

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

Atlantic Sands Hotel  
Rehoboth Beach, Delaware  
October 21, 2008

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## ATTENDANCE

### Board Members

George Lapointe, ME (AA)	Bernard Pankowski, DE, proxy for Sen. Venables (LA)
Terry Stockwell, ME, Adm. Proxy	Tom O'Connell, MD DNR (AA)
Pat White, ME (GA)	Bill Goldsborough, MD (GA)
Rep. Dennis Abbott, NH (LA)	Russell Dize, MD proxy for Sen. R. Colburn (LA)
Doug Grout, NH (AA)	Steve Bowman, VA (AA)
G. Ritchie White, NH (GA)	Jack Travelstead, VA, Adm. Proxy
David Pierce, MA, proxy for Diodati, (AA)	Kyle Schick, VA, proxy for C. Davenport (GA)
William Adler, MA (GA)	Del. Lynwood Lewis, VA (LA)
Vito Calomo, MA, proxy for Rep. Verga (LA)	Mike Johnson, NC, proxy for Rep. Wainwright (LA)
Everett Petronio, RI (LA)	Bill Cole, NC (GA)
Mark Alexander, CT, proxy for David Simpson (AA)	John Frampton, SC (AA)
Brian Culhane, NY, proxy for Sen. Johnson (LA)	Malcolm Rhodes, SC (GA)
James Gilmore, NY (AA)	Robert Boyles, Jr., SC (LA)
Pat Augustine, NY (GA)	John Duren, GA (GA)
Peter Himchak, NJ, proxy for D. Chanda (AA)	Spud Woodward, GA, proxy for S. Shipman (AA)
Erling Berg, NJ (GA)	William Sharp, FL, proxy for G. McRae (AA)
Gilbert Ewing, NJ, proxy for Asm. Fisher (LA)	Steve Meyers, NMFS
Roy Miller, DE, Proxy for P. Emory (AA)	Jaime Geiger, USFWS
Jeff Tinsman, DE, proxy for P. Emory (AA)	A.C. Carpenter, PRFC

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

### Ex-Officio Members

Alexei Sharov, TC Chair

Bill Windley, AP Chair

### Staff

Vince O'Shea  
Robert Beal

Braddock Spear  
Toni Kerns

### Guests

Wilson Laney, USFWS  
Ken Hinman, NCMC  
Trish Murphy, NC DMF  
Linda Mercer, ME DMR  
Brian Hooker, NMFS  
Charles Lynch, NOAA  
Ben Landry, Omega Protein  
Ron Lukens, Omega Protein  
Shaun M. Gehan, Washington, DC  
Janice Plante, Commercial Fisheries News  
Derek Orner, NOAA

Jay Odell, The Nature Conservancy  
Harold Mears, NMFS  
Tom McCloy, NJ DFW  
Dave Ellenton, Cape Seafoods  
Arnold Leo, Baymen's Assn.  
Dan Dugan, DE NREC  
Benson Chiles, Atl. City, NJ  
Pete Jenson, Cambridge, MD  
Drew Minkiewicz, Washington, DC  
William Rice, Sr., Potomac Fisheries  
Dan McKiernan, MA

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Swan Ballroom of the Atlantic Sands Hotel, Rehoboth Beach, Delaware, October 21, 2008, and was called to order at 8:00 o'clock a.m. by Chairman Patten D. White.

### CALL TO ORDER

CHAIRMAN PATTEN D. WHITE: All right, I'd like to get started. You have the agenda before you. We have one addition under other business, AP nomination. You also have in your packet the proceedings from August 20, 2008. Hopefully, you have reviewed that. Does anyone in the audience have any public comment they wish to make at this time that's not on the agenda?

### PUBLIC COMMENT

MR. RON LUKENS: Thank you, Mr. Chairman. I did sign up so I think I'm street legal. My name is Ron Lukens and I'm here with the Omega Protein Corporation. I wanted to speak a little bit about some issues that were raised at the last meeting and that have been discussed extensively in particular with the technical committee proceedings, and that is the ecological role of menhaden.

