

PROCEEDINGS
of the
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC MENHADEN MANAGEMENT BOARD

August 27, 2002
Swissotel Washington, The Watergate
Washington, D.C.

Approved November 19, 2002

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ATLANTIC STATES MARINE FISHERIES COMMISSION

Swissotel Washington, The Watergate Washington, DC

ATLANTIC MENHADEN MANAGEMENT BOARD

August 27, 2002

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Attendance

Board Members:

George Lapointe, ME DMR	Pat White, ME Gov. Appte.
Dennis Abbott, proxy for Rep. Blanchard, NH Leg. Appte.	Ritchie White, NH Gov. Appte.
Dr. David Pierce, MA DMF	Bill Adler, MA Gov. Appte.
Vito Calomo, MA, proxy for Rep. Verga, MA Leg. Appte.	David Borden, RI DEM
Gil Pope, RI Gov. Appte.	Eric Smith, Connecticut DEP
Dr. Lance Stewart, CT Gov. Appte.	Sen. George Gunther, CT Leg. Appte.
Gordon Colvin, NY DEC	Pat Augustine, NY Gov. Appte.
Brian Culhane, NY, proxy for Sen. Johnson, NY Leg. Appte.	Bruce Freeman, NJ DF&W
John De Persenaire, proxy for Assemblyman Smith, NJ Leg. Appte.	Tom Fote, NJ Gov. Appte.
Jeff Tinsman, DE F&W	Eric Schwaab, MD DNR
Sherman Baynard, proxy for Sen. Colburn, MD Leg. Appte.	Bill Goldsborough, MD Gov. Appte.
A.C. Carpenter, PRFC	Catherine Davenport, VA Gov. Appte.
Jack Travelstead, proxy for William Pruitt, VA MRC	Preston Pate, Jr., NC DMF
Melvin Shepard, proxy for Rep. Redwine, NC Leg. Appte.	Dr. John Miglarese, SC DNR
David Cupka, SC Gov. Appte.	Susan Shipman, GA Coastal Res.
Dr. Roy Crabtree, FL FWC	Kathy Barco, FL Gov. Appte.
Bill Cole, proxy for Dr. Geiger, USFWS	Anne Lange, NMFS
G. Lyell Jett, Omega Protein, proxy for Sen. Chichester, VA Leg. Appte.	

Ex-Officio Members:

Mike Bloxom, MD DNR, LEC Rep.	Ellen Cosby, VA MRC, TC Chair
William Windley, MD, AP Chair	

Staff:

Dr. Joseph Desfosse	Dr. Lisa Kline
John V. O'Shea	Robert Beal

Guests:

Sherman Baynard, CCA - MD	James Price, CBEF
Michael Doebly, RFA	Jule Wheatly, Beaufort Fisheries
Dick Brame, CCA	Richard Daiger, PRFC
Dr. John Merriner, NMFS/SEFSC	Niels Moore, NFMOA
Jule Wheatly, Beaufort Fisheries	Jill Stevenson, MD DNR

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

Atlantic Menhaden Management Board

August 27, 2002

SUMMARY OF MOTIONS

1. *Move to approve the minutes of February 19, 2002.*

Motion by Mr. Augustine. Motion carries with no objection.

2. *Move to approve the nomination of G. Lyell Jett for the Menhaden Advisory Panel.*

Motion by Mr. Travelstead. Motion carries with no objection.

3. *Move to appoint Brian Murphy (RI DEM) to the Atlantic Menhaden Technical Committee.*

Motion by Mr. Borden. Motion carries with no objection.

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC MENHADEN MANAGEMENT BOARD

The Swissotel Washington, The Watergate Washington, D.C.

August 27, 2002

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The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Monticello Room of The Swissotel, The Watergate, Washington, D.C., on Tuesday, August 27, 2002, and was called to order at 2:00 o'clock p.m. by Chairman David V.D. Borden.

WELCOME/INTRODUCTIONS

CHAIRMAN DAVID V.D. BORDEN: Every one have a seat, please. We're going to start the Menhaden Board meeting. This is the Menhaden Management Board. And if you're not familiar with me, my name is David Borden. I'm the chairman of the Board. We have an agenda that has been distributed. Are there any changes to the agenda as it appears? I see no hands up. Anyone in the audience? Joe.

APPROVAL OF AGENDA/MINUTES

DR. JOSEPH DESFOSSE: Just note that there's one addition, appointment of a Technical Committee member for Rhode Island.

CHAIRMAN BORDEN: All right, we'll take that up at the appropriate time. As far as the agenda, we have the proceedings from the February 19 meeting. Are there any comments, questions, additions, deletions, on those? Yes, Pat.

MR. PAT AUGUSTINE: Mr. Chairman, **move to approve unless there are any suggestions, recommendations or changes.**

CHAIRMAN BORDEN: All right, is there any-- let me just ask, is there any objection to that? The minutes stand approved as submitted. As far as the agenda is concerned, we traditionally allow the public an opportunity to talk at the start of a meeting, but we also afford the public an opportunity to comment on proposals as they move through the board deliberations. So I would just ask, are there any members of the public who would care to address the board at this time? No

hands up, then. All right, yes, sir.

PUBLIC COMMENT

MR. JAMES PRICE: My name is James Price. I'm with the Chesapeake Bay Ecological Foundation. And as in the past, I've mentioned to the board about the problem with overfishing in the Chesapeake Bay and our concern of its effect on the health of our striped bass population.

I would like to bring the board up to date on a couple of things regarding a report that was sent to Congress, the bi-annual report on striped bass recently. And in that report it was noted that the Maryland Gillnet Survey Index of striped bass spawning biomass has declined since peaking in 1996. The 2000 and 2001 values were about one-half the series average. So this is one thing that we're concerned about, that the male spawning stock in the bay is showing a trend of decline. And looking at the menhaden landings in the bay, which of course is a primary food source for larger adult striped bass, the percent of coastal landings is increasing.

I think you've got a chart that was passed around. It's up to approximately 60 percent of the total coastal landings now are being removed from the Chesapeake Bay. And with the closure in New Jersey waters, that's probably going to continue to stay high and maybe even increase more. That's a concern considering the health of our striped bass population is deteriorating. And if you look at the landings in thousands of metric tons over the past 30 years, the trend is also an upward trend. And looking at the current population according to the National Marine Fisheries Service, the total population now of Atlantic menhaden ages 1 to 8 is the lowest since you've been keeping records.

So, that's very much a concern because the number of menhaden available to the striped bass, of course, is critical. I've also got some information on the health of the -- currently the Virginia Institute of Marine Science

has conducted studies on the health, and I can pass a copy around later that you can see, but there's also a paper that's published that approximately 75 percent of the striped bass in the Chesapeake Bay are infected with myco-bacteriosis, which is causing mortality, increased mortality, of striped bass in the bay.

And poor nutritional conditions exist throughout the striped bass population in Maryland and Virginia. That information can be made available to anybody who wants it later on. I'll be glad to give it to you. I'll pass this one chart around from VIMS that can show you their current research. Any questions?

CHAIRMAN BORDEN: All right, thank you, Jim. Any questions for Jim? Seeing no questions, I'd just note, Jim, that this is one of the issues that the advisory panel is going to comment on, also. I'd also note for the record that we do have a quorum and we're passing around an attendance list. Please complete it when it arrives. The first report we're going to hear is the technical committee report on the status of the fishery. Ellen.

TECHNICAL COMMITTEE REPORT

MS. ELLEN COSBY: Thank you. I'm combining the status of the fishery and the stock assessment review at one time, if that's okay.

CHAIRMAN BORDEN: Yes, I just want to make sure, can everyone hear Ellen? You're going to have to pull that microphone right up in front of her. Don't be timid here with this group.

Status of fishery/stock

MS. COSBY: This is the 2002 report of the Atlantic Menhaden Technical Committee. This presentation summarizes results from the latest analysis on the status of the Atlantic menhaden stock by Vaughan, Smith and Williams. The topics that I will present from Vaughan, et al., 2002, include the basic data and the development of catch at age matrices from both reduction and bait data; application of the Murphy VPA to the combined catch matrix, including an historic perspective of its output and some analyses concerning spawning stock biomass and age one recruits; updating of juvenile abundance indices; a comparison of the age-structured, forward-projection model as implemented in the AD-Model builder with the Murphy VPA; and current status of menhaden estimated for the Murphy VPA and the age-structured, forward-projection model relative to Amendment I benchmarks. This is information concerning the reduction fishery and development of catch at age for

this fishery; talking about the decline in the menhaden reduction plants and vessels, tracking of menhaden reduction landings and nominal effort, annual menhaden landings, annual mean weight of fish and unusual events this year.

In the late 1950s, there were 25 plants and about 130 vessels. In the 2001 fishery, there were two plants and twelve vessels. The historical landings and nominal effort from 1940 through 2001 are plotted here. The landings in 2001 amounted to 233,769 metric tons, which was a 40 percent increase over the purse seine landings for 2000. The annual estimates of the number of menhaden landed by the reduction fishery are plotted here. The mean weight of menhaden landed by the reduction fishery is estimated from total weight of menhaden landings divided by total numbers landed. An unusual large concentrations of adult menhaden occurred up to 15 miles off the Central and Northern New Jersey coasts during the mid-summer of 2001. The port samples from New Jersey that NMFS collected were dominated by age three fish that were at least 30 centimeters in fork length. You can see in the graph that the weight of the fish for 2001 went way up.

Sorry, about this table but it's in the report. During November and December, large concentrations of adult menhaden ranged from Cape Hatteras to Beaufort Inlet, North Carolina; consequently, few sets were made on age zero menhaden. So in the first column for age zeros, the number is 23, which is a lot less than it has been in previous years.

The bait fishery, the information on the bait fishery and development of catch at age for this fishery will be discussed, mean bait landings by state, a comparison of bait with reduction landings and catch at age matrix. The mean bait landings by state in the fishery are shown for 1997 through 2001. Note that most bait landings have recently been from New Jersey and Virginia with Maryland and North Carolina also important. The Potomac River Fishery Commission data is split between Maryland and Virginia. The landings from the remaining states are relatively insignificant for the period shown.

Comparison of bait and reduction landings by weight since 1985: With recent declines in reduction landings, the bait landings are now about 15 percent of reduction landings. This is catch at age. Estimates from the reduction fishery were combined with catch at age estimates from the bait fishery to create a combined Atlantic menhaden catch at age matrix for the period 1985 through 2001.

