there are new topics or issues that someone wants to raise at this point, let me have a show of hands from the public.

Let me also say that I do intend to allow public comment during other portions of the agenda. If you have points that you want to make, we will certainly try to fit those in, so don't feel like you have to make

all of your comments up front here during this 15-minute period.

There was a gentleman in the back who raised his hand, if you want to come forward. Let us have your name, and if you represent a group, we'd like to know that, too. Thank you.

MR. CHARLIE HUTCHINSON: My name is Charlie Hutchinson. I represent the Dorchester Chapter of the Maryland Saltwater Sportsmen's Association. I came here today to see how the management board manages.

Having attended the Technical Committee meeting, I think their report will fail to answer some of the charges that they were given, at least in terms of adequately considering the various papers that were submitted to them.

They will be advocating more research, I guess, which admittedly is needed. The public, I believe, will be looking to this board to be more proactive and start amending the present fishery management plan promptly.

Managing the resources often requires action when the path is neither clear nor easy nor science clearly showing the extent of damage and a solution. The heart of contention is the largely unregulated reduction facility that Omega Protein operates in Reedville, Virginia.

This facility is responsible for 80 percent or more of the entire harvest for all of the Atlantic Seaboard. Most, if not all, of the catch is internal to the Virginia waters of the Chesapeake Bay, a very concentrated removal in a relatively small area compared to the entire Atlantic Coast.

The current management plan provides no protection for the Chesapeake Bay, only for the coast-wide stock. I would like to see that plan amended to require Omega to carry out its fishing operations external to the Bay.

Now I would expect Omega to vigorously oppose any restrictions which would interfere with their profitability. I would if it were my operation. For those on the board who might not be familiar with Omega, which is unlikely, you might find the following facts of interest.

Omega is the “800 pound gorilla” of the reduction industry. According to their 2002 annual report, the company, as a whole, processed 607,000 metric tons of menhaden. Three of the four plants that Omega operates are in the Gulf.

2003 landings were 517,000 metric tons and 166,000 metric tons for the Gulf and the Atlantic respectively, a total of 683 metric tons. If Omega’s 2003 take was equal to 2002, they would have 88 percent of the market.

Omega owns four of six remaining operating plants. Reedville appears to be one of the smaller of the Omega plants. Restrictions on Reedville’s plant would not put the Omega Protein Corporation, based in Houston, in financial jeopardy.

One final thing, the Reedville plant is currently operating on a consent basis for exceeding its wastewater quality limits, especially for cyanide. The water quality limits are much less restrictive than the Chesapeake Bay 2000 agreement, of which Virginia is a partner.

I guess the gorilla isn’t too friendly. First, it takes a huge part of a public resource for private profit, then overloads the source of its raw material with excessive nutrients. Maybe it’s time to get the cork out of the bottle. Thank you.

CHAIRMAN TRAVELSTEAD: Thank you, Mr. Hutchinson. Are there other public comments at this time? Jim, come on up. Is there anyone else who intends to speak during the public comment period? Okay, you’re going to be our last speaker, Jim. We do have a copy of your letter, which apparently you’ve distributed to all the members.

MR. JAMES E. PRICE: Thank you, Mr. Chairman. My name is Jim Price, Chesapeake Bay Ecological Foundation. I’ve got some comments that I would like to make in regard to the Menhaden Technical Committee report, dated February the 2nd and 3rd.

I can make them now or make them later, but I sent, of course, a copy of my report to the board. The board requested the Technical Committee to review everyone’s papers and reports, including mine; and from what I can tell, they really didn’t follow your instructions to the letter.

Of course, you can’t expect that, but there was no individual assessment from the different reports

submitted, so their report is an accumulation of thoughts based on everyone’s request to the board. Would you like me to make my comments in regard to their findings now or after the Technical Committee gives their report?

CHAIRMAN TRAVELSTEAD: It’s up to you. If you want to raise them now, I’m not going to allow you to raise them again.

MR. PRICE: Okay, I can go through them now. It won’t take that long. Even though they didn’t follow the board’s instructions on Number 1, I do support their final decision that -- what they’ve decided.

On Number 2, in regard to their response concerning the issue of localized depletion within the Chesapeake Bay, I believe we need to clearly define “localized depletion”, because until we all agree exactly what we’re talking about, the questions in regard to this have not been properly answered, and there is confusion as to what year classes and actually what we’re talking about.

And under A, the TC failed to consider low recruitment could be the result of increased predation on Age 2 to 4 menhaden by the large migratory striped bass population while they’re along the coast and in the bay. This would cause the assessment to over-estimate the spawning stock biomass.

I think, although there may not be adequate information to fully look at this problem, they should consider this as one other possibility of why the spawning stock biomass is so high, and we still get low recruitment.

We all know the striped bass population along the coast is growing much bigger than it ever was, and certainly their predation on menhaden is an important factor.

B, the TC stated that fewer landings from the bay are a result of a decrease in effort. Well, again, an increase in consumption of these larger menhaden by the migratory population could also result in fewer landings in the bay.

C, the TC states that there is some debate as to what are the prime forage size menhaden. Currently multi-species assessment, et cetera, point to 0 to 1. It should be noted that 0 to 1 are prime forage for the Chesapeake Bay striped bass population, but age 1 to 4 menhaden can be important as forage for spring migration of striped bass into the bay, and 0 to 4 can

be important to the fall migration.

The TC's conclusion is incorrect if they are assuming that localized depletion concerns are directed towards age 0 and 1, which apparently is what they have said in their report. This points out the need to clearly define which age classes are being referred to in localized depletion.

Number 4, the TC acknowledges they cannot evaluate the ecological role of menhaden. However, the goal of Amendment 1 is to manage the Atlantic menhaden fishery in a manner that is biologically and ecologically sound.

Should the Menhaden Management Board take a more cautious approach than allowing an unlimited harvest of menhaden if the Technical Committee cannot evaluate the ecological role of Atlantic menhaden? I think that should raise some concern.

The stock assessment should continue to be conducted annually until the population recovers to a healthy level before any changes in timing of the assessments.

I support the TC's recommendation that the board implement an addendum to the Menhaden FMP if it would help protect and maintain the ecological role of menhaden along the coast and in the bay.

And, finally, one thing very important to arrive at some of the decisions that need to be made, the TC should include a coastal diet study in the proper temporal and spatial scale for striped bass, bluefish and weakfish to support the MSVPA.

These data should be applied into a bio-energetics analysis to determine if the forage supply is adequate to support these predators. Unless we do that study, we really don't know what the predation is along the coast, and we don't know for sure whether the spawning stock biomass estimates are accurate. Thank you.

CHAIRMAN TRAVELSTEAD: Thank you, Mr. Price. Let me also note that the staff has received some 58 letters on the subjects to which Mr. Hutchinson and Mr. Price both spoke. They have distributed a copy of two of those, which more or less represent the summary of the comments found in the 58. But there are copies of all 58 letters in the back of the room if you want to take a look at those.

Next item on the agenda is the Technical Committee report. I have asked Matt Cieri, our Technical

Committee chair, to remind the board what the charges were that were presented to the committee at the last meeting, and then he will proceed to go through those individually and offer the Technical Committee's recommendations. Matt.

TECHNICAL COMMITTEE REPORT

MR. MATTHEW CIERI: I'm going to run through the charges and the tasks one by one. There were a total of five tasks charged to the Menhaden Technical Committee, and then we have a few other "other" issues that appear in the report.

The first task was to look at a bunch of different letters from the Chesapeake Bay Ecological Foundation, National Coalition of Marine Conservation, a letter from Environmental Defense, one from Omega Protein, one from CCA, as well as the advisory report.

All the stakeholders brought up some very interesting issues that we feel are important to menhaden and the ecosystem in which they reside. One of the things that came to the forefront is that we're really unable to address the relationship between a lack of forage and the health of the striped bass population or for other predators.

We're pretty much a Menhaden Technical Committee and it is very, very difficult for us to cross species bounds and try to assess something in another species framework. We took a good hard look at all the letters and discussed them at length for much of the meeting.

We found that it was probably pretty much inappropriate to technically review the papers given by the stakeholders. We had questions on methodology, data sources and some of the assumptions that backed up some of their conclusions.

We also noted again that a lot of the issues brought up in these stakeholder letters are also charges from the board that we are going to address a little bit later on in this presentation.

The consensus was reached that the TC recommends either the formulation of a multi-species technical committee or a series of joint meetings with other technical committees of important menhaden predators to look at menhaden's role as forage as well as the impact of reduced forage on the predator populations.

Our second task was to examine local depletion in the Chesapeake Bay to look at whether or not the removals of menhaden from the Chesapeake Bay are of biological concern, whether or not the science could adequately address this particular issue, and what future research needs were needed.

We have realized that local depletion is important for all species but particularly for forage species such as menhaden. We did note that there has been a reduction in the number of juveniles, 0 through 2, in the Chesapeake Bay as measured by our fishery-independent indices as a result of lower recruitment that we've been seeing coastwide.

The reasons for this low recruitment could be diminished transport from the spawning area offshore into Chesapeake Bay, the migration of the primary recruitment center to more northern areas, as well as perhaps consumption by predators of menhaden post-larvae within the bay itself.

To continue on, we have noticed that there has been a reduction in the overall landings of menhaden from the Chesapeake Bay. But while that is true, overall the proportion coming from the Chesapeake Bay relative to the coastal removals is higher.

This resulting lower landings from Chesapeake Bay are more likely the cause of reduced effort within the bay itself. We found that removal of ages 0 and 1 menhaden from the bay are probably not going to be problematic.

Age zeroes and ones are actually very, very high in population size, and the removals by the reduction fishery or the bait fishery of zeroes and ones is very small, especially when compared to natural mortality.

We did discuss what a prime forage size menhaden is and specifically whether or not age 2 menhaden are important as forage for different predator species. The MSVPA and the forward-projection model, which I'll get to a little bit later, suggests that most of the impact of natural predation mortality happens on age zeroes and ones.

We recognize that twos are eaten, especially by extremely large striped bass, but that they may not be important to the overall forage base when compared to zeroes and ones. We're going to investigate this in much greater detail as we've been discussing this internally with ourselves as to the role of age 2 in the forage base.

Again, we're going to take a look here at the

reductions and removals from the Chesapeake Bay from 1955 to the present where we have reductions over here and fishing year down here. As you can tell, since about 1997 there has actually been lower landings from the Chesapeake Bay than has occurred previously.

If we take a look at this just from 1985 onward, you can see that there has been in the red line a reduction in the number of metric tonnage coming out of the Chesapeake Bay since 1985. However, the blue line is the percentage of coast-wide landings that come from the Chesapeake Bay, and that has risen.

It is currently at about 60 percent. We did come to some sort of consensus on this issue. The current assessment method is just not capable of looking and addressing at this issue. There is a spatial model being developed, I believe by Jerry Ault. You'll get an update from Geoff White after my presentation. This may be able to help address this issue in the future.

If a biological concern actually exists, it would be because of short-term removals, removals of menhaden from the bay within a given year and on the age classes that either may or may not be important as forage. We have a whole laundry list of research recommendations, and I'll get to that a little bit later.

Our third task was to determine if ecologically relevant reference points for the Chesapeake Bay could be somehow measured with regards to extraction and forage. Reference points normally address a specific goal or objective, and we were kind of unclear as to what the goal of specifying reference points would be.

We recognize that management may always be more conservative in setting targets and thresholds any time they wish to. The one caveat is that thresholds and targets have to be statistically significant from each other. We came to some consensus on this as well.