I just want to take this opportunity to just cover some research points and some information that I thought would be interesting to the board. Much has been said about the ecological role of Atlantic menhaden, and much of what has been said is speculation. For example, there are those who speculate that menhaden are primarily phytoplanktivores and left unfettered would be able to minimize large, frequent and unwanted phytoplankton blooms generally caused by land-based runoff of nitrogen and phosphorous and then would be able to assist in managing nitrogen in the Chesapeake Bay.

This is the so-called water quality issue. I would like to touch on a few points that may help clarify this issue. Current research has found that menhaden primarily feed on zooplankton for their sustenance and not phytoplankton. The research by Friedland shows us that the branchial basket, which is the sieve in the gill chamber which allows the menhaden to filter water is

optimized to retain particles the size of zooplankton with most phytoplankton being too small to be retained.

Studies by Durbin and Durbin support this conclusion, finding that menhaden are omnivorous but rely primarily on zooplankton as food. Finally, a recent study by Smith and Jones concluded that using stable isotope analysis conclude that menhaden are deriving their nutrition primarily from zooplankton.

These finds can be summed up by a statement from Ted Durbin during a menhaden workshop sponsored by Rhode Island Sea Grant in 2007. Dr. Durbin said emphatically you are not going to control nitrogen dynamics in Narragansett Bay by controlling menhaden populations. This would certainly be true also of the Chesapeake Bay, which has a larger nitrogen burden than Narragansett Bay.

It should also be said that research has found that excretion of menhaden is largely ammonia. This ammonia excretion under pristine conditions would encourage the growth of phytoplankton which would provide forage for zooplankton and other planktivores, which would in turn provide forage for juveniles of many species and filter feeders like menhaden.

Under current conditions menhaden excretion of ammonia simply adds nitrogenous material to an already overloaded system. Mr. Chairman, that really concludes my comments. I wanted to take a brief moment to I guess introduce some of these thoughts to folks if they weren't aware of this research. If it's appropriate, I would be glad to try to answer any questions. Thank you, sir.

CHAIRMAN WHITE: Thank you, Ron, very much for that. Do you have your report in written form? We also will have it in the minutes.

MR. LUKENS: I have a printout right here.

CHAIRMAN WHITE: If you could give that to staff, that would be helpful. Is there anyone else in the audience? Bill Adler.

MR. WILLIAM A. ADLER: Did we approve the minutes?

## APPROVAL OF PROCEEDINGS

CHAIRMAN WHITE: With no further public comment, I would for ask for approval of the minutes. Is there any objection to the proceedings from the August 20<sup>th</sup> meeting? Seeing none, the minutes are approved. The technical committee review of the Chesapeake Bay research, Alexei.

## TECHNICAL COMMITTEE REVIEW OF THE CHESAPEAKE BAY RESEARCH

MR. ALEXEI SHAROV: Good morning, ladies and gentlemen. As you may remember, several ago the technical committee, at your request, identified four primary research priorities to address the issue of the potential localized depletion in the Chesapeake Bay. Following the Atlantic Menhaden Workshop that we held several years ago, the technical committee recommended that the following four research priorities should be brought to the attention of the researchers in the area.

They are to determine menhaden abundance in the Chesapeake Bay; to determine estimates of removal of menhaden by predators; investigate the exchange of menhaden between the bay and the coastal system -- in other words, estimate immigration/emigration rates -- and the larval studies determining the recruitment processes into the Chesapeake Bay.

Following this, a number of studies were funded by different organizations, such the National Marine Fisheries Service, Atlantic States Marine Fisheries Commission, the states and other agencies. On the first research priorities at the moment, based on the information available to the technical committee, determine menhaden abundance in the Chesapeake Bay, there are two completed or ongoing studies in the area.

Number one is the LIDAR Survey of menhaden in the Chesapeake Bay. This is the pilot three-year study, which 2008 is the last year of the study, funded by the Atlantic States Marine Fisheries Commission and Maryland DNR. The second is the stock assessment training with the focus on menhaden.

It's a little bit awkward title, but that's the way it went through the process, but it is essentially an attempt to provide area-specific or Chesapeake Bay specific stock assessment. This one was funded by NOAA National Marine Fisheries Service, the Office of NOAA, Chesapeake Bay Office.