The next section is the Murphy VPA output and survival indices. We're talking about the annual estimates of full F, the estimates of the static SPR,

trends and recruit to age one, estimates of SSB and survival index. The Full F is your annual estimates of full F, which are two-plus, are plotted with percentiles 25, 50, 75. Generally declining values are seen since mid-1970s. The historical time period, 1955 through 2001, produced a median F of 1.3 with an inter-quartile range between 1.1 and 1.6. The preliminary estimate of fishing mortality rate for 2001 of 1.0 is slightly below the 25th percentile of the historical estimates.

The annual estimates of the SPR are plotted with percentiles 25, 50 and 75. High values were observed in early and recent periods. Annual estimates of age one recruits are plotted with percentiles 25, 50 and 75. Note the recruitment below the 25th percentile in the 1960s and again since 1996. These low estimates of age one recruitment in 1996 through '98 produced declining spawning stock biomass during the period of 1998 through 2000.

The estimates of spawning stock biomass are shown with the percentiles 25, 50 and 75. The decline from a peak value in 1997 to low values in 1999 and 2000 results from the estimated low age one recruitment during 1986 and '98. Good recruitment to age one in 1999 apparently has brought the SSB in 2001 back up above the 75th percentile. Survival is indexed by dividing estimated recruitment to age one by the previous year's SSB. Poor survival is noted in the early and recent periods. High survival in the 1970s helped rebuild stock from low SSB during the late 1960s and 1970s. This is VPA based.

Okay, this coastwide index is based on the weighted average of North Carolina at 0.35; Chesapeake Bay, 0.45; and Southern New England, 0.05. Equal weightings were applied to standardize indices within a region. Coastwide index for 2001 is approximately equal to the series median.

These are biological reference points from the Murphy VPA output using the reduction and bait data. This is the approach used in Amendment I to determine population variables using the VPA.

Okay, looking at the comparison of the ASFPM calibrated with coastwide juvenile abundance indices with the Murphy VPA, the full F, the static SPR, age one recruits and the SSB. Estimates of full F two-plus from the age-structured, forward- projection model as implemented in the AD-model builder are compared with Murphy VPA estimates. Higher values were obtained in some of the earlier years than those from the Murphy VPA. Very similar results were obtained for recent years except a lower estimate in 2001. For the static SPR, this new approach produces a comparable estimates of full F for most years. Smaller values were obtained in earlier years and similar values more

recently with the exception of the last two years giving the highest estimates ever.

Estimates of age one recruits giving very similar estimates were obtained for most years with higher estimates from this new model in the most recent three years. Estimates of the spawning stock biomass from the age-structured, forward-projection model, generally similar values of SSB were obtained with some interesting deviations. Lower estimates from this approach for some of the early years and more consistent rebuilding during the 1970s. This approach seems to be more affected, drops lower, by the economic shutdown of one plant in 1986 that causes a very low estimate of SSB in 1985. Finally, similar but higher values of SSB are obtained in the most recent years. Only the SSB in 1955 and '61 resulting from very large recruitment events in '51 and '58 are larger than the estimated approach for 2001.

The status relative to the benchmarks from the models. The status of the Atlantic menhaden stock relative to Amendment I benchmarks is discussed in this final section as determined from the Murphy VPA and the age-structured, forward-projection model, the ASFPM, as implemented in the AD-model builder. Current status and benchmarks from the ASMFC, Amendment I. This figure summarizes the current or 2001 estimates of SSB and F targets and thresholds from Amendment I. Current SSB is 104,500 tons. The target for SSB is 37,400, and the threshold is 20,570. And the F in the Amendment I, the target was 1.04 and the current is 1.0 and threshold, 1.33.

Okay, this schematic shows the estimates of SSB and F obtained from the Murphy VPA presented with the targets and thresholds from Amendment I. The values are plotted from 1985 through 2001. Values for the last two years are identified specifically. The estimates of full F in terminal year of 2001 is below its historical 25th percentile and right at its target, which is 1.04. The estimate of the SSB, 104,500 metric tons, is above its 75th percentile at 94,400 metric tons and well above its target of 37,400.

Using the age-structured, forward-projection model, the values are plotted from 1985 through 2001 for the SSB and F. The values are shown with a plus or minus one standard deviation. This approach suggests that the current condition of the Atlantic menhaden stock is better than that suggested by the simpler Murphy VPA approach.

The technical committee has done a more complete and detailed analysis of the bait data to estimate an improved catch matrix. Based on this new analysis, only minor variations in selectivity were observed as estimated by the separable VPA for 1990 through 2001.

Therefore, the committee recommends no change in the current F-based benchmarks from Amendment I where the target equals 1.04 and the threshold, 1.33.

However, the combined reduction and bait catch matrix shown previously has resulted in historically higher estimates of SSB, especially for the period 1985 through 2001, than those obtained from just the reduction catch matrix. Because the SSB benchmarks represent absolute values and not a rate as do F-based benchmarks, the committee recommends that the SSB-based benchmarks be updated based on the same proxy methodology in Amendment I.

The proposed SSB target is then 57,200 metric tons with a corresponding SSB threshold of 31,500 metric tons, as shown in this schematic. Then using the age-structured, forward-projection model, as implemented in the AD-model builder, these are the targets. The new benchmarks are also shown for the SSB.

CHAIRMAN BORDEN: All right, questions for Ellen. Any questions? Anyone in the audience? No hands up. Everyone must have eaten too much lunch. Dave Pierce. Welcome back, David.

DR. DAVID PIERCE: Thank you very much, good to be back. One of the figures that was shown on the report is on Page 16, that's Figure 7, where we see a plot, I believe, of the situation we've had over the years regarding abundance of juveniles. And we note that over the last ten years or so, maybe a little bit more, I guess the last ten years, we've seen for the most part the production of juveniles that has been below the standardized value of zero, meaning that the picture for juveniles has not been that good in the recent ten years.

Did the technical committee offer up any advice regarding future status or did you just limit yourself to 2002? Because when one looks at that particular data in Figure 7, one begins to wonder what is to come in the next three to five years if indeed the amount of juveniles is at a relatively low level versus some median number.

So did you have a chance to do any projections or did you just stick with 2002? Any words of warning, for example? Are any words of warning for the future justified or is there absolutely no need to be concerned about the apparent low level of juvenile production over the last ten years?

MS. COSBY: The committee was concerned. There is discussion. The last couple years in the VPA of zero age and ones is not a very good number, so we don't have a lot of confidence in those numbers. So we have to wait to see how it changes over the next couple of years. but there was concern and there was discussion. I think some of that will be brought out in the responses to the board's questions that will be

coming up in the next section.

CHAIRMAN BORDEN: Any other questions for Ellen? Vito.

MR. VITO CALOMO: Thank you, Mr. Chairman. Do you take in consideration, when you take in the juvenile estimates, the abundance of juveniles that have shown up in the Northeast Region such as Maine, New Hampshire, Massachusetts? We haven't seen this abundance of juveniles since around, oh, I think it was around 1978.

CHAIRMAN BORDEN: Ellen.

MS. COSBY: You were talking about the abundance currently?

MR. CALOMO: That's correct, Ellen.

MS. COSBY: There was some talk about the sightings of juveniles up in the northern --

MR. CALOMO: It is the biggest abundance we've ever seen in over 20 years in our area on juveniles, that no one seems to be paying too much attention to.

MS. COSBY: Which state is that?

MR. CALOMO: That's in the state of Massachusetts, off the coast of New Hampshire and in the state of Maine.

CHAIRMAN BORDEN: Joe.

DR. DESFOSSE: Doug looks at the individual state surveys on a coastwide basis each year. That gets incorporated into the standard index that he's working on, so the abundance in the New England waters is taken into account. The question becomes how important are those nurseries to the coastwide population? Right now the estimate is the North Carolina estuaries make up 35 percent of the total; Chesapeake Bay, 45 percent; Mid-Atlantic -- I've lost the numbers. It decreases as you go farther north.

MR. CALOMO: Thank you, Joe, I appreciate that. We haven't been players to the northern for years, since we closed down our reduction plants because of a lack of species. And they were old, anyhow, number one, two and three. And we've been using herring that have been in abundance off our coast for the last 20 years or 18 or 20 years, and we haven't had a directed fishery for menhaden for years. We are seeing large amounts of age zero fish, seeing that I've been in there from the 50's, that I think I know what I'm talking about.

But I was just wondering, since we haven't been players in the industry, if they ever take in consideration the abundance of age zero fish off our coast. That's all. And you've answered that, Joe, and I thank you very much.

MS. COSBY: They also are doing the juvenile abundance surveys from the different states so if that information is sent to Beaufort in survey form, then they can use it.

CHAIRMAN BORDEN: Any other questions?
Bruce.

MR. BRUCE FREEMAN: Thank you, Mr. Chairman. Several questions relative to some of the graphs that are presented in the technical committee report.

Ellen, you indicated that the estimate of this year's recruits or the most recent year's recruits tend to be low and as time goes by they tend to increase. It's simply a function of sampling, and it seems to be characteristic of most VPAs, an underestimate of the most recent year's recruitment.

Is there some percent that you've been able to determine that after two years or three years, that those recruits increase. For example, we've seen in summer flounder on the order of 30 to 40 percent it seems to be underestimated; and as time goes by, they tend to increase. Is there some number that we can use in menhaden? Is there a similar number?

MS. COSBY: I'm not aware of any percent that can be attached to that.

MR. FREEMAN: Okay. And, also, relative to spawning stock biomass, there tends to be an overestimate; and then as time goes by, that tends to decrease somewhat. Is that similar with menhaden?

MS. COSBY: As I understand, the spawning stock biomass numbers are pretty good for menhaden.

CHAIRMAN BORDEN: Joe. Oh, excuse me, Bruce, I think Joe wants to follow-up on your questions.

DR. DESFOSSE: The first part of your question, if you look on Page 12 of the technical committee report, Table 6, it shows examples or it shows the estimates of the age one numbers over time. If you look at, say, the column for 1995, the row for 1995, the first number listed under 1996, then, is 1.1. That was the initial estimate of recruits to age one. And then you see how it changes over time for each successive VPA run. It finally settled down at 1.8 billion fish. And you could take a look at all the examples from 1993 through 2000 and see how they started out and where they ended up over time.