The Menhaden Technical Committee is not able to develop biologically defensible reference points for the Chesapeake Bay. The forward-projection model, the current assessment, the upcoming VPA will also not be able to address this issue in any measurable way.

Both models assume a unit coast-wide stock. The ecopath model being developed for Chesapeake Bay by NOAA, as well as the spatial model also being

developed, may be able to help us address these issues later on, but those models are currently not ready for prime time.

Some of the needed information that we have is we need to take a look at menhaden abundance within the Chesapeake Bay, short- and long-term migration and exchange rates both into and out of the bay, Chesapeake Bay's specific predation by the important predators within the Chesapeake Bay, and some larval studies to determine recruitment success of larvae into the Chesapeake Bay.

Our fourth task was to review Amendment 1 and determine if measures in Amendment 1 achieved the ecological objectives laid out. The Menhaden Technical Committee cannot really evaluate the objective when it relates to menhaden as filtering organisms. We simply lack the proper expertise.

Whether or not menhaden are a potential source or sink of nitrogen for the Chesapeake Bay, whether they impact water quality is certainly not measurable by us right now. That's a separate, completely different sub-discipline of a science.

All the reference points for menhaden, as well as for other species managed by the commission, are done using a single-species assessment. This takes a look at reference points, both target and — I'm sorry, both fishing mortality and biomass targets and reference points.

No other management measures within the menhaden plan exist. However, if overfishing is occurring or if a depleted status is found, there are measures within the amendment that would allow this body to manage menhaden in general.

We realize that the objectives laid out in the amendment are very important in acknowledging menhaden's role as both filter feeder and as forage within the Chesapeake Bay and within other systems.

However, the TC felt that this is the sort of thing that happens when you include goals and objectives in an amendment that are currently not scientifically measurable, so we came up with some more consensus.

The only management measures that are included within the amendment are mortality and SSB reference points. They're developed in a single-species framework just like every other species in the commission.

They cannot and will not address menhaden's

ecological role until we have science that is better able to measure these roles. The MSVPA model may help when it becomes available for development; however, it is not currently on line yet. I'll let Geoff update you on its progress.

We did suggest, however, holding a workshop for the TC on the role of menhaden as forage, using experts from other disciplines to enlighten us on how menhaden can affect water quality and the potential to be either source or sink of nitrogen.

Our fifth task was to quality the change in reference points from SSB to fecundity as appears in the stock assessment report. Fecundity is simply a better estimate of what you guys are trying to manage for, reproductive output.

SSB reference points cannot and will not address the issue that older females always produce more eggs than younger females. Fecundity reference points, instead of spawning stock biomass reference points, do address this issue.

However, we have noted that moving to a fecundity-based reference point does not improve our stock recruitment relationship, and that's probably due to the fact that environmental variables tend to swamp the stock recruitment relationship pretty heavily. I'll show you in a second.

On the top we have recruits to Age 1, using the SSB reference point. At the bottom we have Age 0 recruits, using the fecundity-based estimate. As you can tell, as I have suggested before, it is a shotgun blast.

There is no real improvement in the stock recruitment relationship; however, it just simply makes better biological sense, and in the end was approved by the TC as well as the external review panel.

Our consensus, therefore, is that we recommend changing to fecundity and mortality reference points as outlined within the SEDAR report. We also have some other issues of our own that we wanted to address during this technical meeting, the first of which is the timing of the assessments for Atlantic menhaden.

The new model that you guys have gotten copies of is a very difficult model to run. The current amendment suggests that we need to do an update of the assessment every single year. This new model is extremely time consuming.

We're looking at two to three months of work in

order to update the assessment compared to the old Murphy VPA model, which was pretty much two to three weeks. However, also removal indices as well as effort have recently been stable within the menhaden fishery for the last five or six years.

You have to realize, also, that Menhaden Technical Committee members are on other different species. There is only a certain number of faces that you see around the table at any ASMFC technical meeting. Updating an assessment on a yearly basis will severely impact our ability to update assessments for other species.

We also have recognized, as I'm sure you have, that state and federal agencies have cut funding, particularly to the science ends of things, and the result is that we are finding our workload increasing as people are lost to state and federal agencies through attrition.

It will be almost impossible for us to explore new methods, the MSVPA approach, ecopath, ecosym, as well as the spatial model if we are spending 25 percent of our time updating the menhaden assessment on a yearly basis. It is just a matter of time.

At Nancy's and Vince's suggestion, I went through and pulled out what would happen and what kind of data you would get out if we did an assessment only once every three years. Basically, we have the line here.

The black line represents if we had done the assessment once every three years instead of once each year. The red line is what would happen if we did the assessment every single year like we've done.

Now you have to realize that each time we update the assessment, we're going to get all the years, so all the information will be available. However, going to an assessment once every three years doesn't really impact the overall information that you get out of the stock assessment.

Our consensus on this issue was to move to a turn-of-the-crank assessment once every three years. On each non-assessment year, the TC will still meet, take a look at the fishery-dependent and independent data, look at catch-per-unit effort, review the reports and determine if there has been a significant change from previous years.

If we note a significant change, then we will commence a stock assessment to look at changes

within the fishery. The first scheduled update of the assessment, therefore, if you go with this once every three-year time line, is 2006.

One of the issues we got into was further management measures. Many of the stakeholders and even some of the board members have expressed concern and have suggested that maybe we need to do an amendment to the Menhaden Management Plan.

Many of these stakeholders are suggesting that we do so because of localized depletion and ecological issues surrounding menhaden. We realize that these are difficult yet important issues that need to be addressed sometime in the future.

However, the current scientific information and the current scientific method is not able to look at ecosystem or other types of reference points or management actions at this time. However, we're developing new methods that may come on line later on that will give us the ability to address and answer some of these issues.

However, the current single species assessment, again, is not able to address these issues or look at these issues in any measurable way. Any management goals or recommendations or alternatives that would be folded into an amendment process by the management are currently not going to be measurable.

Our consensus, we recommend that the board implement an addendum to the Menhaden Fishery Management Plan. This addendum should address changing the timing of the assessment as well as updating the reference points.

Currently, the TC feels that a full amendment for Atlantic menhaden is not warranted at this time. Any of the management measures or options suggested to address ecosystem concerns as well as role of forage and filtering ability are not going to be measurable. We're not going to be able to tell you whether or not a specific option or alternative is going to get you to where you want to be.

The last issue, we came up with a nice laundry list of different studies or surveys, which we could use to help better able answer your questions. They're right here. These include abundance of all ages within the Chesapeake Bay; larval studies.

We need a really good adult index to tune both the current model as well as potentially tune the

upcoming MSVPA. We need to look at migrations in stock structure as well as estuarine productivity for Atlantic menhaden. I believe that's just about it.

CHAIRMAN TRAVELSTEAD: Okay, you've heard the report of the Technical Committee, and there are a number of recommendations which we will take up under Agenda Item 9 when we get to it. However, are there questions of Matt at this time? Tom.

MR. THOMAS FOTE: Matt, I can understand that we can't do the filtration and a few others, but I've been asking the same question for, I guess, 14 years of local depletion. That, I think, is different than those other sections.

We look at all those species, how we deal with it. When species collapse on an area and disappear from other areas, we always say the stock is having trouble or problems. We've seen menhaden disappear from a whole bunch of areas in New England, and I've been asking the same question for 14 years.

Is that completely unresolvable, why we get area depletion, or is it basically based on stock size, or is it -- when we use cod or other species, it's the overflow that goes into the areas that normally are not there? I mean, that has always been my concern, and I still haven't gotten an answer in 15 years.

MR. CIERI: It's something that stock assessment science has been wrestling with for a long time. Your finest measure, whenever you do stock assessments, is always your unit stock, and that is true no matter what size that stock is or whether it's made up of stocklets, for example, like with cod or with herring.

The difficulty comes in that if you have a unit stock, you can't really answer questions on what is happening on smaller time and spatial scales. It's just not possible. We hope that maybe the spatial model being developed or maybe ecopath/ecosym, if we get some good migration rates in and out of the bay as well as other areas, might be able to address this issue. But the current model is just -- it's not going to happen.

CHAIRMAN TRAVELSTEAD: Pete Jensen.

MR. W. PETE JENSEN: A couple of things. On your scale there where you were showing the one-year, three-year status of stock, is that the spawning stock biomass?

MR. CIERI: No, that was fishing mortality.

MR. JENSEN: Just the mortality, okay. Do you have anything that would give us the relative strength of the spawning stock biomass now?

MR. CIERI: I believe the spawning stock biomass was presented in the SEDAR report, and I'll get to the current status of the spawning stock biomass in my next presentation. However, I didn't use the same sort of plot, for example, for spawning stock biomass.

MR. JENSEN: Okay, what I'm getting at is -- and I'm not trying to diminish the concern that people have for possible cause and effect relationships to some possible depletion, but from what I'm reading and hearing from the technical people, I think one of the things that ought to be concerning us is that this is the second time I think in 50 years where we've had high spawning stock biomass but low recruitment, and we might be looking at some very serious problem with survival of juveniles and survival of larval survival. That is a second concern that I have in addition to the possible cause and effect relationships that may be happening here.

CHAIRMAN TRAVELSTEAD: Bill Goldsborough.

MR. BILL GOLDSBOROUGH: Thank you, Mr. Chairman. Matt, I had a couple questions. Maybe I could try and summarize what I understand a couple of your major conclusions are and make sure I got it right. Under the current single species approach, the reference points that have been developed cannot address the ecological role; right? That was a conclusion.

MR. CIERI: Yes.

MR. GOLDSBOROUGH: With respect to developing ecologically relevant reference points for the Chesapeake Bay, I take it that the committee felt that was a worthwhile thing to explore, but that it couldn't be done now with available data or without additional expertise and so forth; is that correct?

MR. CIERI: Yes.

MR. GOLDSBOROUGH: Then reading in the report under Number 3, with respect to setting those reference points, the committee concluded that must be prefaced by an expression of measurable

goals and objectives that these reference points are designed to achieve; right?

MR. CIERI: Right.

MR. GOLDSBOROUGH: So, then, does that lead to the conclusion that the first thing that has to be done, to go down this road, is to develop measurable goals and objectives?

MR. CIERI: Yes, that's definitely correct. I think maybe the first step is to actually be able to get a model that would answer your questions. I mean, we don't even have the tool to do it with right now.

The next question, before we develop them, would be for you guys to sit down and develop your goals and objectives that these reference points are supposed to achieve. Model first, choices on goals, second.

MR. GOLDSBOROUGH: Thank you. I had another question, Mr. Chairman, if I could. Under Number 2, the conclusion reported that the removal of forage size menhaden is not of concern, and in the written document, the way it is described, is that current levels of removals are much less for these ages zero to one when compared to natural mortality and population size coastwide. Having been at the meeting, was that conclusion based on that analysis that Eric Williams did?

MR. CIERI: Not specifically. We've recognized that the sheer volume, the sheer size of the zeroes and ones within the menhaden population is just phenomenal; whereas, if you look at the actual removal of age zeroes and ones, it's very, very, very minute, again, on a coast-wide basis.

But we would suggest that even the removals within Chesapeake Bay usually end up being twos and threes. Twos may be forage size, maybe not, depending on what you're talking about. But overall, we felt that the removal of zeroes and ones, because the population is so large and because the fisheries take so few of those specific ages classes, are probably not going to be of a concern.

MR. GOLDSBOROUGH: Thanks. The point I was hoping to make there was, if I recall, that analysis that Eric did and some of the subsequent discussion, that this statement about the removal of forage size menhaden not being of concern, that's the removal in the bay. But it was being compared to natural mortality and population size on the coast, and that's only because that's the data that was available.