The first one you're pretty familiar with because you've heard the updates, but to provide a brief summary for you, the expected outcome of this study is the demonstration of the applicability of the LIDAR technology and the video as methods to monitor the menhaden population in the Bay. It's expected to provide a preliminary single-point estimates of the population size in the Bay.

We also expect that the result of this study would be a recommended survey design and cost estimate for the potential long-term survey. The delivery time is early 2009. The technical committee has agreed that it does have direct relevance to the first priority.

The second one is stock assessment training with the focus on menhaden by Dr. Martel and Dr. Latour, University of British Columbia and the Virginia Institute of Marine Science. In this study the researchers developed a spatial model of the menhaden population that may be useful but currently fails to produce reliable estimates of the regional-specific population size because some of the important input parameters are missing; specifically, the rates of exchange or the rates of moving the schools of menhaden inside and outside of the Bay. Once that information is produced, the developed models are likely to be quite useful. That study has been completed, by the way.

The next research priority, estimates of menhaden removals by predators, there are at least three studies either completed or ongoing. The first one is estimating total removals of key forage species by predators in the Chesapeake Bay funded by NCBO; then the feeding habits of striped bass during the winter off the case of North Carolina and the Chesapeake Bay; the predator/prey interactions among fish-eating birds on selected fishery resources in the Chesapeake Bay; temporal, spatial trends; and implications for fisheries in management, also funded by NCBO.

So briefly a summary on the first of those three, estimating total removals of key forage species

by predators in the Chesapeake Bay, the principal investigator, Robert Latour of Virginia Institute of Marine Science. This study provides consumption estimates of menhaden by different predators, primarily striped bass, weakfish to some degree, bluefish.

It does have a direct relevance to the research priority. It provides direct estimates of the consumption rates. However, in order to obtain the total estimates of menhaden removals by these predators, we would need estimates of the predator abundance, which are at the moment lacking for the Bay.

The study, feeding habits of striped bass during the winter off the coast of North Carolina and in the Chesapeake Bay, conducted by Dr. Overton from Eastern Carolina University and Mr. Price, the Chesapeake Bay Ecological Foundation. This study provided very important and valuable information on the feeding habits and consumption rates of striped bass in North Carolina, Virginia and on the coast and in the Chesapeake Bay in the wintertime.

No studies were previously available. Nothing was known about the consumption rates of stripers. Therefore, it is certainly a very important study; however, during the presentation and the discussion of the final results the technical committee did have some issues for the sampling methodology and methods of data analysis and pointed at the possible ways of improving those.

The technical committee felt that even though most this information is very helpful, it would be difficult to extrapolate currently the observed results to the total population of the Atlantic menhaden coastwide. Certainly, this study does have a direct relevance to the research priority number two.

The third very interesting study is the predator/prey interactions among fish-eating birds, essentially an attempt to estimate the consumption of menhaden by birds which was overlooked for a long time. Currently a large group of scientists at Virginia Commonwealth University, College of William and Mary, University of Virginia and Maryland DNR are working on this.

This study is ongoing. The preliminary results are very interesting. It will be providing consumption estimates of menhaden by

piscivorous birds in the Chesapeake Bay. The study currently shows a significant increase in the population of those birds of different species in the area and it definitely has a direct relevance to the question on the removal of menhaden by predators.

The third priority, larval studies, determining recruitment to the Chesapeake Bay, again, there are at least three studies that either have been completed at this moment or are in the process. The first one is temporal and spatial variability in growth and production of Atlantic menhaden on the bay anchovy in the Chesapeake Bay, funded by Maryland DNR, ASMFC and NCBO.

The second one is menhaden abundance and productivity in the Chesapeake Bay, linking the environment and primary production to variability in fish recruitment. The third one is probing the population structure of Atlantic menhaden in the Mid-Atlantic, funded by NCBO. Lots and lots of these projects were funded by the NOAA Chesapeake Bay Office.

The first one of the three, temporal and spatial variability in growth and production of Atlantic menhaden, generally what has been done is that the principal investigator, Dr. Houde from the Chesapeake Biological Lab and his colleagues conducted plankton surveys at the mouth of the Chesapeake Bay. November through March, every year in the course of four years, I think, but we're going into the fourth year – it's three years so far – they've looked at the pattern of menhaden larvae migration in the Bay.