MR. FREEMAN: Okay. Dave, I had just a couple further questions.

CHAIRMAN BORDEN: Yes, go ahead, Bruce.

MR. FREEMAN: Relative to the new model, as I understand the report, by the use of the new model the fishing mortality would remain the same -- would remain what it has been estimated; however, the spawning stock biomass would increase somewhat. The conclusion of the committee is that the new model is the one that should be continued to be used?

MS. COSBY: Now, are you talking about the age-structured, forward-projection model?

MR. FREEMAN: No, I'm talking about --

MS. COSBY: Or the new benchmark?

MR. FREEMAN: -- fishing mortality and spawning stock biomass for biological reference points.

MS. COSBY: Okay, the benchmarks?

MR. FREEMAN: Yes.

MS. COSBY: And the F, we said --

MR. FREEMAN: Previously the Murphy model predicted, or I guess it would predict a value of F for the fishing mortality and the spawning stock biomass. And the new model does those as well, but fishing mortality remains constant or the same and spawning stock biomass increased. And my question is, could you explain why?

MS. COSBY: These benchmarks are still being figured up with using Murphy's VPA. The F-based benchmarks we recommend remain the same as in the Amendment I. And the SSB benchmarks we recommended to be increased, but that was using the Murphy VPA. Now the forward-based projection model, the other model that he is using to compare the figures with, is backing up the Murphy's VPA but it's a little more precise, I guess, but it's backing the Murphy's VPA.

MR. FREEMAN: Well, then I don't -- I guess I don't understand why fishing mortality is remaining constant and the spawning stock changed. I mean, what is the reason for that?

MS. COSBY: When the bait information was included in the calculations, it didn't change the F-based benchmarks but it did change the SSB.

MR. FREEMAN: Was there consideration given that the bait essentially is taken in two locations, primarily the Virginia portion of Chesapeake Bay and New Jersey and essentially no other area? Is it assumed that the distribution of fish is similar along the entire coast as predicated on those two locations?

MS. COSBY: They are using as much information as they have on this bait data. They're getting samples from Virginia, North Carolina, Maryland. I believe they got some from up in New England this year, too. But it's all put in the system, and the percentages, I think, are credited to where more bait is taken.

MR. FREEMAN: Right. The issue that is somewhat puzzling to me, especially on the bait fishery, there is the opportunity for bait vessels to take various sized menhaden. However, they select -- at least in New Jersey, they select for the largest fish because the bait market demands large fish and not small fish. So they're looking with spotter planes, as is the reduction fishery, for fish but they're actually selecting for the larger individuals. It's not just a sample of what the population is. It's a very biased sample towards large

fish, usually age three and older.

MS. COSBY: My understanding, from talking to one of the bait people from New Jersey, is that there aren't that many small fish up there; that most of the fish are larger fish and so they don't really have to select. It's just what they catch is the larger fish in New Jersey waters, for the most part. And once in a while, he said, there will be some small ones that will come through and will get mixed in but for the most part the fish tend to be larger.

MR. FREEMAN: But that's where they're fishing. There's smaller fish in close to land. They're prohibited from taking anything within six-tenths of a mile, even the bait fishery. So there are smaller fish but it is simply they're not allowed --

MS. COSBY: They're not available.

MR. FREEMAN: -- in where they occur. And smaller fish, at least in our area in the summer, tend to be closer to shore; larger fish, progressively further off. I'm just curious since there tends to be a bias of the bait fishery selecting for the large fish.

MS. COSBY: I think they take that into account.

MR. FREEMAN: Okay.

MS. COSBY: I am not involved with the statistic part of that but I believe they do take that into account.

CHAIRMAN BORDEN: All right, any other questions? Vito.

MR. CALOMO: Thank you, Mr. Chairman. Ellen, isn't there a large consideration given to the benchmark of the SSB being updated because of the large body of adult fish that are found offshore now that no one has ever fished on in many years or no one has ever talked about it in many years that even off our coast of Massachusetts are seeing fish 15 to 18 miles offshore?

MS. COSBY: Well, those fish that are included in the numbers this year showed the increase in the weight because of being bigger fish. We're not sure. We talked about it at the committee meeting of whether these fish have been there and just not been noticed. I think that the planes are out there looking now. And it depends on the weather, too, whether the reduction boats can get out far enough. They can only fish those areas when it's good weather.

MR. CALOMO: I agree with you that they can only fish them fish when it's good weather. That's why you've never seen them too far offshore. But we're also seeing fish that usually hug the coast, right on the beaches, become offshore.

Whether that's being chased outside because of the influx of the abundance of striped bass along our shores and other predators or pollution of some sort, I'm not so sure. But we are seeing large bodies of adult fish offshore other than years that we fished inshore. Thank

you, Ellen.

CHAIRMAN BORDEN: Gil Pope.

MR. GIL POPE: Thank you very much. Ellen, towards the end of your presentation, you had mentioned -- and I just caught the word, briefly -- "proxy projection model." What is that in reference to and why would a proxy be needed? I thought I heard that.

MS. COSBY: I'm not sure what. I don't recall saying "proxy."

CHAIRMAN BORDEN: Joe.

DR. DESFOSSE: Just to clarify something. There's two models that Ellen was talking about. That forward-projection model is an exploratory run that the technical committee is looking at. It has not been peer reviewed and the technical committee is not using that to base any recommendations on in terms of changing reference points. It is all based on the Murphy VPA runs that did go through the peer review process back in 1998.

CHAIRMAN BORDEN: Anyone else? If not, Ellen, thank you very much for your report. Next report we have on the agenda is the status report of the Menhaden Multispecies Subcommittee. Matt.

Menhaden Multispecies Subcommittee Report

While Matt's going through this, I'd just offer a personal observation that I attended the advisory committee meeting when they held it in Rhode Island, and the scientists were there and discussed this project. I think I would just offer the personal opinion that this is a very exciting project to me in terms of trying to piece together all the different interactions that the stocks have. It's really very innovative and a credit to all those that are participating in the process. Matt.

DR. MATTHEW CIERI: My name is Matt Cieri and I've been working with the Menhaden Multispecies Subcommittee for a few months and evaluating Lance's multispecies model. The model is very exciting, and it's nice to be a part of it.

This is a report, actually, of some progress that we have had thus far with Lance's model. One of the questions is why bother even using a multispecies model when most species are assessed in the single-species manner? Menhaden are both an important directed fishery as well as forage for a lot of different predators, including some commercially and recreationally important species.

The model itself has four goals. You knew you weren't going to get away without at least seeing one equation from a technical person. One of the goals is to actually look at this and sort of partition out natural

mortality and natural mortality due to predation. And in here we sort of define a "total mortality" as a combination of two natural mortality variables; an M-1, which we sort of assume is an all-encompassing type of a mortality, and then an M-2, or a predation mortality by the predators that we are looking at as well as a fishing mortality.

Some of the other goals include to estimate this sort of predation mortality and to evaluate each of our predators or the predators we are looking at, evaluate their role in that predation, as well as maybe do some balance or to explore the balance between menhaden's forage role as well as its commercial role.

So, the Multispecies Subcommittee, as well as the TC, all met together. We wanted to take a look at the model and poke and prod it a little bit and see how it fared. One of the things we did was to review the input data to basically look at what goes in the front end of the model, as well as what comes out the back end, to examine the model's formulations, assumptions as well as its conceptualization. We then reviewed and compared the outputs, took a look at it and compared it to the standard assessment method. And then we thought we would take a look at it and make some recommendations as to how you guys might use this as a management tool. And we also just tried to form a consensus on how the model was running and how much progress was being made.

Before we get any further, I want to clear up some things. One is that this model is not designed to replace the current Murphy VPA, the peer-reviewed, Doug Vaughan, Murphy VPA. We're only going to use this right now as additional information on the impact of predation. Right now there is no feedback from the prey to the predators. There's no changes in striped bass or bluefish or weakfish stock dynamics with changes in the menhaden population. This model also doesn't account pretty much for competition among predator species, and it also doesn't allow for a change in predator diet with a change in prey abundance. So, therefore, if there are more or less menhaden, that doesn't affect the actual proportion in the diet. And this model really is looking at processes. It's not looking at absolute values or for doing long-term projections. But this model really does give us, we think, a good, clear look at the predation processes that are going on for age zero and one and two menhaden.

So we took a look at the input data and we included the updated catch-at-age matrix with the revised bait data from this past year. Right now we can only run the model between 1982 and 1999. That's because the MRFSS data didn't start until 1981 and the last bluefish age-based assessment was in 1999.

So overall we approved of the model and the data that goes into the front end of the model, but we would like to sort of recommend at some point an age-based or an updated age-based assessment for bluefish. We also took a look at the conceptualization, the formulations and the assumptions that go into the model. Overall we're pleased with how the model is actually running. It's running really well, even on my computer. We found some bugs, some spelling mistakes, as well as areas that we thought Lance could actually improve in the data entry section. And we also requested him to fix a couple of minor glitches and bugs. After a thorough review, we approved of the conceptualization and the formulations and the assumptions that go behind the model. And we also approved it for some exploratory runs to answer some management questions.

Now we also compared this with the official Doug Vaughan assessment, the Murphy VPA, which you all know so well. And the models are very, very much in line with each other for age two-plus menhaden. The differences occur in age zero and one, and this has pretty much to do with the fact that this multispecies model is taking a good, hard look at the predation process which actually happens on age zero and one menhaden. So most of our findings, just from this preliminary look, there isn't a major change in predation mortality for age zero menhaden in the time that we ran this model.

And this sort of highlights the fact that perhaps the recruitment trends that we're seeing in the menhaden population are not explained by an increase in predation. The other thing that we came across was that F is literally orders of magnitude higher -- I'm sorry, smaller than predation mortality.

Now here are some graphs, the backend of the model here. And what I want to sort of draw your attention to is that over here on the Y we have the M-2, the predation mortality. Down here we have year. Blue is bluefish, obviously, and red is striped bass. And as you can see, there has been a change in the relative abundance of the predators -- I'm sorry, a change in the predation mortality associated with these predators over time.