There is no abundance data for in the bay. But it was recognized that to really have that be a more insightful and useful analysis -- and that was a first-cut. I think you did it at the meeting --

MR. CIERI: Yes.

MR. GOLDSBOROUGH: -- that we would need that information and that, in fact, even with that, it would constitute more of a snapshot picture, and that to make it even more useful, you would probably try and put together snapshots over a period of time to see how some of these dynamics might have changed. Do I have that right?

MR. CIERI: Yes, you do. Basically, we did a "back of the envelope" calculation, as you remember, at that meeting. However, afterwards we went back and we looked at the reduction and the bait fishery landings, and for the most part they don't land zeroes and ones from Chesapeake Bay. They're almost always concentrated on Age 2 and 3. Removals of zeroes and ones, when they occur, tend to be outside the bay.

CHAIRMAN TRAVELSTEAD: Thank you. Dave Borden.

MR. DAVID V.D. BORDEN: Thank you, Mr. Chairman. Brad, can you scroll back to Frame 6 there on the recommendations. I just want to -- yes, actually, that's it right there. On the third bullet, Matt, this issue of significance, how does the Technical Committee define "significant" for that bullet?

MR. CIERI: That's a really good question. We really haven't drawn up a plan; and I guess if we do an addendum, then we will give you some sort of an idea of what we're going to consider to be significant changes. We'll go through that type of an analysis, and that won't be a big deal. We had just suggested this, you know, as a first cut to let you guys know what we were thinking.

MR. BORDEN: Yes, just so everyone is clear, I think that's a very logical series of suggestions, but the key word in all of that is "significant", and the Technical Committee should come forward, define it, and then the board should discuss that, and if it is adequate, then that's fine and you can proceed down that road.

CHAIRMAN TRAVELSTEAD: That

makes sense, I think. Vito.

MR. VITO CALOMO: Thank you, Mr. Chairman. Matt, I want to commend you on a very clean presentation. I appreciate it. I think the board also appreciates it. Mr. Chairman, I heard Matt use the phrase “abundant stock.” Are you saying it’s a healthy stock, menhaden, at this time?

MR. CIERI: It is, but I’ll get to more of that within the stock assessment. You guys already got the update from the stock assessment last time so --

MR. CALOMO: Okay, I appreciate that.

CHAIRMAN TRAVELSTEAD: David Pierce.

MR. CALOMO: I’m not done.

CHAIRMAN TRAVELSTEAD: Oh, I’m sorry, go ahead, Vito.

MR. CALOMO: We base a lot of our assessments on scientific information. Everything is scientific information. Sometimes now that fishermen have come back with information we call “anecdotal information”, is there any scientific information other than anecdotal information that we are seeing zero and one-year classes from Halifax, Nova Scotia, all the way to Woods Hole that we haven’t seen the likeness of in our history of fishing on the East Coast?

MR. CIERI: To answer your question, yes. We do have recruitment indices from the New England area that are put into the stock assessment. We have been noticing that while there has been a decline in the recruitment indices for Chesapeake Bay and for other places in the Mid-Atlantic, the recruitment indices from things north of, say, New York, from Montauk, have gone up sharply.

MR. CALOMO: Being a pelagic fish that do migrate, in reference to our herring in the north, we’re seeing herring going further south and menhaden going further north. We have cycles in fisheries like cycles on this land for animals. My last question, Mr. Chairman, if you would let me, is to ask the Technical Committee, because of a lack of funds, have they ever asked -- in this reference, Omega Protein was mentioned -- have they ever asked the people from Omega Protein if it would be at all possible to use their vessels as scientific platforms, for no charge, that would assist us in our assessments?

MR. CIERI: No, I don’t think we’ve explored -- we haven’t really explored that. One of the charges from the SEDAR, however, was to see if we could figure out with the industry a better adult index. That’s actually right in the SEDAR report. As we get our feet under us after getting this new stock assessment, we’re going to be exploring ways of actually improving on the stock assessment.

MR. CALOMO: Well, again, I was just going to make reference to our herring industry to the north. Our large vessels are commonly used, for no charge, as scientific platforms. Thank you, Mr. Chairman.

CHAIRMAN TRAVELSTEAD: Thank you, Vito. David Pierce.

DR. DAVID PIERCE: Matt, on Page 2 of the Technical Committee report, under Number 2, there’s the second bullet. In that second bullet, the Technical Committee indicates that, indeed, there is a reduction in numbers of juveniles Age 0 through Age 2 in the Chesapeake Bay area, and you speculate, the Technical Committee does that there are a number of reasons for that.

Lower recruitment could be the result of diminished transport from the spawning ground to the Chesapeake Bay, the migration of the primary recruitment center to more northerly areas or increased predation mortality after menhaden enter the bay.

Now, I need to understand the Technical Committee’s conclusion. You’re saying that, indeed, there was a reduction in numbers, and it could be due to any of these other possibilities, but the Technical Committee wasn’t in a position to say which one was more important than another, if any were important at all.

To follow up a little bit, you’re also, I think, saying in the bold-face type that you think that the spatial model, the ASMFC spatial model may help identify which of these particular factors might be impacting recruitment within the bay. Is that true?

MR. CIERI: That is correct. We hope that the spatial model, once it is completed and once it has properly been reviewed, that it might be able to help us address some of these issues. But you are certainly correct, we have certainly got a recruitment problem within Chesapeake Bay.

We are experiencing lower recruitment. We're not quite sure why that lower recruitment is happening, and we speculate some differing things that might be affecting it. We hope to be able to resolve this issue fairly soon, I hope.

CHAIRMAN TRAVELSTEAD: Any other questions from the board? Yes, Lyell.

MR. G. LYELL JETT: Mr. Chairman, since 1997, although the percentage of the harvest in the Chesapeake Bay versus the total is higher, isn't it true that the volume in pounds over the same period is lower?

CHAIRMAN TRAVELSTEAD: Matt.

MR. CIERI: Yes, the actual reduction and bait fishery removals from Chesapeake Bay as a coast-wide percentage has gone up, as a percentage. That's the blue line. It's hovered around about 50 percent and recently has gone up as high as almost 73, and it currently is about 60.

However, overall removals in metric tonnage has gone down from the Chesapeake Bay, and that's because overall, the coast-wide removals on menhaden have also gone down. The percentage goes up but the actual removals, when you figure out metric tons, goes down.

CHAIRMAN TRAVELSTEAD: Any other questions? Bill Goldsborough.

MR. GOLDSBOROUGH: Matt, you indicate that the Technical Committee will investigate the role of Age 2 as forage. Any thoughts on how you're going to go about that or what the plan is for that?

MR. CIERI: Part of that is actually -- once we get the MSVPA model up and running, we may be able to address that issue on a coast-wide basis provided it gets through peer review, and we like this formulation.

This might be able to give us some insight as to the role of Age 2 coastwide and then maybe give us a hint on how to do things on the role of Age 2 within Chesapeake Bay, so that might be able to give us, at least shed a little bit of light. But the MSVPA model, again, is going to be a coast-wide model.

CHAIRMAN TRAVELSTEAD: Gil.

MR. POPE: Thank you, MR. Chairman.

I'm trying to figure out the forage size. Is that going to vary by species? I know in Rhode Island, when the bonita show up, their forage on the ones that we have are very, very small. They're very picky about the size that they eat on the menhaden. so I would think that would depend also on whatever species you want to choose. Thank you.

MR. CIERI: Yes, definitely. When you actually go through the calculations, you realize that for the most part only Age 8 and up bass are able to consume menhaden of Age 2. You've got a couple of things going on.

You've got striped bass getting smaller at age. You've got menhaden getting larger at age so you've got the physical ability to actually consume the prey. Then there is the issue of is it important?

In order for it to be important, these predators and the prey have to overlap in both time and space. So if you've got a lot of your Age 2 in Chesapeake Bay, you have to have larger striped bass in Chesapeake Bay for a long period of time in order for them to impact the menhaden population.

CHAIRMAN TRAVELSTEAD: Vito.

MR. CALOMO: Thank you again, Mr. Chairman. Matt, again, I have a question here. Is there any reasoning -- and these questions come because I have 45 years experience in this business.

Is there any reasoning why menhaden, for one of the few times or the only time that I know of in 45 years, have been caught way off shore, more than 12 miles off shore, more than 15 miles off shore? I've never, in my 45 years experience, experienced that menhaden were that far off shore.

Could this be caused by pollutions entering the bay such as chlorines from mom's dishwasher and clothing, washing machines and so on and so forth? I mean, these adults are so far offshore that it's very dangerous for these vessels that are built for inshore to be offshore. Thank you.

MR. CIERI: In general, actually, yes, there have been catches of menhaden in the historical past that come from the sand ridges and humps as far as 12 or 15 miles off of New Jersey. That has happened fairly -- it is a rare event, but it's regular through time.

REVIEW OF 2003 STOCK ASSESSMENT REPORT

CHAIRMAN TRAVELSTEAD: Okay, let's move to Agenda Item 6 where Matt will update us on the 2003 stock assessment report, and we'll take questions as well on that when he finishes.

MR. CIERI: Starting off, you guys got an update of the stock assessment and the peer review process from Najih during the annual meeting. I'm going to quickly -- here are the terms of references. They're available within the report.

I'm going to focus this talk pretty much on the actual model, its implementation and the rest of it. Okay, we have moved to a different type of modeling approach than you guys are normally used to seeing.

We're using right now a forward age-structured production model, which are similar to the suites of models that are coming in from the West Coast. You guys are starting to become a little bit more familiar.

This type of modeling has been used for Atlantic herring. It is also one of the models that is on the table for lobsters. You will be seeing it much more regularly in the next few years. The model assumes one unit coast-wide stock.

The model was actually built a couple of years ago. It has been run in side-by-side comparisons with the Murphy VPA. That information, using the same input data, is available in the 2002 stock assessment report.

This model is different than the Murphy VPA and a lot of other models, because it uses an age-specific natural mortality, higher mortality for age zeroes and ones versus twos and threes and fours, which makes simply perfect sense. Younger fish die more readily than older fish.

It also uses a fixed size, percent maturity and fecundity at age. We pretty much used two fisheries, the reduction and bait fisheries, because they have different selectivities and are prosecuted in different areas.

Recreational cast netting was pretty much ignored for the most part because we don't think it's a big deal with the menhaden removals. Same thing with discards; discards were also ignored. We also, unlike the Murphy VPA, have two fishery-independent indices, a juvenile abundance index and an adult index.

Okay, just to do a side-by-side comparison between

the old Murphy VPA that Doug Vaughan has been running for years on menhaden and the new forward-projection model, the Murphy VPA does not have a tune index. The forward-projection model does. It has two.

Both models are age structured, which allows you guys to take a good hard look at the age structure of the population, again, two separate fisheries, the reduction and bait. There is a difference when it comes to how the models assess natural mortality. One is fixed at age at 0.45. The other one is variable at age. The projections run in different directions: forward for the forward-projection model, obviously; and backwards when it comes to VPAs.

This is kind of important, because the retrospective bias that you guys normally see whenever anybody does a VPA, that problem goes away. The model is much more likely to blow up on you than it is to actually give you a retrospective pattern.

The time to run, as I alluded before, is quite a bit different. The Murphy VPA was about two weeks to run, two to three weeks. We're now looking at two to three months to run. Okay, well, there is just no way I'm going to be able to get up here in front of you guys as a technical person and not give you at least one equation.

The model itself is done through AD Model Builder, although you can do it through Excel, 135 parameters with a standard deviation if you're interested from the Delta Method, using both multi-normal and log-normal components. That's enough of that.