They found that the menhaden larvae are entering the Bay at an extended period of time, beginning with November and lasting sometimes into April. They were looking at the distribution of the larvae by depth and their distribution spatially in terms of where exactly at the mouth of the Bay. Is there a certain preference?

And they're certainly looking at the abundance or the density of the larvae in the water column through time with an idea of trying to find out a certain pattern in larvae distribution and whether there are certain peaks in a timeframe where most of them are being brought by currents into the Bay, which would indicate to us when most of the young-of-the-year menhaden are being produced or the major spawning that is responsible for the recruitment in the Bay, at

what time of the year it occurs and possibly where it happens.

The challenge for a study of this sort is that certainly to be valuable it has to be a long-term study. Therefore, there is an issue of cost because we would have to maintain this particular survey for a sufficient number of years to make conclusions about the variability of larval increase in the Bay.

The second study also conducted by Dr. Houde and his colleague, Dr. Harding from UMCEES, they have been looking at the menhaden abundance and productivity. They have been trying to find the links between the observed abundance of the young-of-the-year menhaden and the measures of the primary production in the Chesapeake Bay. They were trying to evaluate if there is a certain correlation between those two.

It does show some relationship between plankton composition and recruitment and some possible effects of the climate, but there are no strong correlations. The nature system is much more complex. The current findings are shedding some light, but they're certainly not definitive at the moment.

No single factor could be pointed out as the one primarily responsible for menhaden recruitment. The technical committee felt that certainly a study of this sort has a potential relevance and possibly in the future we will learn new aspects of the recruitment processes, but it is not going to provide a real practical outcome quickly in the near future for us.

The third one in that category, probing the population structure of Atlantic menhaden in the Mid-Atlantic, a very interesting study by Dr. Jones from Old Dominion University and Dr. Miller from the Chesapeake Biological Lab. What they were trying to do is they're trying to look at the otolith chemistry which they hope will allow them to distinguish the places for foraging of young-of-the-year menhaden as well as menhaden in the larval stage.

This study is still in progress. They did manage to show the young-of-the-year menhaden that they've collected in different areas of the Chesapeake Bay. They seem to be distinct or you can tell one group from another group based on the chemical composition of their otoliths, so

they seem to be able find that these young fish do not move much. They do not mix from one tributary to another. However, at this moment they could not expand their conclusions beyond this point, and certainly they haven't had a chance to look at the chemical signature in the larval menhaden.

The fourth and the last one of the current studies that are directly related to these research priorities – the fourth research priority is the exchange of menhaden between the bay and the coastal system. As you can see, there is none. Not a single project so far has been proposed – I apologize, has been funded so far that would have addressed this question.

There are several reasons. The most important is it is the most challenging and most difficult to address. I'm aware of only one proposal that attempted to look at this, but in the review process it was not rated well by the reviewers. They didn't feel that the proposal, in the form it was submitted, could have produced reliable results, so that one was shot down. Nobody else was able to propose a study that would look at this.

Well, obviously, the technical committee believes that this is a very important priority, and the technical committee certainly recommends to take a look at this; and if there is any opportunity to provide funding and a specific proposal from the scientific community, that it would be really important.

Then briefly I would just mention a number of other studies on Atlantic menhaden that do not directly respond to these four research priorities identified by the technical committee, but nonetheless these are the studies that are currently ongoing. They're going to shed some light on different aspects of menhaden biology and fisheries.

Among the ecosystem modeling using Ecopath and Ecosim, this is a study conducted by the NOAA Chesapeake Bay Office. As you know, they have built up the Ecosystem model of the Chesapeake Bay, which does provide some useful information obviously on the interaction of different species and effects of the fishery and different fishing pressure on all trophic levels in the Chesapeake Bay, and you could specifically look at the interaction of menhaden and menhaden predators.