The other thing to take note of is what this model also accounts for is this is the difference between age six and age seven striped bass. Again, this time we have biomass consumed over here on the Y axis, and over here we have year. And as you can see, as striped bass mature they switch in their selectivity for menhaden from age zero, the blue here, to a lot of age ones. They get big enough to actually eat the age ones; whereas, bluefish at age two are already starting to consume age one menhaden.

One of the other things that we took a look at is the uncertainty analysis. And we examined this uncertainty in menhaden catch in the stomach contents of the predators as well as the proportion that menhaden make up of those stomach contents. And we looked at uncertainty in predator abundance. And we did an all-inclusive, "this is how much error we can throw into this model" type of run. And generally speaking, we're pretty confident in the menhaden and predator abundance numbers that come out. So we gave them a lower CV, a lower confidence interval.

We're much less sure on the stomach contents and we're really fairly uncertain about a lot of bluefish factors, but we hope to be able to resolve that. And, again, here we are with M-2 over here on the Y axis, year on the X; and, as you can see, there's quite a degree of variability here. One thing to note is also back here in the 80s, when there was a lot of bluefish, there was a lot more uncertainty, and that's because of predation, and the amount of menhaden in bluefish stomachs is fairly uncertain. The other thing to take note of is this is for age zero menhaden, age one and age two. I hope you guys can all see this but note that the scale drops considerably. Most of the predation is done and over with by age two to three.

So our conclusions so far, this is what we think of the capabilities of this model and this is what we think we can do with it right now: to take a look at prey and predator abundance as well as fishing mortalities in that context and answer some management questions. We can also simulate, once we get an updated bluefish age-based assessment, that time frame between 2000-2001, and then at that point probably 2002, and compare those directly with the Murphy VPA as well as Doug's other model, exploratory model.

We can also examine predation levels that might affect the spawning stock biomass in the short term as well as specific level of age zero menhaden harvest that could also affect the spawning stock biomass in the short term. And, again, remember, this model looks at processes, not absolutes.

The limitations of this model that we've found is that these results are relative only to menhaden, not predator populations. And modeling predator populations from menhaden is the next step or one of the next steps. Predation is not really resolved spatially. There's no real difference in the model for a striped bass to consume menhaden from the northern or the southern or the mid areas of the range. And like the current VPA, simulations beyond three to five years are just not reasonable. The error goes up significantly and that has to deal with the fact that pretty much the menhaden that you have in your spawning stock three to five years out

is a function of whatever recruitment, stock recruitment relationship you pick.

We have a few research recommendations. Obviously, one is to update all the age-based assessments for the predator and the prey. We would like to get some improved diet information, especially from other areas other than the Chesapeake and the Mid-Atlantic. One of the ideas was actually to use a lot of states' coastal trawl surveys that are already under way and get some diet information from these. This would help out significantly.

So as far as the "what's next" for this model, one is that Lance is going to actually put in the ability for the model to look at other prey items as well as menhaden basically to allow the predators to move from one prey item to another based on electivity and abundances. Also, he is going to program in a feedback between prey and predator to look at the population dynamics and growth of the predators in response to prey abundance. And, finally, I think Lance has a workshop scheduled for early October.

So, in summary, this is not replacing the current assessment. It hasn't been peer reviewed. It gives us additional information on the predation process and what happens in natural mortality for age zero, ones and some twos. And it looks at the process of predation.

Overall the committee approved the formulation, conceptual-ization. We tweaked the inputs and made them what we think is appropriate. We looked at the uncertainty in the model and found it reasonable.

We recommend updated age-based assessments for bluefish as well as for all predator and prey species involved in this model. We think this model compares well with the current assessment. It augments it fairly well. While noting a lot of its limitations, we really think this model is going to be extremely useful in answering some serious questions that you all might have. That's it. I'd like to thank the staff and members of the Multispecies Monitoring Committee and the technical committee.

CHAIRMAN BORDEN: Questions for Matt? Tom and then Dave Pierce.

MR. THOMAS FOTE: Just looking at that model -- and we're talking about bluefish in the early 80's -- we can get a lot of information on menhaden, but really if you look at what happened in the 80's, the sand eel populations were out of sight. Really, we don't have that information available because there was no bait fishery for sand eels or no similar type of information, so how do you deal with that type of --

DR. CIERI: Lance is going to take a look at that. In addition to augmenting stuff from the fishery-dependent data, he has also got a whole armory

of fishery-independent data from state surveys, as well as other things, from the NMFS trawl surveys, and which he's going to take a look at that. But right now he's going to focus in on trying to add in a few more prey items into the mix and see how that affects the model.

CHAIRMAN BORDEN: Dave Pierce.

DR. PIERCE: Yes, a clarification. The last figure that you showed, actually three figures in one, historical menhaden predation mortality age zero, age one, and age two.

DR. CIERI: Hold a second.

DR. PIERCE: Okay, just before the conclusions.

DR. CIERI: Right.

DR. PIERCE: Okay, this represents the estimates of mortality at the different age that flows from your model; am I correct?

DR. CIERI: These are estimates of M-2, predation mortality.

DR. PIERCE: Right, and they flow from the model?

DR. CIERI: Yes.

DR. PIERCE: You run the model with the different assumptions that you have in it now and this is what you get for results regarding the mortality on those age groups?

DR. CIERI: The blue line -- these are the 95 percent confidence interval around its estimates of predation given RCVs, yes.

DR. PIERCE: Okay, so model projects that these are the mortalities.

DR. CIERI: These were the mortalities, yes.

DR. PIERCE: These were the mortalities. Okay, and one final question, right at the beginning of your presentation you noted your four goals, one being to reduce reliance on constant M.

I guess my question is with all the modeling that you've done so far regarding changing values or estimates of natural mortality, were you constrained by the overall assumed natural mortality rate of 0.45?

DR. CIERI: No, actually we weren't. That was the whole process of this model is to-- if I can go back to an earlier slide -- to answer your question, that assumed natural mortality of 0.45 would be if you took a look at M-1 and M-2 combined. That's how the Murphy VPA looks at natural mortality.

This particular model separates out that natural mortality, that M, into two components. One is an assumed mortality, the M-1, that we have to assume. We have to assume there are other natural predation processes as well as other natural mortalities that we're not accounting for in this model. But what we're looking at here is the M-2. The M-2 is that specific

mortality that is the result of the predators that we're looking at. So, no, we're not constrained. And we don't keep it constant over time.

DR. PIERCE: Okay, so, M-1 is not 0.45?

DR. CIERI: No.

DR. PIERCE: So you're just playing with numbers to see how things react to changes in assumptions which is what one does with a modeling exercise.

DR. CIERI: We varied the M-1 based on age. We don't have an assumed M-1. We basically changed the M-1 with age.

DR. PIERCE: The reason why I focus on this is that right now we are using 0.45, and obviously it would be wonderful if we could see the results or changes in different values of natural mortality on menhaden abundance. And if we change natural mortality, we end up changing the SSB threshold, getting back to what the technical committee provided for recommendations a little earlier on, since the threshold is equal to the target times one minus the natural mortality value.

So, I guess I'm wondering where do we go down the road with regard to our natural mortality value. If we end up changing the M value, then we'll have to keep changing or at least on occasion change our SSB threshold because we're using a simple equation to calculate it.

DR. CIERI: Yes, I understand that right now, but this model hasn't even been peer reviewed yet. I mean, using this model in that sense to set reference points is a fairly long way off until after it is peer reviewed.

DR. PIERCE: Yes, thank you.

CHAIRMAN BORDEN: Any other questions?
A.C.

MR. A.C. CARPENTER: Did I understand you to say that the M-1 wasn't constrained; but the sum of M-1 and M-2, was that constrained to equal 0.45?

DR. CIERI: No.

MR. CARPENTER: Thank you.

CHAIRMAN BORDEN: Any other questions?
Bruce.

MR. FREEMAN: You indicate that you only used the MRFSS data back to '81 but that data extends back to 1960?

DR. CIERI: I'm not quite certain of that. I would have to ask Lance why he only went back to 1981. But, yes, apparently from what Ellen has said, the information on the predators in the MRFSS data only goes back to 1981 for all three.

MR. FREEMAN: Well, they've been collecting MRFSS data since '60, '64.

DR. JOHN MERRINER: MRFSS didn't begin until the '80's, '78 first preliminary run. MRFSS data does not go back into the '60s. There were interval

projections of recreational fishing back in the earlier days done in five-year, seven-year type of intervals, but the organized National Marine Fisheries Service organized Marine Recreational Fishing Survey didn't really get cranked up until the late '70s.

And more recently they have gone back and edited, corrected, re-standardized, if you would, or reestimated the population removals, if you would, from recreational fishing back to 1982, I think -- 81-82. So, it did not go back as an organized survey into the '60's, no, sir.

MR. FREEMAN: Well, it would be interesting. Well, the technique was the same. It wasn't called the "MRFSS Survey", but it would be interesting to extend this back in time just to see what the results would be since this is experimental. It may be worth looking at.

DR. CIERI: Perhaps.

CHAIRMAN BORDEN: All right, any other questions for Matt? Could someone on the staff, Lisa, tell me what the status of the age-based bluefish assessment is? Where does that stand?

DR. LISA KLINE: Under the Commission's peer review process, the peer reviews for any species should be updated every five years. Bluefish will trigger next year. It is tentatively on the SARC agenda for peer review, but the Bluefish Management Board will have to have that discussion.

But I would anticipate if it ends up as a high priority in our 2003 action plan, that next year we will look at seeing if we can do an age-based assessment. There is probably still going to be -- I don't think anyone has looked at the bluefish data for the last five years, so there is still going to be a question of whether or not we have the data to support an age-based assessment.

CHAIRMAN BORDEN: Okay, thank you. Any other board questions? Anyone in the audience on this report? If not, we'll move on to the next item, which at the last meeting and the meeting before that of the board, we charged the technical committee with a series of questions. Each time we've come back to a meeting, they've responded to some of those questions. We then have added additional questions, so we're going to get a status report from Ellen on the responses to the board charges.

TC Responses to Board Tasks

MS. COSBY: The technical committee met and we went over each one of the board's directives and composed responses, so what I'm going to do is go through the responses.

The first task was evaluate the extent and severity

of reports of localized depletion of Atlantic menhaden, particularly in Chesapeake Bay and adjacent ocean waters. When the menhaden stock is overfished, the spawning stock will erode leading to a drop in recruitment. When there are environmental problems, recruitment declines and low survival rates occur.