If you're really interested, we've even got some of the code in the stock assessment report. Okay, as I said, we had juvenile abundance indices. I'm not going to go through them on a state-by-state.

These indices were all combined together and then re-weighted based on drainage area as well as productivity of the estuaries from which they came. We also have one adult index which is a poundnet landings by license holder. This is a relatively insensitive measure, as you know, of CPUE.

If we look at the juvenile abundance index, we can see that menhaden have a lot of contrast, higher in the period between the early '70s and early '80s with lower recruitment afterwards. Remember, this is mostly the result of lower recruitment to Chesapeake Bay.

Again, the poundnet index showing very, very similar

trends; however, also, quite noisy. The number of adults available to the poundnet index per license has actually gone down in the last few years, but, again, this is centered in the Chesapeake Bay.

One of the other primary inputs is fecundity. Rather than going from an SSB, we go to fecundity. This recognizes that as you get bigger and larger females, you get much more in the way of egg output.

Okay, basically, again, two fisheries, catch-at-age matrix for both, one the reduction fishery and one the bait fishery. If you look here at recent landings, you can see in the red hat, that's the reduction landings. The smaller black shaded area is landings by the bait sector back to 1985. As you can tell, we've seen lower landings from about the early '90s up until today.

Okay, a little bit about this natural mortality. This model and this assessment is kind of unique, because it does use an age variable M at specific ages. This is important, because for a forage species, you would expect to have much higher natural mortality on the youngest of ages.

In this case, the model itself scaled the relationship between natural mortality among the age groups. So, for example, we used a primary input of a relationship from the MSVPA model. This MSVPA model gave us the shape of the curve or the vector.

We then used the actual internal processing of the forward-projection model to scale that relationship. That means that we get a scaler out of it. So what we end up with is an M at age that is fixed across time, so it doesn't vary by age by time so natural mortality is assumed across all years to be the same for each age class.

Okay, this is what it looks like. Anyway, the red line is what the forward-projection model picks as a natural mortality relationship. As you can notice, natural mortality on Age 3 is 4.3, not 0.43, 4.3.

By Age 1 it goes down considerable to about 1 and then levels off in and around Age 2. The multi-species model does something similar, but remember it's only accounting for natural mortality as a result of striped bass, bluefish, weakfish, so it tends to come in at a little bit lower. That relationship was just simply scaled through the forward-projection model.

If we take a good, hard look at natural mortality and fishing mortality rates coastwide, you can see the

natural mortality rate is absolutely huge compared to fishing mortality rates for zeroes and somewhat for ones.

But as you move to Ages 2, 3 and 4 and onward, fishing mortality is the bulk of the mortality occurring on menhaden. Again, as the report highlighted, we'd like to go through a new series of benchmarks and reference points, changing our targets and our thresholds.

Okay, for everything everyone has been waiting for, here is fishing mortality age two-plus over the time frame from 1955 to the current time. The solid and dash lines are an update of our reference points. We're basically with a terminal year somewhere around the target, maybe a little bit above the target.

Overall fishing mortality has been around the target for about the past decade or so, but fluctuating. If we look at the fecundity-based estimate, you can see that we are far above our target when it comes to number of maturing ova in our fecundity relationship.

If we look at the old SSB reference points, so you guys have something to compare with, again, spawning stock biomass has fluctuated pretty steadily throughout the last, say, 20 years; however, we were well above the target for spawning stock biomass, according to the old amendment criteria.

If we look at recruitment coastwide, we can see that we've had a negative trend in recruitment coastwide over the last perhaps two decades. There is some indication that some stronger year classes are entering, and so recruitment may be on an upswing.

When we update the model again, we'll have to make sure that that's actually the case. Courtesy of Doug Vaughan, his overfishing plot, where we have the resources either being depleted or overfished versus its F reference points. Note the happy and sad faces as everyone has normally seen it from Doug.

If we take a look at where we are right now and where we've been in the recent past, we've been pretty much hanging out in about the same spots. Again, we are slightly above our target fishing mortality, but well above our fecundity mortality for this stock.

Okay, just to simply sum and wrap up. This new model, unlike the Murphy VPA, uses tune indices. It has an age variable M but it still gives you guys age-structured information for making management decisions.

We have suggested a change in the reference points for both fishing mortality, particularly for target F, as well as from SSB to fecundity. We have a laundry list of research recommendations, which appear on the document as well as the TC report.

Overall, our conclusion is that the Atlantic Coast stock for menhaden is not overfished, and overfishing is not occurring on a coast-wide basis.

We then passed off this assessment to the peer review which, as you remember from Najih's presentation during the annual meeting, was accepted and they provided some feedback to us as to how to improve the model. That's it.

CHAIRMAN TRAVELSTEAD: Questions from the board members. Dave Pierce.

DR. PIERCE: First a comment and I'd like your response, Matt, and then I've got a very specific question. You indicated that all of the different standardized surveys, for determining abundance or estimating abundance are weighted, and they're weighted in a very significant way.

I note that in the assessment report itself, it shows that the New England, Connecticut through Maine, there is a 1.8 percent weighting. The Middle Atlantic, that's Maryland through New York, is a 12.5 percent weighting; Chesapeake Bay, including coastal Virginia, 68.8; South Atlantic, Florida to North Carolina, about 16.9.

Now, in your earlier report, you noted in Chesapeake Bay a reduction in juveniles Age 0 through 2, and that could be due perhaps to migration of the primary recruitment center to more northerly areas, so if indeed, that happens to be the case, if that is what is going on with Chesapeake Bay, then doesn't this weighting have to be changed in order to account for that, because this weighting would, therefore, lead us to underestimate the abundance of menhaden coastwide? Is that a correct interpretation?

MR. CIERI: Yes, it would tend to make us underestimate recruitment. Remember, a lot of the information that you get out on spawning stock biomass comes from the fishery directly. That is pretty much the case.

We did the weighting based on studies that were conducted in the past. We also did the weighting based on actual area. The Chesapeake Bay is a large area that usually ends up producing a lot of

menhaden and so we gave that higher weight.

Whether or not that weighting scheme is valid and recently within the last, say, five or six years is a matter of debate, that's one of the research recommendations that we have for updating the stock assessment. We need to get that production number better.

DR. PIERCE: All right, thank you. That's a very important issue, and I'm glad to see that the Technical Committee is addressing it, since it has tremendous implications, I suspect, for being able to get a better handle on what is happening with this resource.

My last question is, the Technical Committee is recommending that we change the fishing mortality target, that we go from the 1.04 to 0.75. It's unclear to me why that recommendation is being made.

If we do go with a 0.75, don't we suddenly find ourselves faced with an almost overfishing situation? I noted from one of the figures and the report we'll be looking at a little later that we're right at 0.75 as an estimate of fishing mortality, so if we change the target, we'll be flirting with danger as it relates to our being overfished or our overfishing or not overfishing. So, what is the rationale for the reduction in the F target; and if we reduce it, don't we get ourselves to an overfishing situation?

MR. CIERI: Okay, we recommended using this particular F target. Remember, just because you exceed the target doesn't mean you're overfishing. You've got to go over your threshold. The threshold is actually something that we've set, and it's using the same calculations that we used the last time.

The difficulty, however, is that when we went through the yield per recruit analysis, we found that Fmax, which we had been using as F target, was just through the roof. It was actually higher than our threshold. That was for a number of reasons.

Fmax just kept going up and up and up and up, and so what we were going to be stuck with is the fact that your F target was actually higher than your F threshold, which doesn't make a whole lot of sense, so we suggested using the 75th percentile of the historic past as your target.

CHAIRMAN TRAVELSTEAD: Okay, Bruce Freeman.

MR. BRUCE FREEMAN: Matt, the

question I had concerns the model that you're using, the forward-projection VPA. As you are well aware of in herring, that model had been used by the United States for a number of years and accepted, and recently that has been called into question specifically because of the ageing issue, as I understand it for older fish. Are the problems that occur -- are there problems in the model similar to what we've seen in herring with menhaden?

MR. CIERI: Well, first off, for Atlantic herring, it is a forward-projection model, but that model is not age structured, so there is no -- and that was the reason why we went for Atlantic herring with something that wasn't age structured, because we knew we had a problem with the aging.

In menhaden we have a much better idea on aging. We have a much better catch-at-age matrix. Beaufort puts a lot of time into getting good quality samples, and the aging is fairly easy. Plus, menhaden grow at a phenomenal rate so you get good contrast.

If you were going to have a problem with your catch-at-age matrix in a model like this, as I alluded to before, the model will blow up on you. It won't run. It will do and give you answers that are just so wildly outrageous that no one can believe them.

However, if you have that kind of aging problem, as you know from a VPA, what you end up getting that retrospective bias. So in this case, because we have good data, and because the model won't run with a catch-at-age matrix that's kind of funky, then for the most part we feel pretty confident about our terminal estimates.

MR. FREEMAN: If I may just add one other question. Relative to the bait -- you don't run the bait harvest separately from the reduction do you, or do you?

MR. CIERI: We put them in a separate catch at age -- well, we first put them in separate catch-at-age matrixes and then combine them in the model.

MR. FREEMAN: Are you getting sufficient biological representation from the bait?

MR. CIERI: Yes, Pete Himchak has been really, really good when it comes to biological sampling. Even Massachusetts has sent samples. I've sent samples in from Maine. We're getting a much better handle on the sampling regime for the bait fishery.

CHAIRMAN TRAVELSTEAD: Dave Borden.

MR. BORDEN: Thank you, Mr. Chairman. Matt, going back to the control rule, if we could go back to that for a second, the one with the nicer looking smiley faces on it. Since we're right on the border here, I guess my question is, in the aging of the stock and the low recruitment pattern that we're pretty much seeing in the fishery, if that doesn't change somehow here over the near term, at what point would you think that we would be in a position where we would have to change something in our management context?

How long can we go along with this same pattern of low recruitment and an aging adult population, which is kind of sustaining the fecundity estimate, before it's going to be problematic? I realize I'm asking you to look ahead here.

MR. CIERI: So you're asking for a projection.

MR. BORDEN: We won't hold you to your estimate. I'm just curious as to what you think about that.

MR. CIERI: Okay, it is actually a whole lot more of a difficult question than you might possibly imagine. We don't tend to like to run projections for species that are not overfished, to project far into the future, because it gives you guys a false sense of either security or doom and gloom, particularly because we have a species that is -- recruitment is so environmentally driven. You saw that stock recruitment relationship.

If you do a projection for more than, say, a year or two, all you're doing is getting that stock recruitment relationship back. That's all you're doing, because after a couple of years, all your biomass is projected, so we don't like to do that.

What we've seen recently, however, in the last time frame, while recruitment has been lower, and it's been lower for about the last 20 years, the spawning stock biomass has gone up. Now you wonder on how is that possible.

That's because we have increased survivability. Fishing mortality has been extremely low, so while we're not getting good recruitment, we're certainly getting good survivability once they're recruited. Does that help?

CHAIRMAN TRAVELSTEAD: Gil.

MR. POPE: Thank you very much. When or why did you decide to change your natural mortality from a constant to a variable? I think that's very good, very fascinating.

MR. CIERI: We thought it was a good idea, and I think, actually, it was one of the recommendations the last time the menhaden model went through peer review. We now have the ability to do so.

MR. POPE: What were the effects on your safe level of harvests and so on? Was there any effect to that?

MR. CIERI: No, actually, it doesn't really affect the level of harvest. What you have to remember is by the time the fishery starts taking fish, it's after Age 2, and that's where the bulk of the natural mortality drops off.

MR. POPE: Is this going to be applicable to other fisheries as well pretty soon here, because, we use a straight-line natural mortality in striped bass, as you know.