The value of the model definitely depends on the quality of the input data, and at the moment that is, to some degree, a question of whether you trust all the input data or not. It is going to be a continuously evolving project, continuously improving. At the moment the technical committee felt that it could provide some additional useful information, but it cannot be used directly to make inferences about the status of menhaden stock or providing management advice.

Another study is on the effects of environmental conditions on growth and production of young menhaden and striped bass in the Chesapeake Bay and the Delaware Bay, which does provide important information on the growth rates and provides also a comparative analysis of differences in growth and productivity of menhaden in the Chesapeake Bay and Delaware Bay.

This would be additional growth and size on the menhaden biology, but at the moment the technical committee believes it doesn't have direct practical input. The study already mentioned this morning, functional morphology of the Gil Raker Feeding Apparatus in Atlantic menhaden by Dr. Friedland, certainly provides important information on the size of the plankton that is being filtered by menhaden, as well as the species composition.

Modeling in Support of Nutrients In Multi-Species Management by Dr. Latour looks at the filtering capabilities of menhaden. Molecular analysis of Atlantic menhaden stock structure is currently completed or close to completion. It looks at the population structure based genetics, and it seems like the study supports the previous conclusion about the menhaden population coastwide being a single population.

Economist and Sociologist Dr. Maiolo that we currently have on the technical committee also suggests that we should mention the economical study of the menhaden fishery in the Chesapeake Bay conducted by Dr. Kirkley, as well as the socio-economic studies completed by Dr. Chevront in North Carolina that is related to the issue of the localized depletion. However, we did not have information so this is only for your and our information, but we do not know the specific details of these economical studies.

Finally, a few recommendations for future research. Well, obviously, as I mentioned, the technical committee felt that emigration/immigration rates for the Chesapeake Bay are important to learn if want to relate all the measures of abundance together. People did mention the possible usefulness and suggested we should look into the possibility of developing and designing the aerial coastal survey.

As you remember, in August we reported to you on the progress of the workshop that we had together with the industry on the possibility of developing this type of aerial survey. It was also suggested that it's probably important to re-estimate regional productivity. We're currently using – when we're looking at the input in terms of productivity of different coastal systems, the Chesapeake Bay, Delaware Bay, the regions up north, there was study by Erinholtz that was completed years and years ago, several decades, and this study is currently being used to sort of partition of production percentage-wise, how much menhaden have been produced and what area on average.

The technical members felt that it is about time to revisit this because there are obvious indications that there is significant variability in the productivity and currently, in the recent decade or so, there was a diminished productivity of menhaden in the Chesapeake Bay, for example, but certainly an increase in productivity based on the reports in the New England area, so revisiting these estimates would be also helpful. That would complete the technical committee presentation for you folks. Thank you.

CHAIRMAN WHITE: Wow! Thank you, Alexei, that's a lot to handle. Questions from the board. Vito.

MR. VITO CALOMO: Good morning, Alexei. I appreciate your information. I see we're going in a direction that is very interesting to not only me but to all of us, I believe. Alexei, I see you were talking about birds of prey or birds now feeding on menhaden. When you use the word "menhaden", you cover all age classes. Is it not true that the gulls in this area are the birds of prey?

I'm sure a red knot cannot eat a menhaden, even the zero age class, but the birds of prey in this area or to the southern part of the United States

here would be not able to eat a year two class menhaden. They would have to really be focused on zero age classes. It is also true, I believe, that even the herring gulls in my area that are ravenous feeders – in fact, they try to eat me once in a while and I’m pretty big – they cannot eat a year two age class of menhaden unless it’s sitting on the deck of a vessel or washed ashore or dying and that they can pick it to death.

I take a little concern when we start saying how many birds of prey will be feeding on menhaden unless it’s a large pelican – that I understand – or a seahawk fisher bird that could pick up one menhaden and bring it to a nest, and they would all day on that one. I also talked to you for a couple of years about how the menhaden have left the bay and traveled on the oceanside and were heading back to the northeast region where I live and fished for menhaden for many years and have appeared there.

But after three years of looking at the zero age class and now they’re adults, and they’re not adults of the one and two year old class; they’re more like the four, five and six year old class, which is mystifying to me because I figured they’d grown up there and they’d be the age twos and threes, but they’re not. They reached as far as Jonesport, Maine, where they didn’t even know what they were.