The current assessment suggests improved spawning stock biomass but juvenile indices indicate poor recruitment which seems to be largely centered in the Chesapeake Bay region. Compared to historical estimates of the menhaden population structure, these results suggest this is only the second time in almost 50 years that recruitment was very low at a high level of SSB. This situation is indicative of environmental problems and not overfishing.

The observed decline in recruitment may be attributable to lower population carrying capacity. At a relatively low carrying capacity, moderate to high levels of SSB will not necessarily produce strong recruitment. Another potential cause of decreased recruitment may be low survival. If this is the case, increased monitoring is necessary. One possible avenue for an exploration would be to evaluate harvest rates in the Chesapeake Bay and compare it to coastwide fishing mortality.

Chesapeake Bay represents a small portion of the stock's spatial range, although catches within the bay are a substantial proportion of the coastwide landings; approximately 40 to 45 percent of reduction landings by weight and about another 5 percent of bait landings by weight, 45 to 50 percent of the coastwide total. Chesapeake Bay is also an important source of recruitment for the menhaden population. As such, influence of fishing activities and recruitment dynamics in Chesapeake Bay on overall stock dynamics and assessment analysis may be worth evaluating. However, such an evaluation would be difficult to perform.

A major assumption of all population models such as the VPAs is that the data represent a single stock. Hence, application of VPA to a portion of a migratory stock violates this assumption. Other methods are available for calculating population parameters. The data that are currently available do not allow for estimating Chesapeake Bay fishing mortality without information on migration rates. Currently there are no data available for estimating migration of menhaden into and out of the Chesapeake Bay.

There are numerous factors that could potentially cause local depletion. Concentrated fishing in a localized area such as Chesapeake Bay; environmental factors; parasites, disease, and various other effects are possible triggers for localized depletion of various scales. As such, it is necessary to define depletion in a

temporal and spacial context as well as the level of magnitude.

CHAIRMAN BORDEN: All right, it is my intent to take questions after each one of these. And I think for future reference, Ellen, I would refer everyone to the written report you have in your documentation, and I would just ask, Ellen, just to make some summary comments and then we'll take the questions. So, questions on Task 1? Dave Pierce.

DR. PIERCE: Ellen, from what you said and from what I've read, I think that the technical committee was unable to determine if there was localized depletion of Atlantic menhaden in the Chesapeake Bay, especially, so therefore you were not able to evaluate the extent and severity of the reports; is my understanding correct?

MS. COSBY: The committee talked about what exactly was meant by "localized"; I mean, localized in one particular stream, localized in one river, localized in the Chesapeake Bay?

We determined that maybe the board meant localized in the Chesapeake Bay rather than just a particular stream so that was the discussion about trying to decide whether they could track fishing mortality in the Chesapeake Bay, and it was determined that it wasn't possible at this time.

CHAIRMAN BORDEN: Any other questions on Task 1? Yes, sir.

MR. SHERMAN BAYNARD: Sherman Baynard, proxy for Senator Colburn. I asked the question at the previous board meeting that the technical committee has responded to, and I want to thank them for their effort to respond.

I have a couple questions, and one would be has the committee requested an increase in monitoring in your research request? The other item of note would simply be that the 2001 figure for percentages of harvest in the Chesapeake Bay from the reduction industry would be 55 percent, I believe. The committee also states that other methods are available but would need migration information from the Chesapeake Bay. Is there a method or opportunity to get that information or is the committee going to request that?

If not, has the committee sought input from any of the local jurisdictions, DNR or VMRC, to see if they or any of the academic institutions such as VIMS or University of Maryland might have information that would assist you in that question?

The question was for the Chesapeake Bay, not a specific stream, et cetera. It was for the Chesapeake Bay, itself. Also, I read in the report, you questioned the definition of "depletion" itself. I, myself, don't have a verbal explanation of "depletion". I can tell you from what experiences I see and what reports are being given

by the agencies that manage the fisheries, we have reduced length and weight by age for striped bass in the Chesapeake Bay from historic information to current. We have verified reports of poor nutritional health of a large percent of striped bass in the Chesapeake Bay. We have reports that now have been presented indicating that the menhaden diet has been reduced from past history to current.

And it's these type of items especially that focus around the striped bass within the Chesapeake Bay that brings me to question whether we're having localized depletion. So, that was my effort, and hopefully we could see if there is some type of model that someone else has worked on that might be able to assist the technical committee by simply asking those agencies, et cetera, that I have mentioned.

CHAIRMAN BORDEN: Ellen, I think you have about four questions there all linked together. The first one is on the research needs.

MS. COSBY: As far as Virginia monitoring the migration of the menhaden in and out of the Chesapeake Bay, I don't think there's any funds available to do that.

I'm not familiar with the other type of models. That would be something that the committee will have to look into. I think Maryland DNR is doing some work with the feeding studies that you were talking about, also maybe VIMS. They were doing work with some of the disease problems. I don't think anyone is doing any work on population estimate studies, per se.

CHAIRMAN BORDEN: Any of the state agencies care to follow up on the question? Do you have any information that could put us in a position to respond to that question? No. Okay. I'm not sure that all of your questions -- because you did ask four at last count -- I'm not sure all of those have been answered. But, Ellen can certainly go back and look at the available information and try to formalize responses to those. Pat.

MR. AUGUSTINE: Thank you, Mr. Chairman. I was looking at this one publication here, "Analyses on the Status of the Atlantic Menhaden Stock", and over on Page 30, under 6.2, you talk about the Mid-Atlantic states and Chesapeake Bay and you refer to Maryland DNR. I won't read the whole thing, but you go on to say that among other "species, juvenile Atlantic menhaden catch-per-unit effort", et cetera, "have been made available. A general linear model" and so on and so on and so on "was used to develop an index".

But further on, if you go to the next page, it talks about "correlations among these juvenile abundance indices and with lagged recruits to age-1 menhaden based on Murphy VPA were performed. "Both the Maryland and coastwide indices were highly correlated with lagged recruits to age 1. Both the Maryland and

the coastwide indices were statistically significant." It was somewhat less but still a significant correlation with the Rhode Island index or whatever. "Only marginally significant correlations were found for both Virginia and Connecticut". Does that mean that this is not -- this does not relate to what you said about there not being enough information or that the population was overfished or that there are other reasons why we didn't have --

MS. COSBY: I believe you're talking --

MR. AUGUSTINE: Am I apples and oranges or can one be correlated to the other?

MS. COSBY: Yes, I think that you're talking about the juvenile indices there?

MR. AUGUSTINE: Yes.

MS. COSBY: Okay. And then you're relating that to --

MR. AUGUSTINE: I related that back to the report you were making about that there was a certain amount of inability by the technical committee under Task 1 you were asked to perform to determine whether or not it was overfished or whether the lack of fish in the Chesapeake was due to other purposes other than overfishing. That could have been environmental conditions and that. I'm just trying to see whether there is a correlation. I may be out of water on this thing, but it seemed to me that 6.2 relates pretty closely to what we're asking for in Task 1. I just wanted to know if those went together or am I out of sync on that.

MS. COSBY: I think that we do have the information on the juvenile indices. That was put together. But as far as the migratory pattern of the stock in and out of the bay, I don't believe that really can fit.

CHAIRMAN BORDEN: Any other questions on Task 1? If not, Task 2, Ellen.

MS. COSBY: Next was to evaluate the impacts on the stock assessment, biological reference points and population estimates of the selectivity of bait fisheries such as the selection of larger fish in the bait fisheries versus the selectivity of the reduction fishery as currently prosecuted. The committee discussed this and talked about the recent analyses and suggests selectivity has not changed appreciatively, nor have the historical percentiles of Full F changed significantly. This was talking about the F benchmarks, not having to change the F benchmarks.

However, with the perceived historical spawning stock biomass, the SSB has increased significantly as a result of adding the bait catch-at-age to the reduction catch-at-age matrix. With the additional biomass removed by the bait fishery, this implies a higher abundance than when only the reduction data were used

in the analysis. Because the SSB estimates have increased, the SSB reference points currently in Amendment I should increase. I have gone through this a little bit previously so do we have any other questions with this?

CHAIRMAN BORDEN: All right, questions on Task 2? Anyone in the audience? You're going to have to go to the mike, Jim.

MR. PRICE: I'd like to ask a question about Task 1, actually, trying to look at data to determine if there's depletions in the bay. I think you could look at catch-per-unit effort data from the Maryland poundnet landings data. I worked it up myself. And there are other places you can easily, I think, get some information to answer the question. I don't think Virginia has it on catch-per-unit effort but I just wanted to offer that. Thanks.

MS. COSBY: Okay, thank you.

CHAIRMAN BORDEN: Thank you. Any other questions, Task 2? Then let's move on to Task 3.

MS. COSBY: Given the closeness of the proposed fishing mortality reference points with the F-target 0.9 and the threshold 1.1, how precise is the estimate of current Fs in the stock assessment? Should the target and threshold be further apart in order to avoid exceeding both before it becomes obvious that there is a problem with the stock? Are the F-target and F-threshold significantly different?

Since we recommended not to change the F reference points, this question becomes moot. However, it is difficult to estimate uncertainty in the terminal F estimate using current methodology. The difference of 0.2 would certainly be of concern relative to detecting a real difference. So with the F points in Amendment I already approved, then this question doesn't have any problem.

CHAIRMAN BORDEN: All right, questions for Ellen? Just to highlight, this was an issue that a number of Commissioners spoke to at the last meeting, and they were doing it in the context of really is this a conservative enough strategy so that we will be able to detect differences between these two numbers. Questions on this point? No questions. Ellen, let's move right on to Task 4. Bruce.

MR. FREEMAN: The question was asked but I don't see the answer. I mean, the difference between 0.9 and 1.1 is fairly close.

MS. COSBY: Well, we don't recommend using those numbers. That was initially last year that we proposed another change.

MR. FREEMAN: Right.

MS. COSBY: But since they've reevaluated the data, they discovered that the numbers that are in -- the

threshold and the target that are in Amendment I are just fine and that we don't recommend changing them for the F values.

CHAIRMAN BORDEN: Anyone else? If not, Task 4. Just so everyone knows, if I don't see a hand go up, I'm going to keep moving along here. Task 4.