MR. CIERI: I don't quite know. Certainly, for some species, the normal assumption of a straight-line natural mortality rate is certainly valid, especially for species that live long.

For this particular species, we had the ability to basically get a relationship for the MSVPA, which we then put into the forward-projection model and gave it that extra "umph" it needed to actually estimate natural mortality.

MR. POPE: The other thing that kind of struck me about the idea of forage fisheries is you're talking about zero to two, zero to one, when is any fish really not a forage fish when it's Age 0 to 2?

I was thinking to myself any of these little fisheries, no matter what the type of fish they are, when they are this big, they're highly vulnerable, and they're forage for everything. Thank you.

MR. CIERI: That's true; and if you turn on the Discovery Channel, it's usually the youngest of the gazelles that are getting it from the lions. That is certainly true, the same premises happen in the ocean as well. It's the youngest of ages that are more likely to either be consumed by predators or to die of other

natural causes, starvation, for example, or being evicted out of a system.

CHAIRMAN TRAVELSTEAD: Bill Adler.

MR. WILLIAM A. ADLER: Thank you, Mr. Chairman. The below temperature was mentioned like on Page 7 of the report. What effect does that have on this recruitment? Could that have been a detriment to the recruitment situation, the temperature situation?

MR. CIERI: Well, temperature can certainly affect not only larval survival but actually egg hatching, as well as when the larvae make that transition, when they're yolk sacs are absorbed during what we call the critical phase, before they start moving on and eating zooplankton, so, yes, the temperature can certainly have an effect. There are certainly lots of environmental variables that have an effect of increasing mortality, potentially.

MR. ADLER: Was there a temperature or has there been a temperature problem identified that perhaps is part of the reason for the recruitment problem?

MR. CIERI: I think at this point it's really, really too early to tell. I mean, the entire SEDAR -- not SEDAR, SABAR project was developed to look at things such as transport and survivability of menhaden larvae into Chesapeake Bay and into other areas. There are no definitive answers. You're not quite sure if it's temperature or if it is salinity or if it is a number of different issues.

CHAIRMAN TRAVELSTEAD: A.C. Carpenter.

MR. A.C. CARPENTER: I'm glad that we've still got this one up here. Is this using the new model or the old model to give us this particular control rule plot?

MR. CIERI: New one. These are all the new reference points and the fecundity estimates.

MR. CARPENTER: We don't want to lose his smiley faces.

CHAIRMAN TRAVELSTEAD: Bill Goldsborough.

MR. GOLDSBOROUGH: Thank you, Mr. Chairman. On the last slide, the conclusion slide, at the risk of emphasizing something that everyone

understands at this stage of the game, I do want to point out, because it is such a critical distinction that we want to make sure everyone understands, that the conclusion in bold there, for anybody reading that, they have to be sure to put sufficient weight on that first word, "coastwide".

The stock assessment is based on a unit stock model, which is a coast-wide analysis, and the conclusion that it is not overfished, and that overfishing is not occurring is on that basis. That this was reinforced and emphasized by the peer review of the stock assessment, which went on to point out that in fact, the stock assessment would not be a sufficient tool for detecting that issue of localized depletion.

CHAIRMAN TRAVELSTEAD: Do you want to comment on that?

MR. CIERI: Absolutely, positively correct.

CHAIRMAN TRAVELSTEAD: Other questions? Yes, Gerry.

MR. GERALD CARVALHO: Thank you, Mr. Chairman. My question is for Matt. It's my understanding, and please correct me if I'm wrong, that menhaden as a species, the adult population will not go into a breeding cycle until the end of its lifespan.

It was my understanding that as long as there is a healthy adult population, that they won't get into a breeding mode until they feel it is critical, they're on their way out. Does that play a part in the lack of recruitment and healthy adult stock?

MR. CIERI: Honestly, I've never heard that before. Spawning usually takes place just after Age 2, two-pluses are; late age stage twos, early stage threes. But we do find that we do have some members of the population that are age sixes. Our plus group is six.

I've never heard that menhaden only spawn once. I was always under the assumption that they migrate offshore and then come in and spawn again.

MR. CARVALHO: What I understood was that when the population is healthy, that they don't get into a breeding mode until it's the end of their lifecycle and it becomes critical to replace themselves.

CHAIRMAN TRAVELSTEAD: Just as a follow up to Gerry's question, there have been -- I

think the point has been made in the past that there have been periods of time when the spawning stock has been high, but recruitment has been poor, which suggests something along the lines that Gerry --

MR. CIERI: Yes, and that's certainly -- you get more production out of a fish stock at its median level than you do when it's really, really high per individual. On a population basis, it's certainly true.

The problem when it comes to looking at a stock recruitment relationship with something like menhaden that's short-lived, spawns offshore and depends on larval invection and larval survival to get them to the estuaries to grow up is you've got so many environmental variables in addition to stock variables that it's almost impossible to tease them apart.

CHAIRMAN TRAVELSTEAD: David, you had a question.

MR. BORDEN: Thank you, Mr. Chairman. Matt, it has been a while since I reviewed the life history characteristics of menhaden, but can you refresh my memory? In terms of spawning activity, I know they spawn, they're traditionally offshore spawners, and then they move into the estuaries.

Is there a distance that is associated with that in terms of how close are the actual spawning locations to the estuaries where their recruitment takes place?

MR. CIERI: They can actually be fairly far away. Spawning occurs pretty much through the Mid-Atlantic Bight all the way down to North Carolina. The peak of the spawning actually is off Cape Hatteras.

So we've basically got an offshore spawning area, in which many of the adults from that area all the way up to Southern New Jersey migrate to that spawning area. They all spawn together, and the larvae go every which way and go back to the coast.

It's in some ways fairly similar to eels, where you've got an offshore spawning area and adults coming from a wider coastal range into one location for spawning.

MR. BORDEN: All right, and then the follow-up question is in terms of menhaden being a unit stock, to what extent is there scientific evidence -- that's the conclusion of the Technical Committee, and that has been the conclusion of the National Marine Fisheries Service for a long period of time --

but to what extent is there conflicting scientific evidence that indicates that there may be individual stock components? Is there evidence that --

MR. CIERI: Not that I am aware of. See, one of the things you have to realize is -- one of the telltale signs that you don't have small stocklets like you do with herring is the fact that you actually get menhaden -- they actually segregate at age, so basically you get older ones further north.

Now if there were smaller stock units than a coast-wide stock, you wouldn't expect that to happen. You would expect each regional location to have a small, little stocklet. However, we've been wondering for some time whether or not there might be another spawning component further to the north.

Whether that is a distinct population or not, we've certainly seen a lot of recruitment, for example, as far Downeast in Maine as New Brunswick. We're pretty certain that those larvae weren't exactly spawned off North Carolina and got up there in two months. I think we're trying to figure out what the unit stock is, and that's one of our research recommendations.

CHAIRMAN TRAVELSTEAD: Before we move on to the next agenda item, is there -- someone mentioned the need for a checkout break. Do we need to do that? I see a few heads nodding. Can we accomplish that in 15 minutes and get back here? All right, so let's recess for 15 minutes. Report back at 12:15. We'll take up the rest of the agenda at that point.

(Whereupon, a recess was taken.)

CHAIRMAN TRAVELSTEAD: If you will take your seats, please, we will resume the meeting. We're back in session. We're going to move to Items 7 and 8. Nancy has more or less a combined report on those two items, both of which will require action by the board.

2003 FMP REVIEW

MS. NANCY E. WALLACE: The board was presented with a lot of this material at the annual meeting, but due to a lack of time, we moved it until this meeting. We're revisiting now, as a matter of process, the FMP review and the compliance reports.

The reason it is in this part of the agenda is because the PRT has some recommendations depending on

the management options the Technical Committee has recommended. I would just move through this briefly, since you have seen most of this before.

The 2003 Atlantic Menhaden FMP review, basically, the PRT updated the status of the stock based on the 2003 benchmark assessment which you just saw. It includes a description of the updated data inputs and new model and 2003 assessment. Recommendation of new benchmarks are included, and it includes new tables and figures to depict the current stock condition.

The status of the fishery was updated based on 2002 data. It includes new figures to depict landings and effort trends. We updated the status of assessment advice to include recommendations from the Peer Review Panel. That was the SEDAR panel from October.

The Technical Committee has recommended changing from an SSB target and threshold to a fecundity-based target and threshold. They have also recommended a new F target and threshold. Control plots of these new targets and thresholds were included in the FMP review.

Moving on to the second part of the PRT report is the compliance reports, the 2003 compliance reports. All states submitted their annual compliance reports on time. Table 2 in the FMP review summarizes the information from the annual state compliance reports.

Massachusetts currently does not have an offshore reporting requirement for menhaden; however, this represents a very minor component of the fishery. In December the board did approve requests from Georgia and South Carolina for de minimis status.

The PRT recommends that an addendum should be prepared to address the new reference points recommended by the Technical Committee, and the research and monitoring recommendations are consistent with the Technical Committee's recommendations in the 2003 stock assessment report. That concludes the PRT report.

CHAIRMAN TRAVELSTEAD: David.

MR. BORDEN: Thank you, Mr. Chairman. What is your preference? Do you want to have a discussion of that report, or do you want to take action on it?

CHAIRMAN TRAVELSTEAD: Well, I think taking action is simply a motion to agree to

have the report published and appear on the agency Website. It's not necessarily a debate of the recommendations.

MR. BORDEN: **So moved.**

CHAIRMAN TRAVELSTEAD: Okay, is there a second?

MR. FOTE: Second.

CHAIRMAN TRAVELSTEAD: Seconded by Tom Fote. Everyone clear on the motion? Again, the motion is to approve the report for publishing and putting it on the agency Website. Is there discussion on the motion? Seeing none, all those in favor, say aye; opposed, no; abstentions; null votes. **The motion carries, and the report is approved.** Nancy.

2003 COMPLIANCE REPORTS

MS. WALLACE: We do also **need a motion to approve the compliance reports for 2003.**

MR. JENSEN: **So moved.**

MR. CARPENTER: Second.

CHAIRMAN TRAVELSTEAD: A motion made by Pete Jensen to approve the compliance reports; seconded by A. C. Carpenter. Discussion on the motion. Seeing none, all those in favor, signify by saying aye; opposed, no; any abstentions or null votes. **Seeing none, the motion carries. The compliance report is approved.**

MANAGEMENT IMPLICATIONS FROM THE 2003 STOCK ASSESSMENT REPORT

That takes us to Item 9, discussion of management implications from the 2003 stock assessment. Just as a way of reminder, there were two specific recommendations by the Technical Committee and by the FMP review.

They dealt with changing the reference points from a spawning stock biomass basis to a fecundity basis and adjusting the timing of the assessments from annual to once every three years.

If we could get a motion on either or both of those two issues to get us started, I'd like to proceed with that. Just a word to the public, we are going to take some public comment during this agenda item, but

I'd prefer to wait until we get motions up. Once we dispense with these two issues, if there are other things on the board's mind, then we will hear those, and we'll take public comment as well. David.

MR. BORDEN: Thank you, Mr. Chairman. As I indicated before, **I support both of the technical recommendations and would be happy to facilitate the deliberations here by making a motion to accept both of those recommendations.**

CHAIRMAN TRAVELSTEAD: Okay, we have a motion. Is there a second?

MR. PATRICK AUGUSTINE: Second.

CHAIRMAN TRAVELSTEAD: Seconded by Pat Augustine. Again, the motion is to change the reference points from an SSB basis to a fecundity basis and to adjust the timing of the assessments from annual to every three years. Discussion on the motion. A.C.