They’ve reached Canada in this last year, reports of these strange-looking pelagic fish in the herring family, and they didn’t know what they were because they haven’t been there in over a hundred years. Using the LIDAR system – again, I spoke at the last meeting that it would only show you the surface fish.

I have asked if Omega Protein was cooperating with your research and others in allowing maybe the use of their planes at times to do some of the research, that you could see from an airplane more than you could do in all science sitting behind a computer for a lifetime. I think we need to ban from this board the harvesting of zero age class menhaden. That would help us more than all the investigations we’re doing.

We should ban them just like I say we should ban the sardines or the small herring in my area. That would do more for the rebuilding of the stock than limiting certain people from fishing that make a living on the sea. I wonder if we’re

going in the right direction from time to time. People that fished on these species know more about them because they’ve seen them with their eyes.

They’ve traveled for years and there are records kept for years when they would appear, and they know when to get ready every year at the same time. I appreciate all the information from the science that you’re recording and investigating, but I think we need to work hand in hand with industry, whether it be from the Gulf of Maine or down in the Chesapeake Bay area or wherever.

I think this would be a collaboration and cooperation of scientists and fishing industry people better put than any other position I’ve ever seen. I think this would a hand-in-hand investment to make instead of people bucking one for the other because they don’t like the way they fished or don’t like because they didn’t catch a striped bass that day.

I think the science and the industry could get rid of all the bogeymen that are in this business and also bring to reality of what is happening. Again, I appreciate what you’ve said here today and I thank you very much, Mr. Chairman, for allowing me to speak.

MR. JACK TRAVELSTEAD: Alexei, thanks for the detailed report. I guess my first question is can the board members get a hard copy of that presentation? I think it will be a good reference document for us to have as we move forward.

CHAIRMAN WHITE: It shall be done.

MR. TRAVELSTEAD: Alexei, you will recall when we set forth down this path and identified all of these research topics, we were more or less focused on answering the question of how do we define localized depletion and is localized depletion occurring in the Chesapeake Bay. Based on your presentation today, it doesn’t appear that we still don’t have a lot of information to address those questions.

You have now identified three additional topics that you recommend that we focus on, and I’m wondering what your best estimate is if we move in that direction, will we get a definition of localized depletion? Will we know whether it’s occurring in the Chesapeake Bay or elsewhere if we move in this direction and how much longer

is it going to take before we have answers to those questions?

CHAIRMAN WHITE: Thank you, Jack, and that certainly is a loaded question based on the presentation by Alexei. Do you want to respond to that, Alexei?

MR. SHAROV: Yes, I will try. Well, the technical committee, first of all, produced the research recommendations and identified those principal areas. The technical committee said here is what we need to learn, and these are the areas we need to focus on to understand the dynamics of the abundance of menhaden in the bay compared with the dynamics of the removals by people versus removals by predators, et cetera, so we did that.

Then we also, at your request, provided you with our interpretation of what the localized depletion actually is, because obviously it was clear very quickly that everyone has a different point of view as to what it is. If you would ask ten people around the table, they would probably give ten different definitions. About half a year or a year ago we came back to you and presented our definition, which seemed to make sense to most of you back then.

In terms of answering the question whether it is occurring and where all these projects lead to, my feeling is that we're going in the right direction. You would probably have a better answer if everything was in one set of hands. The issue that I would like to point out to you is that we are your advisors, the technical committee, but we're not or most of us are not the ones that are conducting this research.

We're only recommending what needs to be done. Then the different agencies that are involved in the funding are depending on what the researches offer, so the ones that offered their studies and they were funded, they're not directly interested in answering these questions. We're hoping to assimilate all the information that they produce in the course of their research and use it and hopefully come up with the answers.

The technical committee is not a menhaden research institute at the moment. Because of this separation, there cannot be a quick and direct answer. I hope that makes sense, what I'm trying to explain to you, that is where we are.

MR. TRAVELSTEAD: Just a followup. Alexei, I guess what I hear you saying to some degree is that there is a slight disconnect between identification of the research needs by the technical committee and the lack of control on what research projects are presented by the scientific community and what ends up getting funded by the various agencies. I guess ask the federal agencies to comment perhaps on how we can close that disconnect and improve on that.