MS. COSBY: Compare the age zero harvest versus the age zero population over time, including a comparison of the percent age zero in the overall harvest. Evaluate any patterns of age zero harvest in relation to reports of localized depletion.

Using this table, we compared the harvest of age zero menhaden to both total catch and estimated age zero population which revealed no temporal trend. The harvest of age zero menhaden compared to the total range from 2 to 28 percent. Although the harvest of age zero menhaden compared to the estimated age zero population size range from 1 to 15 percent, it must be noted that the estimation of the age zero population size is considerably underestimated because of the assumption of constant natural mortality across all ages. When increased mortality on the youngest ages is modeled in the multispecies approach, considerably higher estimates of the age zero population is obtained.

In turn, estimates of exploitation rates on age zero menhaden by the fisheries is orders of magnitude lower than the effect of predation. Therefore, the estimates of age zero population size and exploitation rates from Vaughan et al, are useful only for establishing trends and not for absolute values. The analysis suggests that harvest of age zero menhaden seems more correlated with year-class strength and fair fall weather than direct targeting by the industry.

CHAIRMAN BORDEN: Questions on Task 4? Anyone in the audience? If not, Task 5.

MS. COSBY: Provide an explanation of how the reduction fishery has voluntarily reduced their harvest of age zero menhaden. They have always landed some age zero during the course of the fishing season; however, the small fish yield low oil and are less valuable.

The age zeros are caught during the fall fishery off of the Virginia and North Carolina Capes. In late August and September, some age zeros leave the Chesapeake Bay and vessels may make a few sets on these. Generally, the sets on the fish less than age two are rare in New Jersey waters and farther north.

CHAIRMAN BORDEN: Any questions on this task? Eric.

MR. ERIC SCHWAAB: I'm just a little curious about this one statement in the second paragraph that talks about the Reedville boats targeting or making a few sets on these age zero fish. That seems to certainly

not be consistent with what we've been told over the years as to their specific attempts to avoid age zeros. I certainly understand the accidental catch that is referred to later in this explanation.

I'm just wondering where that statement came from. And it talks about "in August and September"; in that still going on or is this some anecdotal reference from years past?

MS. COSBY: I think it's talking about historically in the past this happened.

MR. SCHWAAB: Can you just elaborate. You say "he" I mean, where?

MS. COSBY: Joe Smith put this information together out of Beaufort.

MR. SCHWAAB: Okay.

MS. COSBY: He has all the information about historical sets and the captain's daily fishing reports. He put this information together for the response to this question.

CHAIRMAN BORDEN: Pat Augustine.

MR. AUGUSTINE: Thank you, Mr. Chairman. The response doesn't really answer the question. How has the reduction fishery voluntarily reduced their harvest? How do they voluntarily do it? We go on to say that these types of sets are rare but these fish sometimes show up. It doesn't mean they've done anything to avoid them. I guess I'm looking for something a little more concrete, and maybe that's all we're going to get.

CHAIRMAN BORDEN: Let me offer an opportunity to somebody from the menhaden industry to try to answer that question specifically. This has come up at least two meetings that I've attended. I would provide you with my own opinion of what that response is, but I think it's better if it comes directly from the industry. So, does a representative of the menhaden industry want to speak to this point? Yes, sir.

MR. LYLE JETT: Lyle Jett with Omega Protein. The effort that the reduction industry has put forth is to use a larger mesh net in order to target the larger fish and not the age zeros.

CHAIRMAN BORDEN: Pat, follow up.

MR. AUGUSTINE: Yes, follow up. Could we somehow doctor up this document to include that? That is basically the answer we were looking for. I think it clearly states what you're doing. It is an overt effort on your part to stay away from those, but the document doesn't say that. Thank you for the clarification.

MS. COSBY: There is information beyond after this table. I didn't go through that, but there's further information after the table and that does get explained a little bit more.

CHAIRMAN BORDEN: That is included in the

document. I've got Tom Fote and then Eric again.

MR. FOTE: I think that's true of the Virginia boats, but it's not necessarily true of the North Carolina boats. Is that so?

MR. JETT: I can't speak to that; I'm not sure of that.

CHAIRMAN BORDEN: Jule, would you like to provide a response to that?

MR. JULE WHEATLY: Jule Wheatly with Beaufort Fisheries. I think I've answered it about two dozen times, but I'll try it one more time.

We have to use a smaller marsh net in the fall of the year because we targeted larger class fish because the yields are better -- the fish yields are better and so are the oil yields. The reason we have to use a smaller marsh net, a lot of times the fish are mixed up. And we fish, like I said, in the fall of the year around Hatteras and Cape Lookout, and they are right bad bodies of water that time of year. That's the reason they are called the "Graveyard of the Atlantic."

Now, if we get marshed up real bad, that means the fish get stuck in every marsh, then when we start retrieving the nets back in the purse boats -- the purse boats are around 38 to 40 feet -- and once you take in about 200 or 300 yards of net, the boats become very unseaworthy. And usually that time of year it's rough weather and we have to use a smaller marsh net or we're going to lose purse boats and drown men. But, you can look at the record, the data, and it will show that we're not catching peanuts in North Carolina.

We don't care for them; we don't want them. Also, the peanuts are usually real close in to shore. Our nets will sand up and we'll spill them on the beach, and, you know, that's a bad situation there, also.

So to answer your question, we've targeted large fish, but there are certain types of year that the -- see, there's also in these schools, they get mixed up. They're not just all one-year old, two-year old, three-year old. When they come out of Chesapeake Bay or start migrating down, then they get mixed up. A lot of times you'll have your larger fish on the bottom and your smaller fish on the top. So, folks, I'm just telling you, it's tough fishing conditions. And it's very dangerous, very dangerous.

CHAIRMAN BORDEN: All right, thank you, Jule. Eric, follow up.

MR. SCHWAAB: Well, I just thought we could get some clarification for the record perhaps from industry representation here regarding the point that I raised. And if we can clarify that in fact this practice that's referenced here relating to the targeting specifically of these age zeros is no longer occurring, that would be helpful to me both here for the record as

well as for the purposes of this document.

CHAIRMAN BORDEN: All right, Tom Fote.

MR. FOTE: Yes, I guess the problem arises that when we looked at the figures for I think it was either 2000 or 2001, there seemed to be a large catch of year zero fish. And when we looked at that catch, a small percentage came out of a lot of boats from Virginia. They caught a very small percentage of that, but a majority of the catch came out of North Carolina, and I think that's what we looked at. And if we were avoiding that most of the catch came out of North Carolina, that was a concern of ours.

If only two boats are catching 14 percent when the whole catch was 17 percent on small zero fish -- I don't remember the numbers exactly -- and only like 3 percent came out of Virginia with all the boats there and 14 percent came out of North Carolina, then in my estimation, just as an observer looking at figures, said they might have been targeting the smaller fish. Maybe I was wrong.

CHAIRMAN BORDEN: Jack Travelstead.

MR. JACK TRAVELSTEAD: I think part of the answer to the question is on Page 12 in this document we've been going through. Table 5 shows the catch in numbers at age for menhaden, and you'll see 2000 and 2001 are very low values for age zeros. It was the 1999 number that was higher than usual. But even the years prior to that, they were quite low. I think that tends to support what you'll find in writing as the technical committee's answer to the question that the industry apparently is no longer targeting the age zeros.

CHAIRMAN BORDEN: Tom, then we're going to move on.

MR. FOTE: Yes, Jack, I'll just follow up on that. It was also the only year that there was a lot of small zeros going along the whole coast. If I remember, '99 is the year we had the huge influx of small fish along the coast. And before that, there wasn't a lot of small fish in '98 and '97, '96, so there wasn't the opportunity.

CHAIRMAN BORDEN: Jack, do you want to respond to that?

MR. TRAVELSTEAD: No.

CHAIRMAN BORDEN: Okay. Anything else on this? If not, Task 6, please, Ellen.

MS. COSBY: Determine what level fishing mortality on age zero menhaden or the percent harvest of the age zero population which would be problematic to the overall population and on a local or regional level.

The technical committee talked about this in relation to the multispecies model and hopes to use that multispecies model in the future. Matt touched on it when he talked about being able to use it for such short

projections, such projections in the short term, three to five years. The amount of age zero harvest to bring SSB from current levels to the threshold would be unrealistic, however. Projections for longer than three to five years are not feasible at this time due to the short generation time of the menhaden.

Those longer-term projections can be run but the uncertainty associated with it makes the result nearly useless. In any case, it would seem that natural mortality or predation on age zero menhaden far exceeds by at least an order of magnitude the mortality due to fishing.

CHAIRMAN BORDEN: All right, questions for Ellen on this task? No hands up. Any questions from members of the audience? No. All right, next issue, Task 7.

MS. COSBY: Explain why the coastwide landings decreased by a third when the age zero population increased by a factor of four during the 1999-2000 year.

The landings from 1999 to 2000 were reduced by 35 percent in the update. According to the most updated stock assessment, estimated population of age zeros 99 to 2000 have fallen 61 percent in this year's report. This is the exact opposite of the numbers given in the 2001 stock assessment where age zeros in 2000 were 6,030 in millions of fish. The 2002 stock assessment estimated the 2000 age zero population at 728 million fish.

The reason for this change is that the estimate of fishing mortality and population sizes for younger menhaden is zero in one, and the terminal year is very uncertain and subject to revision as the new information is presented. So they're a little bit more accurate now.

CHAIRMAN BORDEN: Questions for Ellen on this task? Anyone in the audience? I would just note that Task 8 has been referred to the Committee on Economics and Social Sciences. So, any other questions for Ellen?

MS. COSBY: There's more.

CHAIRMAN BORDEN: Oh, I missed a few. Task 9. And, once again, Ellen, I'm going to urge you, because we do have it in writing, to just summarize the response on Task 9.

MS. COSBY: Okay. Task 9 is more like a thesis question. Investigate the environmental factors that lead to boom-and-bust cycles in the menhaden population, what factors were in place during these periods. Are there specific changes in the management program that could be implemented to alleviate the influences, the environmental factors? Are the cycles attributable to overfishing or compounded by overfishing on a local or coastwide level? Do the environmental factors affect the population at its

northern or southern extremes more versus the coastwide population? Is there any means to evaluate the effects on certain portions of the population range? I don't know how you want me to summarize this.