MR. CARPENTER: Is this going to have to require an addendum and/or an amendment?

CHAIRMAN TRAVELSTEAD: The staff tells me this will require an addendum. David.

DR. PIERCE: Yes, just a clarification, Mr. Chairman. The clarification, this motion regarding the two recommendations, does that also include changing the F target as well, the F threshold values, as well as going to the fecundity as a way to determine where we stand with stock size?

CHAIRMAN TRAVELSTEAD: I'm not sure of the answer to that. Can staff -- I mean, the motion doesn't speak to those issues.

DR. PIERCE: It doesn't speak to those issues, but I thought that that was the direction in which we were going, that there were specific recommendations from the Technical Committee as it relates to reference points, F values as well as biomass values, in this particular case fecundity estimates.

I would just ask the maker of the motion to clarify his intent with regard to those recommendations that we should change the F target and the F thresholds, taking the F target and dropping it down from 1.2, I think, down to 0.7-something, which is not insignificant. I mean, it's a significant decrease so if you would, David, just clarify what your focus is.

MR. BORDEN: My intent is to adopt both of those, all of those. While I have the mike, Mr. Chairman, can I just offer one comment? On this motion, before any addendum goes out to public hearing, I think it's critical for Matt and the Technical Committee to develop the rationale around the term "significant," what constitutes a significant change.

That has to be imbedded in that document so the public clearly understands. If we're going to go to a three-year assessment cycle with the possibility of deviating from that, they have to know what the conditions are that would trigger that.

CHAIRMAN TRAVELSTEAD: I think that's very good advice, and I would ask the Technical Committee to undertake that assignment. Let me again clarify the motion, because what we are talking about here is preparation of an addendum to accomplish the tasks recommended by the Technical Committee, so the final decision is down the road. Okay, David.

DR. PIERCE: Yes, I would support this particular motion. I think it makes a great deal of sense. The Technical Committee is very strong on these issues as it relates to changes in how we would go about assessments and setting targets.

I'll admit that I'm still not quite sure as to the rationale for doing so. Matt did a fine job providing some insights, but now the task will be for Matt, the rest of the committee and, of course, staff to really put the meat on the bones so we really understand the logic for it.

Again, if nothing else, a reward for Matt and the Technical Committee for all their hard work and the fact that Matt, unlike other -- and the Technical Committee, unlike other technical committees, is very honest with regard to the extent to which you should project into the future.

I like that attitude. It contrasts greatly with other technical committees that have us project 20-30 years into the future with information that really isn't that useful. Thank you.

CHAIRMAN TRAVELSTEAD: Is there anyone who wants to speak against the motion? Bill Goldsborough.

MR. GOLDSBOROUGH: I only had one finger up, because it's not exactly what I want to say, but I wanted some clarification before we voted. If the chair's intent is to deal with this motion before

receiving public comment, I'm wondering how we would handle any issues that came out of the public comment that might need to be addressed in an addendum.

I presume if that were the case, we would want one addendum. So given that, would the chair entertain additional motions in that event to add items to this proposed addendum?

CHAIRMAN TRAVELSTEAD: Certainly. I thought I had indicated that. Adoption of this motion does not preclude the development of other motions to develop other addenda or amendments to the plan.

MR. GOLDSBOROUGH: Sorry, I misunderstood. Thank you.

CHAIRMAN TRAVELSTEAD: I will call on the public as well relative to this motion before we vote. A.C.

MR. CARPENTER: Based on what I heard this morning, I think we need to -- **I'll make a motion to insert, after the biological reference points the F target and Fmax, the target and thresholds as specified by the Technical Committee in addition to the adjusting -- and it would go between "points" and "and."**

CHAIRMAN TRAVELSTEAD: So you're adding, between the words "points" and "and", the words "F target and threshold".

MR. CARPENTER: Correct.

CHAIRMAN TRAVELSTEAD: Is there a second to that motion?

MR. AUGUSTINE: Second is all I can say.

CHAIRMAN TRAVELSTEAD: David, you'll make this easier, right?

MR. BORDEN: Yes, if Mr. Augustine will accept it, I'll accept it as a friendly perfection of the motion so that we can speed things up.

MR. AUGUSTINE: Yes, Mr. Chairman.

CHAIRMAN TRAVELSTEAD: Okay, does everyone understand the new motion, then? Is there anyone who wants to speak against the motion? David.

DR. PIERCE: With regard to your first question, understanding the motion, yes, would you please read the motion in its entirety, as amended.

CHAIRMAN TRAVELSTEAD: **The new motion is move to initiate an addendum to update the biological reference points, F target and threshold, and adjust the frequency of the stock assessments.** Any other comments from the board? Are there comments on the motion from — David.

DR. PIERCE: Yes, I was treating biological reference points as being the biomass or fecundity estimates -- targets and thresholds as well as the F targets so this seems to be a bit redundant. But if the maker of the amendment feels it's important to put it in, then I'll support it.

CHAIRMAN TRAVELSTEAD: Any further comments from the board? Are there comments specific to this motion from our public? Seeing none, are you ready to vote? All those in favor of the motion, say aye; opposed, no; abstentions; null votes. The motion carries.

Are there other issues that need to arise at this point from the board? Bill Goldsborough.

MR. GOLDSBOROUGH: There are, Mr. Chairman. I think we'll hear in public comment of a number of them, and perhaps I'll wait until then to elaborate, but there is at least one other one the board needs to be aware of from the Habitat Committee perspective.

There is an updated habitat section for the Menhaden Plan that needs to be incorporated. It's my understanding that needs to happen via an addenda. Perhaps staff can confirm that, but we may need to deal with that as well.

CHAIRMAN TRAVELSTEAD: Bob, do you want to comment on this?

MR. ROBERT E. BEAL: Just that Bill's comments are right; that needs to be done through an addendum. If the board is going through an addendum, that's something that is already drafted and a relatively simple addition to the addendum.

CHAIRMAN TRAVELSTEAD: Bill, any response?

MR. GOLDSBOROUGH: No, that's right on. Thank you.

CHAIRMAN TRAVELSTEAD: Okay, comments from the public at this point. Ken, come on up to the microphone. Let us know who you are and who you represent.

MR. KEN HINMAN: Thank you, Mr. Chairman. My name is Ken Hinman. I'm president of the National Coalition for Marine Conservation. First of all, I wanted to thank the management board for its consideration of the stakeholder concerns that were raised at the December meeting, and the Technical Committee for spending two days considering those concerns and coming up with some recommendations.

I have a recommendation. It's based on both those concerns and the Technical Committee's report, which I've read actually quite a few times. It boils down to this. In the consideration of the ecological role of menhaden and particularly in Chesapeake Bay, we have management concerns and we have science concerns.

We have management goals, protecting and maintaining the ecological role of menhaden, and then we have a stock assessment that is unable to address that.

We certainly support the recommendations from the Technical Committee on some of the information that we need to pursue in order to help us better understand the ecological role and maybe inform our future decisions, but right now I want to focus on the thing that links the management and the science, and that is these reference points that have been talked about quite a bit.

These are really the management targets that we're going to use that science to achieve. We need to have these reference points to know what our targets are and to know whether we are achieving those targets or goals.

This just does not just flow one way from the science through the reference points to the management, but I think as was made clear in the Technical Committee report -- and this is something that Bill Goldsborough highlighted earlier on this morning -- is that any setting of ecologically relevant reference points must be prefaced by establishing clear and objective management goals that we are trying to achieve by the setting of those reference points.

So, it is not a matter of waiting until models, future models, future data that come in tells us the answers to these questions, but I think the management board

has been asked what is your goal regarding the ecological role, what kind of things can you do to clarify the management objectives so that we can set those goals, and we can actually get about achieving them.

I would recommend that this plan be amended or included in an addendum consideration of management clarifying those management objectives. Just to give some examples of what I'm talking about, it's refining, protecting and maintaining ecological roles to get into some more specifics about whether we're talking about maximizing protection for a portion of the population age classes that are considered prime forage and options for doing that.

I think it's talking about minimizing the risks of localized depletion in Chesapeake Bay, in particular, and what are the management options for doing that. There are things that we can do. We can go out and take public comment on.

There is a lot of expertise out there in ecosystem management, predator-prey management on other species. There is also a lot of people that fish for both menhaden and their predators that have ideas and information to bring into this process.

I think we need to go out and set about doing that. I think it will help the Technical Committee in its job of providing the information, and it will help the ASMFC in achieving its goal of protecting the ecological role of menhaden. Thank you.

CHAIRMAN TRAVELSTEAD: Thank you. Are there other public comment at this point? Ed, come on up.

MR. ED O'BRIEN: I hope I'm not going to bore you because my comments -- I'm Ed O'Brien and I'm vice president of the Maryland Charter Boat Association. I'm an advisor to the Rock Fish Committee.

Unrelated, I'm vice chairman of the National Charter Boat Association from Alaska to Maine. I hope I'm not going to bore you because my comments are very subjective. They're very simplistic and very anecdotal.

Menhaden has gotten to be the subject of our times in Maryland. That is why it's very local, but it's going to bring a lot of pressure on DNR. It's going to bring pressure on the Maryland/Virginia relationship and on the Atlantic States Marine Fisheries Commission.

And, again, I'm ignoring such scientific things as weather, harvest mortality, and the environment, the water quality when I make these simplistic comments. But for the last several years, we have been seeing a decline in bluefish, a decline in sea trout, very dramatic the last two years.

We're seeing the striped bass keeper size migrate out to the ocean much sooner than they were before. My cohorts up and down the coast keep telling me they're seeing small fish. The last couple years we haven't seen the bigger keeper fish come into the bay that usually come in late October and November.

I represent 550 charter boats who take out hundreds and hundreds of thousands of people. The subject of the hour, the last two years, is rising to a crescendo based upon the press, based upon the opinions of 550 charter boat captains that don't see menhaden.

This issue is getting to be a catchall for many problems. But it doesn't seem, based upon the reports I've heard today, that at least in our local area, it is really being addressed relative to the funding and the level of effort that is being applied towards this problem.

But perception-wise, it is a very, very serious issue in Maryland right now. Basically, that's the message. I guess it's a public relations type of message, and you all probably totally appreciate it, but I owe it to my 550 captains and the hundreds of thousands of people we take out to come in and say a few words on this subject. Thank you very much, Mr. Chairman.

CHAIRMAN TRAVELSTEAD: Thank you, Ed. David, did you have a question for Ed or were you going to make a comment? Okay, stay right there, Ed.

MR. BORDEN: Ed, I'm just kind of curious, having listened to that scientific report and listening to all the concerns that the recreational and environmental community have put forward on this issue, and then when you match up those concerns with the scientific uncertainty, it seems to me that what really needs to take place here is for not only the recreational fishermen but the commercial fishermen that rely on the stocks to kind of band together and have an initiative that they would jointly sponsor in Congress to try to get the resources for the scientific studies that would tease out some of that uncertainty.

I guess my questions is are the forces starting to come together on that type of strategy? I mean, for

instance, is your group willing to work with the commercial fishermen to try to sponsor congressional initiatives to get the funding to do those types of studies? Are you trying to work together with each other? It seems like there is common ground.

MR. O'BRIEN: There certainly is common ground. The level of working together activity is not as strong as it should be, but I see that rising because of the public perceptions. Again, getting back to Maryland, where this problem is, we need some fish to get through.

Again, where we have to focus on is our Department of Natural Resources. In many ways the perception is that focus has to depend upon our relationship with Virginia to our south.

Again, this is so simplistic. This is getting blamed for a lot of things, multi-species, and that may or may not be true, but I see the conclusion as how healthy this stock is. Gentlemen, I remember when it was healthy, but we don't see it now.