CHAIRMAN WHITE: Does anyone down there want to respond to that? Go ahead.

DR. JAIME GEIGER: I think Jack's observation is right on. I think we have a bunch of disparate research going on; and because of the nature that we have no single source of funding, it's hard for, I believe, our technical committee to focus on the true priorities. I think that's going to be a continuing problem, Mr. Chairman. I am still concerned that we haven't really honed in on what are the highest priorities that we need to address.

I mean, there is no doubt that we're doing a lot of good work in a variety of different areas, but I still think they were not keying into the number one or number two priorities we need to focus both our available resources on and in-kind services on to try to address.

Secondly, I do think everybody is concerned that certainly budgets both from the state and federal government this year are going to be problematic and finding the research funds to support all of these kinds of activities has been a continuing challenge for this board and for the state and federal agencies who sit around this board.

I do see that doing nothing but increasing in difficulty in the immediate future. At some point I do think we need to regroup and really look hard with both the research community and the management community and really look hard at are these the absolute top priorities we need to address, adequately fund these priorities, report upon these priorities and then take adaptive management measures to implement the results. Thank you.

CHAIRMAN WHITE: Excuse me, Pete, did you have something to this topic? I'd like to finish this up. If you're going to go on to something else, I'll come back to you.

MR. PETER HIMCHAK: This follows directly on the three previous speakers' comments. My impression on the basis for this cap, one of the key pieces of research that would answer some of the questions, well, what is going on in the Chesapeake Bay versus the signals that our coastal stock assessment is giving us is that one of the key research priorities from the technical committee was what is happening with the advection of eggs and larvae into the Chesapeake Bay; has that changed for some reason; or, has that remained the same or possibly increased, or is it environmental circumstances within the bay itself that is impacting the survival of menhaden up to the young-of-year stage?

It seemed to me that some kind of solution on where this localized depletion – it kind of like put it in is it a real concept that we need to cap the fishery if the coastal stock assessment says that we're not overfishing, overfishing is not occurring, so, yes, I'm a little disappointed in the timeline here of the research results that came out of the recommendations of our workshop. I'm not very optimistic about are we addressing the research needs that we used to substantiate the need for cap in the bay?

EXECUTIVE DIRECTOR JOHN V. O'SHEA: It seems to me issue might be a process issue here. It strikes me that we have a dedicated group of technical folks that are working, but we've had a clear need to keep the sideboards on the research so that the limited resources that we have get directed towards answering the right question, and at the same time there is a time element urgency of getting the answer.

I'm not sure that having the technical committee manage this, if you will, is fair to them, and yet this is one of our largest boards so perhaps this may be a situation where a subset of this board might be considered as the group to oversee and keep the sideboards on and try to push the progress to meet the deadlines. That might be something to consider, Mr. Chairman.

CHAIRMAN WHITE: I think that's a great idea, Vince. I had talked with Jack about that, and I guess I'll ask you, Jack, at this point as an extension either to the technical committee or a new group from this board; did you have a chance to think about that a little bit?

MR. TRAVELSTEAD: I think it's an excellent idea. The board needs to be involved in this.

Obviously it can't occur with the full board, but a subset to sort of oversee this thing and direct it I think would be very helpful. If, Mr. Chairman, you decide to go forward with that concept, I would, on behalf on Virginia, ask that a representative from Omega also be added to that group.

I think in the past, in working toward this research agenda, we have let the scientists sort of identify the projects and we have identified those that would be funded, and then at that point we would knock on Omega's door and say, "Well, here is what we have come up with. Now we need your help to get it done." I think something is lost in that translation when that occurs.

I think we'd be better off at this point, given the limited resources that we have and the time element that Vince talks about, of having Omega sitting at the table with us when we initiate these discussions about where we go from here rather than waiting to the end game to involve them.

CHAIRMAN WHITE: That's great and I would like, in my capacity as chair and staff, to accept this challenge and accept people from the board, and we'll extend the invitation to Omega to form this regrouping committee, if you will. Specifically to that point, does anybody have any suggestions? If not, then just come see me or Brad afterwards and we'll begin the formation of this and get back to the board on it. George.