CHAIRMAN BORDEN: Well, actually, let me try this. We've got this in writing. Let me just ask are there any questions on the response that we got? No questions? I think we're going to move on to the next one. Task 10.

MS. COSBY: Given the current level of fishing mortality on young fish ages zero to two, are there enough fish left to recruit to the population to maintain a healthy population in both numbers and age structure?

Since the SSB currently is well above the target either the Amendment I value or the new proposed value, then recent levels of fishing mortality F on young, age zero to two menhaden, have allowed sufficient survival to SSB and SSB is at a very high level right now.

CHAIRMAN BORDEN: Any questions on this one? Anyone in the audience? All right, let's move on to the next one.

MS. COSBY: Number 11 is to provide a historical overview of the menhaden catch by area, include the geographical distribution or definition of the areas, the means by which the areas were chosen and the landings by each area over time.

This is another question that Joe Smith put the historical data to good use and gave an extensive response to this question. These are the breakdown of the areas: the South Atlantic area, the Chesapeake Bay area, the Middle Atlantic area, the North Atlantic area and then the fifth area called the "North Carolina fall fishery." I guess I could take questions on anything else.

CHAIRMAN BORDEN: Yes, I suggest we follow the same format. You've got a very detailed response to this. Does anyone have a question on that particular task? No hands up. Anyone in the audience? If not, let's move on to the next task.

MS. COSBY: Okay, the final one is "identify what a natural or optimal age structure of the menhaden population should be." Would it be useful or beneficial to attempt to achieve that structure and how could that be done. They talk about using the multispecies model to answer this. But it's not yet available.

CHAIRMAN BORDEN: All right, questions on this task? This task really can't be responded to until the multispecies model is completed which, obviously, needs additional work as was outlined by the previous speaker. Any questions?

If not, I think that concludes the tasking and I'd like to thank the members of the committee. Having attended the meeting where they put this together, I

thought they had a fairly efficient way of doing it where at the meeting they formed a whole series of subcommittees and parceled out the work and went at it. So I'd like to express my appreciation to Ellen and the members of the committee. Thank you very much.

In terms of the next item, the next item on the agenda is a report of the advisory panel report, Bill Windley. Oh, excuse me, David.

DR. PIERCE: Yes, Mr. Chairman, when on the agenda would you like to address the specific recommendations of the technical committee regarding the SSB threshold and target?

CHAIRMAN BORDEN: Let's take that up under "other business." The next report is the advisory panel report, Bill Windley.

ADVISORY PANEL REPORT

MR. BILL WINDLEY: I'm going to attempt to summarize, as David asked Ellen to do. The only element of panel business is I'd like to announce that William Hubbard of Rye, New York, will be the vice-chair of the AP.

We met as a group with the technical committee in the morning of the day of our meeting, and the technical committee gave its report. It consisted of the multispecies management report, stock assessment report and their responses to the management board tasks. I'm not going to repeat things that you've heard that there's no change in. I'm only going to talk about the things that the AP has specific comment on.

As regards to the multispecies management model, the multispecies management model holds promise of being an effective tool when used in conjunction with other proven and accepted models. While the AP agrees that much progress has been made in the past year, we will caution that this model is not ready to be used as a stand-alone tool. Before it can be used with confidence, it must be peer reviewed. We feel very strongly that the Management Board should continue to support the multispecies initiative. The AP is confident that at some time in the very near future it will be able to be used as an effective management tool.

Little data is available on the consumption and evacuation of species other than striped bass. While some data is available on bluefish and grey trout, data on other species is sketchy at best. Results of model runs which have been done with species where data is available are compelling. We would urge the Management Board to look at ways of gathering sufficient amounts of data on a wide range of fisheries. We strongly support the technical committee's recommendation to the Management Board that existing

age-based bluefish assessments be updated to support a multispecies model run through the current year.

The advisory panel is in full support of the technical committee's endorsement of the multispecies model found in Section 2.1 of the committee's report.

Regards the stock assessment report, the factor that caused the greatest concern in the 2002 stock assessment report was poor recruitment, predicted poor recruitment to age one. Fishing effort and mortality were found to be below the 25th percentile in 2001 while spawning stock biomass was above the 75th percentile. Nonetheless, recruitment to age one was well below the 25th percentile. 1996, 1998 and 2000 were somewhat below the 25th percentile level of 2.1 billion recruits to age one, and 2000 is currently estimated at 0.5 billion recruits to age one, which is about a one-fourth. While we're aware that terminal year estimates are prone to inaccuracy, this trend is of great concern to the panel.

And I might remind you that when Bruce Freeman earlier spoke about these things going up in ensuing years, in 2000 and 2001 they, in fact, these projections in fact went down by 60 percent. That was the reason the technical committee didn't need to make the changes that it originally thought. So these things don't have to go up. If in fact 0.5 billion is anywhere near an accurate number or four times 0.5 billion, it just gets us to the lower quartile and does not get us where we want to be with recruitment.

So essentially what we're trying to say is that, okay, we've got plenty of spawning stock biomass and we've got low effort and low harvest, and those are the things we look at. The problem is, though, with no recruitment, we don't have fish. I think we've got to adjust our thinking here. If we're going to use those two elements as criterion and forget about whether or not those fish live, we're just a little off base with that.

As far as the technical committee responses to the Management Board tasks, they gave us their responses one at a time and went over them with us one at a time and explained the things that we needed to hear to be able to have our own responses. I'm only going to mention or elaborate on the ones where we have responses. It's not appropriate, due to the technical nature of some of these tasks, for the AP to have a response.

Task 1 was evaluate the extent and severity of reports of localized depletion, et cetera. The advisory panel requested that this report include a clear and uncompromising response to the question presented in this task. There was a unanimous resolution on the part of our members to have the AP chairman convey to the Management Board our very serious concerns related to

this issue. The majority of the panel agrees that they have had more public input on this point than on all other menhaden issues combined.

That being said, here is our response and position. As previously noted, fishing effort and mortality are shown to be moderate in 2001 while spawning stock biomass was found to be at healthy levels. Nonetheless, recruitment to age one is projected to be the third lowest ever recorded. Survival of the 2001 year class is currently estimated at 0.5 billion recruits, as said, to age one. Hopefully this number will be adjusted upward in 2003, but that certainly is not a given.

Recruitment failures combined with the fact that the 2001 harvest of Atlantic menhaden was up by 40 percent over 2000. Chesapeake fisheries accounted for 50 percent of the total 2001 catch by weight and 70 percent of the catch by numbers of fish. The exploitation rates from the stock assessment are based on total population levels over the entire geographic range, i.e. the whole coast. An inordinate portion of the harvest comes from a relatively small portion of that geographic range.

After discussing with the technical committee the possibility of determining local area exploitation rates, we concluded that existing approaches would be of little use in answering the questions posed by Task 1. We do, however, feel that an approach must be found to quantify regional exploitation levels. The advisory panel asks the Management Board to task the Menhaden Technical Committee with determining the feasibility of developing a model, possibly based on existing models, to estimate local area exploitation of Atlantic menhaden in the Chesapeake Bay. Said model presumably to have utility in evaluating the effects of concentrated local exploitation on other species in this and other areas.

I had a response to two, but really Ellen has handled that. That's the reference points. Three, the closeness of the reference points, that's probably moot since they're no longer suggesting that we close them down to 0.9 and 1.1. There, again, I think this is a technical issue that's best handled by the technical committee.

Compare the age zero harvest versus the age zero population over time. Historically, wide variation has existed in the relative numbers of age zero fish in the catch data from year to year. Though the technical committee sees no significant trend overall, most recent years have shown a substantial reduction in the percentage of age zero fish in the harvest, i.e. less than 5 percent of the Atlantic coastal catch in 2001.

The technical committee makes the following assertions. When increased mortality on the youngest

ages is modeled with the multispecies approach, considerably higher estimates of the age zero population are obtained. In turn, estimates of exploitation on age zero menhaden by the fishery is orders of magnitude lower than the effect of predation. Though the AP has previously voiced its concern with making management assumptions based on the multispecies model prior to peer review, the existing orders of magnitude associated with the age zero population estimate do give a significant statistical cushion to the age zero population projections.

The panel discussed the possibility of serious distortion. This is a point brought up by one of the industry members, and I think it's one that I want to give it a little weight. It's a little bit different than the rest of this topic. But the panel discussed the possibility of serious distortion in the age zero and age one projections. The past few years' catches have produced markedly reduced numbers of age zero and age one fish, thus significantly reducing the population projections based on those catches.

Current models make assumption on population levels at a given age based on historic composition and catches. The models assume that fish will be harvested in proportions that reflect their numbers. If in fact we are avoiding smaller fish as some suggest, the conclusions drawn from recent data most probably could be seriously flawed. The panel is not ready to walk away from this issue as yet but advises comparing the model projections, including the multispecies model, with observed data over the next few years.

Task 5 involves what the industry has done to avoid catching age zero menhaden. The factors affecting reduced catches of age zeros enumerated upon in the technical committee report are certainly a plausible scenario for producing the reduced catch at age zero that has been observed in the past few years. In discussions in the advisory panel meetings, we have heard many of these explanations expounded upon by industry representatives.

We're confident that there are positive results associated with factors mentioned such as aircraft identification of small fish by tail whip; age zeros avoided because they're not profitable due to low oil content; less competition amongst fishers allowing the reduction boats to target the fish they prefer and others. It would seem that all of these things have resulted in cutting back on age zero harvest. Practically, however, the only tangible measure that the reduction industry has taken to avoid age zero catch is the implementation of larger mesh nets by the Virginia boats.

Obviously, this is an effective measure in avoiding age zero. The results of some of the other measures

may or may not in fact be of significance. It is also possible that other factors such as low recruitment to age one have created shortages in younger fish. The panel applauds any measures taken on the part of the industry to avoid the younger fish. We do, however, feel that continued close monitoring of age zero and age one catch percentage is essential.

Tasks 6, 7, 8, and 9 are technical issues that we didn't feel comfortable taking a position on. Ten, given the current level of fishing mortality on young fish, are there enough fish left to recruit the population to maintain a healthy population in both number and age structure?

Certainly this is a troubling question. When we look again at the compelling data from the past few years, we found basis for serious concern. The factor that caused the AP the greatest concern, again, was poor recruitment to age one. I won't repeat the statistics again. We have experienced totally marginal acceptable levels of recruitment in only two years since 1994. See Figure 6, 5.2, the technical committee report. Survival of the 2001 year class is currently estimated at 0.5 billion recruits to age one. Were this projection to prove accurate, the resulting effects to the total population would be disastrous.