The eastern shore of Maryland, the western shore, the charter boat captains who are out there every day, we don't see them. We don't see them. It's that simple. We see other things either leaving or not showing up.

When it comes to the rock fish, I don't know, we wonder sometimes if the boys are leaving with the girls in order to get the feed. We're confused on it. We don't know how to talk to our customers intelligently about it. The information comes from this effort that we've got a healthy stock, and we don't see that.

CHAIRMAN TRAVELSTEAD: Thank you, Ed. Gil.

MR. POPE: Yes, Ed, could I ask you, could I ask a question? Thank you, Mr. Chairman. Do you see the catch rates dramatically dropping as well, or do you see increases in the recreational fishermen? I mean, does it all correlate together?

MR. O'BRIEN: Well, yes, we're seeing catch rates drop off and rather dramatically, particularly in the fall. I mean, going back to the rock fish, to keep one, we throw back 75 or 80 — plenty of little fish, which is very encouraging, but it seems every year that the mid-sized fish, fish over 20 inches, let's say, has been declining.

Again, people say why, we've had great young of the years and the fishery seems to be great along the

coast. I'm going back to my menhaden now. That is the simplistic answer that is arising among the fishermen. The chatter on the radio, the captains talking to captains, all the customers hear this.

Maybe there needs to be more explanation of other issues that could affect this, but the menhaden dearth in Maryland is the subject of the hour.

MR. POPE: So your catch at age from 20 and up has dropped dramatically, then, is what you're saying.

MR. O'BRIEN: The last two-three years it has dropped. And, again, why? Are they migrating out? Is it the weather? Is it the mortality? Don't know. But I'm just giving you the message that right now you're going to have to deal with the public perception that the answer for this is the decline of the menhaden.

Right or wrong, it's in the press and it's in the perception in the conversations. I'm very uncomfortable in dealing with it, because I don't understand it and I need someone to get through to me.

CHAIRMAN TRAVELSTEAD: Bill, did you have a comment?

MR. GOLDSBOROUGH: I was going to propose a motion just to focus the discussion a little bit on the points that have been raised, if it is appropriate.

CHAIRMAN TRAVELSTEAD: That's fine, go ahead.

MR. GOLDSBOROUGH: **The motion would be to move to include a suite of management options to assess and/or prevent localized depletion of menhaden in Chesapeake Bay in the addendum.**

CHAIRMAN TRAVELSTEAD: I'm not sure everybody is going to understand what you mean there. You want a suite of management options to assess the localized depletion. Can you give us a little bit more detail and speak to the motion?

MR. GOLDSBOROUGH: Right. Well, actually what I said was assess and/or prevent, the point being that as the discussion in the meeting so far has indicated, we both need to learn more about it, and we need to develop measures to deal with it.

So, now my presumption was that the process would start with a public information document, and that we could -- in order to move this along, staff could draft a series of options for how one might approach the issues that have been brought up both by the public and by the Technical Committee to get at the problem.

Public comment would be heard back and then this body would deliberate --

CHAIRMAN TRAVELSTEAD: Okay, let me ask is there a second to the motion?

MR. FREEMAN: Second.

CHAIRMAN TRAVELSTEAD: Seconded by Bruce Freeman. Okay, let's have more discussion. I'm going to go back to you, Bill, if you have more discussion. Bill, do you have more discussion? Okay, Bob.

MR. BEAL: Thank you, Mr. Chairman. A couple things, first of all, I think the content of this motion would be a substantial enough change in the management of Atlantic menhaden to probably warrant an amendment rather than an addendum.

Right now we have simply, as Matt presented, a biomass target and a fishing mortality target, and this would introduce another suite of options that currently -- or a suite of management programs that currently aren't in the overall menhaden management program. The idea of an addendum is to more or less adjust things that are currently in the plans or amendments.

The second issue is on the annual work plan. What we have in there right now is an addendum to deal with the biological reference points based on the peer review that Matt presented. Then the other issue is the frequency of the stock assessments as recommended by the Technical Committee.

It is anticipated that is a relatively straightforward addendum with minor changes, so anything above that really isn't accounted for in the annual work plan as far as staff time and financial resources to do the work.

CHAIRMAN TRAVELSTEAD: Okay, thank you. Pres.

MR. PRESTON PATE, JR.: Bob answered my question, Jack, thanks.

CHAIRMAN TRAVELSTEAD: Okay, Gil

and then Bill Goldsborough.

MR. POPE: Thank you, Mr. Chairman. I guess my question, either for Matt or for Bill, would be there are now recognizable, predictable, localized menhaden populations, places where you could go and normally find them in certain areas and not in others? Thank you.

CHAIRMAN TRAVELSTEAD: Bill Goldsborough and then Gerry.

MR. GOLDSBOROUGH: Perhaps to move this along or make this more understandable and getting back to the Technical Committee discussion, maybe what we need really is to explore some options for measurable plan objectives that address the localized depletion-ecological role issues.

Now my reluctance in saying that up front was that did seem to me to be something that would require an amendment. But I'm wondering if the addendum process isn't an appropriate way to explore some of those options and get feedback short of actually incorporating them into the plan.

My intent is merely to move this along in response to what we heard from the Technical Committee, which was they really can't do anything on the ecological reference points until there are measurable plan objectives to give direction. So how do we get to them?

CHAIRMAN TRAVELSTEAD: Gerry and then Tom Fote.

MR. CARVALHO: Thank you, Mr. Chairman. It seems to me that we would task the Technical Committee to make an assessment of the alleged depletion of menhaden in these particular areas, including --

CHAIRMAN TRAVELSTEAD: Well, I think they've done that, and we've had a report today that they don't know enough at this point to be able to tell whether localized depletion is occurring. I don't want to put words in Matt's mouth. He can speak on his own.

MR. CIERI: Yes, I can address that.

CHAIRMAN TRAVELSTEAD: Matt.

MR. CIERI: Yes, pretty much, we don't quite know what's going on. And when it comes to you guys developing this sort of an addendum or to

do this type of reference points or management options, you're going to be out there where the busses don't run. We're not going to be able to help you. Let me make that quite clear.

CHAIRMAN TRAVELSTEAD: Gerry, did you have a follow up?

MR. CARVALHO: Yes, and a follow up, then my next -- what I think I would do next is consider the options before we move to the addendum process.

CHAIRMAN TRAVELSTEAD: Okay. Tom Fote and then David Borden then Bruce Freeman.

MR. FOTE: Years ago the fishermen in Maine asked the same question, where did all the menhaden go? They said it was a local depletion of the stocks. When all the Rhode Island bait boats came down to New Jersey to start harvest, because we have menhaden off our coast, but there wasn't at that point the larger menhaden for bait up there, they said it was a local depletion of the stocks.

If we're going to do this, I don't want to just do it -- because this is going to be a long process. This is not going to happen overnight. It's going to take a big influx of monies to do this.

I would probably be more generic. How do you basically assess the local depletion of the stocks in any area? Can you manage for that depletion or is it just part of a cycle or just part of what happens?

So, it's a more encompassing thing than just the Chesapeake Bay, and if we're going to do an addendum to a plan to do that, then I -- because I've asked this question for 15 years -- let's do it for the whole, not just for one small part. Are we going to be able to use the information that we get from the Chesapeake Bay to accomplish this for other areas? That would be my question.

CHAIRMAN TRAVELSTEAD: David.

MR. BORDEN: Thank you, Mr. Chairman. I mean, just going back to Matt's point -- and this is on the motion. It seems to me that what the technical advisors -- Matt's free to correct this if I mischaracterize it -- what they're saying is there isn't a technical basis or ability to evaluate this question.

That's what they're saying right now. So if we take this action, and I'm not speaking against the action, it

seems to me it falls right on its face, because there isn't a technical basis for doing it.

I think, going back to the discussion with Ed O'Brien, is what we should be doing is asking the Technical Committee what are the studies that need to take place in order to evaluate this issue, put a number on those studies.

Then I think the commission ought to go on record and have our chairman and executive director basically work with the constituents to try to get the funding through Congress to do those studies, so that there is a scientific basis for the action that is going to be taken.

At least, if you do that, you're in the position where we can have an objective discussion about what we want to accomplish, what the objectives are and so forth and tease that out of the information.

I think we're just kind of proceeding on a blind basis at this point, all due respect to Bill. I know he's trying to solve a critical issue in terms of Chesapeake Bay, but I think we've got to put science first in order to solve it.

CHAIRMAN TRAVELSTEAD: Bruce.

MR. FREEMAN: The question I have, Jack, perhaps could be addressed by you or Pete Jensen relative to the scarcity of forage. Certainly, menhaden is an important component of that, but I recall several years ago some work done I thought by the University of Maryland looking at the scarcity of bay anchovy. I'm just curious if any light that can be shed on this not just being a menhaden problem but a forage-based problem.

CHAIRMAN TRAVELSTEAD: I know there are surveys in the bay that look at other forage species, but I am certainly not competent here today to discuss what they say. We could certainly have someone at a future meeting talk about that if you want to. Can you talk to it, Bill?

MR. GOLDSBOROUGH: I can say a little bit on that point. Bay anchovies would be, probably in terms of biomass, the next most important forage in the Chesapeake in terms of numbers, the Number 1. Their numbers have been down in the last few years, as have other alternative prey like blue crab and I believe juvenile spot as well.

CHAIRMAN TRAVELSTEAD: Gil.

MR. POPE: Thank you, Mr. Chairman. I guess the point is we need to try and map out where these spots would be that this motion refers to; and if they don't already exist, try and figure out a way to work towards what Bill would like to see. Thank you.

CHAIRMAN TRAVELSTEAD: Pat.

MR. AUGUSTINE: Thank you, Mr. Chairman. Based on the direction the conversation is going, I have to refer to my new card, that is Number 9. I would suggest, as this would require an amendment as opposed to an addendum, based on what Bob had said and then followed by the comments that Dave Borden had made, it appears we need a little more time to develop this to a point where we can move it forward to do something more, so I'd like to postpone it to the definite time of the May meeting, at which time hopefully there will be enough -- I need a second, first, don't I?

MR. GORDON C. COLVIN: You have to move something first.

MR. AUGUSTINE: **I move that we postpone this motion to the May meeting.**

CHAIRMAN TRAVELSTEAD: Okay, there is a motion.

MR. AUGUSTINE: Then I'd like to talk to it.

CHAIRMAN TRAVELSTEAD: **There is a motion to postpone to the May meeting.**

MR. FREEMAN: Second.

CHAIRMAN TRAVELSTEAD: Is there a second to the motion?

MR. FREEMAN: Yes, right here. Jack, if I may speak. I would ask that we get some background information on issues related to the forage base, if this motion goes forward, at least for the benefit of the board.

CHAIRMAN TRAVELSTEAD: Okay, well, hold that thought, and we'll see if the motion passes. Pat.

MR. AUGUSTINE: Yes, again, based on the importance of this -- and I support what we're trying to accomplish here, but we're not going to solve it in the time frame that we've got to do it.

There are too many questions that have to be answered, and we don't have the people here to answer those questions. We can't identify the specific locations other than possibly an area within Chesapeake, and that's the reason for this motion. I do call the question.

CHAIRMAN TRAVELSTEAD: Are there further comments on the motion to table this? Russell.

MR. RUSSELL DIZE: Jack, not on the motion, but there are so many factors working in this Maryland part of Chesapeake Bay area that haven't been brought up. One is the middle part of the bay, from Cove Point to above the Bay Bridge, is in the summer time totally dead with oxygen.

We've got many more factors that can be brought out than just the scarcity of menhaden. We have many factors working in that area of the Chesapeake Bay. I agree with Ed O'Brien, as he said, there is a reduction of the amount of alewives or menhaden that are caught, but there are many factors weighing in on it and not just the fact that they alewives aren't coming there, but why aren't they coming there. Thank you.

CHAIRMAN TRAVELSTEAD: Again, the motion is to table this motion to the May meeting. Comments on the motion to table? Yes, sir.

MR. ED GOLDMAN: Yes, I think Pat has got a really good idea. As we said, there are a whole lot of things we need to know, and I'd even like to suggest tabling, because this could be a good subject for a workshop in the future, if there are the funds available to do that. I think tabling is a good idea.

CHAIRMAN TRAVELSTEAD: Is there any board member who wants to speak against tabling? I think we're ready to vote, then. Is there any objection to taking the vote at this time? Okay, we'll vote. All those in favor of the motion to table -

MR. CALOMO: Caucus.

CHAIRMAN TRAVELSTEAD: Yes, I'm sorry, yes. Let's take some time to caucus.

(Whereupon, a caucus was held.)

CHAIRMAN TRAVELSTEAD: Is there anyone who is not ready to vote?

Okay, all those in favor of the motion to table, raise your right hand, please; opposed, like sign, please; abstentions; null votes. **The motion passes with 12 in the affirmative.**

Relative to the issue, I do want to call on Matt because he did present some information that might have gotten by you, and I just want him to summarize that very quickly.

MR. CIERI: Yes, within the document itself, we have a laundry list of research recommendations that we think will help us specifically answer some of these problems. There is also another set of research objectives that appear within the SEDAR report on how to improve the assessment and to expand it to answer some of these questions you guys have. But there is a list of some of the research that we need to have accomplished in order to do this.

CHAIRMAN TRAVELSTEAD: But the list does not contain estimates of the cost of those projects, is that correct?

MR. CIERI: No, it does not.

CHAIRMAN TRAVELSTEAD: Would the Technical Committee be able to do that?

MR. CIERI: It would be fairly difficult. We would be able to give you maybe a range, but we're not sure how much some of this stuff is going to cost.

CHAIRMAN TRAVELSTEAD: Okay, but you could give us ballpark —

MR. CIERI: Well, we can certainly give you ballpark, a couple mil here, a couple mil there.

CHAIRMAN TRAVELSTEAD: Okay, well, I think I would ask that at a minimum the Technical Committee undertake that task. David, did you have a comment? We're not going to go back and rehash the motion.

MR. BORDEN: I was going to raise the same point that you raised. I mean, we've had a productive discussion, but it doesn't lead anywhere. It seems to me that you need to put numbers on those research recommendations and then bring it back before the entire group and endorse those research priorities and then try to figure out how to fund them.

CHAIRMAN TRAVELSTEAD: Very

good. Bill, you had your hand up and then Jeff.

MR. GOLDSBOROUGH: Well, I was going to go into the same topic and follow up on Dave's earlier question to Ed O'Brien, which was about whether or not there could be some grassroots support for a funding initiative to Congress to support the needed work.

I think there would be public support for it, if we could get an initiative organized, and it sounds like the first step is, as you are describing here. It may be that it would be more productive not to just lay it on the shoulders of the Technical Committee but seek to have -- I don't know, it might be the NOAA Chesapeake Bay Stock Assessment Committee, which I know works with the commission already on multi-species initiatives, could help out and work with the Technical Committee or staff, I'm not sure, but just put together a funding initiative, so we can get moving on the work that has been identified as necessary.

CHAIRMAN TRAVELSTEAD: Well, just as a reminder, yesterday the Policy Board approved a -- Vince, you might want to comment to this -- approved a list of items that we would present to Congress, I guess, for additional funding, one of which was this very issue, the issue of menhaden and localized depletion and all of the topics that have been discussed here today.

So, the effort is already underway, and if there are other groups that want to support that, I would suggest they talk to Vince, who is, I think, going to be leading the charge for the commission. Jeff, you had a comment.

MR. JEFF TINSMAN: Mr. Chairman, in addition to putting a price tag on some of these research needs, I think it's important to specifically prioritize them. I mean, what are the most important of the things on this list, which are the ones we would be nice to have, but don't need to have and that sort of thing. I think we need real specific guidance here.

CHAIRMAN TRAVELSTEAD: Good idea. Amy, I saw your hand up in the back. Do you want to speak to this issue? Can you come up to the microphone, please.

MS. AMY SCHICK: Thank you, Mr. Chairman. I appreciate you recognizing me. I just wanted to make a quick point. My name is Amy Schick and I'm here on behalf of Environmental Defense. The motion to postpone and talk about this

issue more, I think, is a good one.

I think it's a very large issue, and there are a lot of uncertainties, but I just wanted to get on the record saying that right now there is a lot of movement towards ecosystem-based management and multi-species management.

I think the Technical Committee has highlighted the importance of moving in that direction but an inability because of the lack of information, so, again, I would just support trying to collect the information so we can answer some of these management questions that the board is being faced with right now and propose that maybe between now and the May meeting, come up with ideas of how we can start collecting that information and looking at some of these interactions, whether it's the priority list of recommendations, which we support the Technical Committee putting together, but also the idea of a workshop and how we can start collecting the information we need to address these problems that are coming up. Because right now, it is hard to move forward when you don't have information. Thank you.

CHAIRMAN TRAVELSTEAD: Thank you. Tom.

MR. FOTE: Having gone down this route once before, my suggestion to the people that are involved in this, that the first thing you do is have a workshop to put together what you want to do before you even go to the money.

I made the mistake of not doing that, and all of a sudden we had money and people spent the money and we didn't get the results we wanted from the first go-around. What I should have done, when I requested that, because the money actually flowed faster than we realized it would go in there, we weren't prepared and research was wasted, or research didn't get the stuff that we needed.

What I really would suggest to them is you get the commercial fishermen, recreational, the scientists together, look at what questions you want, really be specific and try to refine the appropriation that comes down from this and be more specific on it so you don't see money being wasted.

CHAIRMAN TRAVELSTEAD: Thanks, Tom. I think we all ought to spend some time, I guess, over the next couple of months thinking about these types of things, so we'll be prepared at the May meeting to offer some specific or take some specific

action. Any other comments on this issue? Seeing none, we'll move on to the update of the multi-species model from Geoff White.

UPDATE ON MULTI-SPECIES MODEL

MR. GEOFFREY G. WHITE: Thank you, Mr. Chairman. There are a few efforts actually going on relative to multi-species. There is a handout coming out that will give you an update on these items.

I'm going to take them in, basically, three areas; the MSVPA model development, the spatial model development and then how to incorporate these models into the commission's management process. Those are kind of the three larger areas.

Relative to the MSVPA model, I know the board and the Technical Committee are very interested in having that in-hand and peer reviewed and ready to start addressing, in part, some of the questions that have been asked today.

The good news is we do have a model. We are doing our homework to make sure that has been presented to each of the species technical committees to make sure that it has had the appropriate vetting as well as input on the individual species data.

It has been to striped bass, weakfish, menhaden and bluefish technical committees. We do have some of the model documentation. We're preparing the data documentation in terms of what has been already compiled to go into that model.

This is all in preparation for an internal review of the model that is being conducted under the Stock Assessment Committee. It has been scheduled at least with the panel for July 14th, 15th and 16th of this year.

The plan is to mail out the model and the data and the documentation, give them a few months to push and pull on it and then come together and have a three-day review meeting, let us know where the model has its strengths and weaknesses.

Basically, it is in preparation for going out to a SARC 2005 spring external peer review. This is, basically, the process that we'd follow with any new single-species model.

We're making sure we follow it and coordinate between the technical committees for the multi-species model, which is a little bit more difficult, but we are trying to do our homework and do this in a

step-wise progression.

The couple of things that are in the document, there is the subcommittee membership that we have right now. I will note that we're hoping to get Jeremy Collie on the panel, but he is not confirmed at the moment.

Also, the terms of reference for the internal review are on the second page. One of the things that the review is going to focus on is the quality of the input data and appropriateness of that, as well as how this multi-species VPA model is formulated, how the calculations take place.

There will be some base results presented; however, that is kind of more in an aspect of how the model is being run. The review at this point is not focused on evaluating management options or providing information to the board this summer to take management action upon.

We suggest that waits until after the external peer review scheduled for Spring 2005 with SARC. Just in terms of how the model can help you, it's not going to generate or on its own create an optimal allocation between species or tell you exactly where to go.

Those are obviously still management board decisions, but it does have a short-term forward-projection aspect to it that will allow certain management options to be evaluated. That is one of the things that we're looking forward to seeing how that works as well as what the internal review this summer has to say about how that functions.

One of the other focuses of this summer's internal review is to develop recommendations on how to utilize the model and the results in the commission's stock assessment for individual species, so, again, how to tie that back into the existing process for stock assessment.

The second portion is just to touch base on the spatial model development. That's a two-year project, that we've just finished the first year, or we're basically finishing the first year of development on with Jerry Ault and Jiangang Luo at University of Miami.

The scale that we're hoping to get out of this is kind of regional. It's going to depend, though, on what the historical data will allow us. We're going to be having a workshop at the end of this month, March 23rd and 24th, to show kind of what the first year of development has done, present it to a lot of the data

holders, as well as a couple of the commission model and technical committee folks, and basically give guidance on the second year of model development, other sources of data that we'd like to include. It's more of a checkpoint and developmental meeting than a how-to-use standpoint. That's just a brief word on the spatial model.

The third aspect was the idea of implementing the results of multi-species and ecosystem models back into the commission's single-species management process, two activities there. One, October of 2002, we held a workshop about linking multi-species assessments to single-species management.

We did finalize that report, and it was approved by the Policy Board in December. It has been printed. It is available either by contacting myself or on the commission's Website under the Special Report Section. It's Special Report Number 79.

The next step with the implementation plan, which details kind of all of the suite of activities that would have to take place for any management agency over probably a ten-year period, would be to take that and look at it in terms of what the commission specifically would like to do.

The Management and Science Committee has a subcommittee working on that, and they're trying to find specific tasks as well as methods to bring this in and tie it into the commission process.

This is more of a FYI on the fact that the efforts are taking place on once we have it what kind of activities should be done within the commission to bring it forward, and I wanted to let you know we are thinking about the kind of the process end of being able to bring it back to you. That's the quick overview. I know we're running late, so I'll take questions now or back at the office.

CHAIRMAN TRAVELSTEAD: Thank you very much, Geoff. Are there questions of Geoff on his update? Thank you very much, Geoff. We appreciate your update, and I would hope that you would keep us informed of any progress that is being made on these things or lack thereof, so please come back at future meetings and keep us up to date. Moving to Item 11, election of vice chair, Bill Adler.

ELECT VICE-CHAIR

MR. ADLER: **Yes, Mr. Chairman, I'd like to nominate A.C. Carpenter for vice chair.**

CHAIRMAN TRAVELSTEAD: Is there a

second to the nomination? Seconded by Pat Augustine.

MR. AUGUSTINE: Thank you, Mr. Chairman, and move to close nominations and cast one vote, sir.

CHAIRMAN TRAVELSTEAD: Any objection to closing nominations? Seeing none, is there any objection to the nomination? Welcome aboard, A.C.

MR. CARPENTER: Thank you. I was feeding him candy the whole meeting just so he'd do that.

CHAIRMAN TRAVELSTEAD: Is there any other business to come before the board? Is there a motion to adjourn? Thank you all very much. The meeting is adjourned.

(Whereupon, the meeting was adjourned at 1:16 o'clock p.m., March 11, 2004.)