While we are aware that terminal year estimates are prone to inaccuracy, this trend is of great concern. Environmental factors blamed by many members of the AP for poor recruitment are little improved in the past 30 years in spite of millions of dollars of expenditures and a colossal effort on the part of citizens and businesses alike.

The panel is greatly concerned that with model variables all in line with successful propagation, we're not producing menhaden at a rate of survival that is consistent with a healthy population. Tasks 11 and 12 we defer, again, to the technical committee. Thank you.

CHAIRMAN BORDEN: All right, Bill has provided a very detailed report. He's got one recommendation which I think we should take up after we have questions. So, questions for Bill on the report. Any questions? Anyone in the audience, questions? Boy, that's a thorough report. Bill, have you got a thing.

MR. WILLIAM GOLDSBOROUGH: Not a question but a comment when you're ready for it.

CHAIRMAN BORDEN: A comment, then, certainly.

MR. GOLDSBOROUGH: Thank you, Mr. Chairman. I attended the AP and technical committee meeting last month, as you know, as well. I want to say that I think the AP did a fabulous job of deliberating on these points, and I was struck by the diversity of the people around the table and the cooperation that was

exhibited. I also want to harken back to the previous discussion, if I may, of the same nature and note, as you did, that the technical committee had a good process for dealing with all those tasks at the meeting.

However, I was struck by the fact that occurred five months after the last board meeting where we came up with those tasks. And I think we heard around the table that there may be some other maybe less traditional pieces of information -- Jim Price mentioned one -- or analyses that might be utilized to provide a little bit more information and to describe different responses or additional responses to these tasks that might help the board, and recognizing that a lot of those tasks required further development of the multispecies model.

But taking all that, it seems to me that the tasks pretty much remain on the table, that a lot of them are still question marks for this board, and that fleshing them out further would help this board in its deliberations in the future.

So I would just like to make the request that we consider these tasks still on the table and still as guidance, of sorts, for the technical committee, the Multispecies Subcommittee, what have you, the AP. I think we will benefit from having further insights as further information and analyses come along to those tasks.

CHAIRMAN BORDEN: Okay. Thanks. Yes, Dennis Abbott.

MR. DENNIS ABBOTT: Yes, just for the record, the vice chairman of the advisory board, Bill Hubbard, is from New Hampshire and not New York.

CHAIRMAN BORDEN: Thank you.

MR. WINDLEY: Thank you. It says "New Hampshire" here. That was some kind of -- yes.

MR. GORDON D. COLVIN: I can't tell you what a relief that is to the folks in New York. (Laughter)

CHAIRMAN BORDEN: Everything originates in New York.

MR. ABBOTT: I don't want Bill to think we were sleeping at this meeting. (Laughter)

MR. WINDLEY: I worked so hard on all those numbers, I can't believe I blew "New Hampshire."

CHAIRMAN BORDEN: Well, just to follow up on Bill's suggestion, there are a number of ongoing issues here, and I think it's certainly appropriate to have the technical committee review those at the appropriate time and place and continue to develop recommendations that address board questions. Do I hear any objections to that? If not, they are so charged.

Now, the advisory committee, AP, did give us a specific recommendation that related to Chesapeake Bay, which is this recommendation on asking the technical committee to review the issue of area

depletion specifically within Chesapeake Bay and let's, I think, take a few comments on that specific recommendation. If we don't have some hands up, I'm just going to simply ask do I hear objections to tasking them? So, any comments? Any objections to asking the committee? Then the committee stands so charged with that as a task, then.

Okay, any further action on the advisory committee? Thank you very much, Bill, a very comprehensive report. Plan Review Team, this is just a status report, Joe. Yes, Jack.

MR. TRAVELSTEAD: Could I go back to the last item just very briefly on the charge to the technical committee on this model to look at local area depletion. The charge from the advisory panel was to do this specifically for Chesapeake Bay.

I would only ask that the technical committee, if they are indeed capable of coming up with such a model, make it so that it is potentially applicable to any area that might be locally depleted and not just the Chesapeake Bay. We may find situations occurring in the future where we need to look at other areas; and if we have one model that can do all that, I think we would be better off.

CHAIRMAN BORDEN: Okay, any comments on that thought? No objection? All right. Thanks, Jack. All right, Joe.

PLAN REVIEW TEAM REPORT

DR. DESFOSSE: Okay, the Plan Review Team did not have a chance to finalize the 2002 FMP review, and also they need to have a conference call to evaluate or review the compliance reports for 2001. I would note there are a number of states that have not furnished their compliance reports. The deadline was July 1st. I'll make a short announcement here. It's Massachusetts, Rhode Island, Connecticut, New York, Delaware, and -- pardon me if I'm wrong, but I've got Maryland on the list, but I think I did see a draft report from Maryland, but I don't have it with me. I'll have to go back and check. There is only one compliance criteria in there and it concerns reporting requirements for bait fisheries.

CHAIRMAN BORDEN: I mean, there's one particular state that is very problematic. There will be a public flogging of all state directors immediately following the meeting. Please try to get those reports in, and that includes the state director from Rhode Island. Thank you.

The next item is the approval of the Virginia Advisory Panel nomination. I don't know whether Jack wants to handle this. Jack.

AP NOMINATION

MR. TRAVELSTEAD: Thank you. Mr. Jett is sitting to my right. He replaces Steve Jones at the one remaining reduction plant in Virginia. Steve has moved on to other things. Mr. Jett has I guess over 20 years' experience in this fishery and we'd like to see that he replaces Mr. Jones, so I would **move approval of his nomination, Mr. Chairman.**

CHAIRMAN BORDEN: Any questions? If no questions for Jack, any objections to approving the recommendation as submitted? Welcome to the committee. Congratulations. All right, the next item is other business. Dr. Pierce raised an issue.

OTHER BUSINESS

DR. PIERCE: Well, the technical committee has made a very strong recommendation regarding the SSB threshold and target values and I'm uncertain as to how we should now proceed. We have a process, of course, that involves the Plan Review Team. Should we have the Plan Review Team give us a recommendation regarding that specific recommendation or should we move forward now as a board acting on technical committee advice?

CHAIRMAN BORDEN: Do we have a staff recommendation specifically on this issue?

DR. DESFOSSE: I don't have a specific staff recommendation. I forgot about having the recommendation from the Plan Review Team. That would probably be the most appropriate direction, to have them, as part of the compliance report review and the 2002 FMP review, make that recommendation to the Management Board whether or not to go forward with an addendum to change the reference points.

I'll also point out that you've requested some information, some social and economic information from the Commission's Committee on Economics and Social Sciences. They're not meeting until tomorrow. I've discussed with Joe Moran, who is the staff person, what the process is going to be. He thinks that there may be some questions coming back to the Management Board. If they're simple questions, our recommendation was to go through the board chair and vice chair to have that clarified and then communicate to the Management Board what the status of the CESS report would be in terms of what they plan on doing and providing for the Management Board.

CHAIRMAN BORDEN: All right, David, follow up to that?

DR. PIERCE: Yes, just a follow up with regard to the technical committee recommendation on the SSB

target and threshold. I would say that because we're in such good shape with the SSB, there's no need to rush forward today with action by this board without first waiting for some recommendation from the Plan Review Team. I would suggest that we do that, just give it to the PRT.

CHAIRMAN BORDEN: Any objections to David's suggestion, which is essentially to task the Plan Review Team to incorporate that into its report? Any objection? No objection. All right, thank you, David. Any other business? Tom.

MR. FOTE: I noticed when we did the multispecies model, we talked about bluefish, and we just had a Bluefish Board meeting in Philadelphia. Really, all we do is look at the Monitoring Committee. That's what we've done for the last three years. So I just suggest that if we need a stock assessment on bluefish to basically help for the menhaden model, that we should be sending a letter to the Bluefish Committee and ask the next time they have a meeting, which will probably, if I'm not mistaken, not until next August. So are we going to wait that long?

CHAIRMAN BORDEN: Tom, I'm not sure I quite understand. The recommendation is to send a letter to do what?

MR. FOTE: To basically ask for a stock assessment on bluefish. We've been a number of years before we've done it. I mean, I asked a few questions at the bluefish meeting about the stock and the age and the size going down. I mean, basically we're looking at historical records of 3.9 where we're down to 1.9 as far as the poundage of the fish in 2001. And I'm just worried about the stock assessment, so I think we really need a good stock assessment on bluefish to be done.

CHAIRMAN BORDEN: Okay, Bob, do you want to respond to that before I do?

MR. BEAL: Sure. Yes, Tom, as Lisa Kline mentioned earlier, bluefish and a benchmark assessment is slated to go through a SARC review next year. I think it's December of next year. The technical committee will be gearing up for that. The Management Board may or probably will meet prior to that assessment, beginning to decide if they want to do it next year or if they want to delay it, but I assume since the bluefish assessment hasn't gone through SARC in a number of years, I don't see a reason to delay it right now unless there's no new information that would really change the way the assessment is conducted.

I think there is additional information the last five years that we may be able to roll into a new assessment, potentially an age-based assessment.

CHAIRMAN BORDEN: Yes, to Tom's suggestion, Vince is on the committee that looks at

those priorities; and unless we have objections, he'll take that message to the committee meeting. Any objections to that? If not, you are so charged, Vince. All right, any other business to come before the committee? Joe.

DR. DESFOSSE: You have a technical committee appointment from the state of Rhode Island, Brian Murphy.

CHAIRMAN BORDEN: Yes.

DR. DESFOSSE: It's normal practice for the boards to formalize the makeup of the technical committees, and this is an addition. I also point out that the advisory panel had recommended that other states who were not represented appoint people to the technical committee so that it is a full coastwide committee.

CHAIRMAN BORDEN: Just by way of background, **Brian Murphy is a member of our assessment staff, has an excellent technical background in terms of stock assessments and has been working directly for Mark Gibson and Naji Lazar, so I would strongly recommend him for the slate. Any objections? No objections, he stands approved.** Other business. Any other business? Anyone in the audience? If not, the meeting is adjourned. Thank you.

(Whereupon, the meeting adjourned at 4:10 o'clock, p.m., August 27, 2002.)