MR. GEORGE D. LAPOINTE: If we put this group together, do we want to have somebody from the conservation community, too, so we look like we are balanced on that group? I mean, it means sense to me just so it doesn't look like we're cooking the books somehow. I don't think we are, but, again, just the perception. This is such a tough issue that I say include them up front to move ahead.

CHAIRMAN WHITE: Good suggestion. Bill.

MR. WILLIAM GOLDSBOROUGH: I don't want to put him on the point necessarily, but I think Ken Hinman from the National Coalition for Marine Conservation might very nicely fill the role that George just described.

CHAIRMAN WHITE: Thank you. I'll go back to my list. Bill, I had you on another comment.

MR. GOLDSBOROUGH: Mine was finer-scale question for Alexei that I'll hold on if you like until the bigger issues are involved. I think Steve Meyers, for example, wanted to comment on them.

MR. STEVE MEYERS: Mr. Chairman, we support the idea of the subgroup to examine this, and we stand by to support that group. Thank you.

CHAIRMAN WHITE: Thank you, Steve. George, did you have an additional comment, too?

MR. LAPOINTE: I do; and if I think about all the work that has been done that Alexei reported on and all the uncertainties still, by all means let's put a group together to direct the science as best we can, but we have to face I think the reality that in fact we'll be making decisions in the next couple years with pretty much the same information we have now.

These ecological questions are huge and by all means let's work on them, but I don't think we're going to have the joy of menhaden sitting in front of us to help us that much when we, for instance, discuss what happens at the end of the cap, and so I think we all need to start thinking about that as a parallel track as well.

MR. GOLDSBOROUGH: Alexei, you mentioned at least two of the research results providing tools that might be useful, but really would not be useful because of the lack of data. I'm referring to the Martel and Latour Spatial Assessment and the Overton and Price work on predator/prey. I think you mentioned lack of data was hampering using both of those. Does the technical committee have any recommendations on how we might go about getting that data; is that something that could be considered?

MR. SHAROV: Yes, certainly. On the first one, the model of Latour and Martel is the migration or exchange rates of the bay versus the coast, the research priority that hasn't been addressed so far by any researcher. The second one that I mentioned that actually – I guess maybe I did not present it well because that study was actually mostly providing the data, the Overton and Price study.

The technical committee had issues with the use of this data or extending that information

towards the total Atlantic menhaden population. There were sampling methodology issues that we looked at. Then if I could comment real quick on the discussion; I certainly see certain dissatisfaction with the progress. You would have wanted to see more.

I think the technical committee had clearly set those four questions. I could reformulate them in a different way. Number one, essentially we're saying we need to know how many menhaden are there in the Chesapeake Bay to address the issue of the localized depletion, if that occurs. One, how many menhaden in the Chesapeake Bay; two, how many menhaden are being removed by predators; three, how quickly menhaden come in and out of the Chesapeake Bay because the number that you measure that a certain moment might change if they're exchanging fast; and, four, what drives the recruitment; why do we have very low recruitment in the bay particularly for the last 15 years.

These are the questions asked. To answer them, like I said, the technical committee cannot answer those questions. Those questions should be answered by the research groups. What happens is that, for example, the NOAA Chesapeake Bay Office issues the request for a proposal. They're specifically outlining those research priorities, but they have to deal with what the researchers offered them.

They cannot go around and tell them they need this. Well, they've explicitly said what they need, but the university scientists come with their proposals and the funding agency has to choose out of what they have on their table. That might not perfectly suit what we want, but that is the current process. You may want to think of how you can improve it, for sure, but that's where that disconnect happens as to your expectations versus the deliveries. Thank you.

CHAIRMAN WHITE: Thank you, Alexei. I'd like to wrap this up. Dave Pierce.

DR. DAVID PIERCE: Just a couple of points with regards to this subgroup that we might want to establish. There seems to be some support for that, but I really don't understand as yet what the objectives of that subgroup would be. George did indicate that the subgroup would help direct science as best we can. I'm still not sure how that would happen; so if we do go with a

subgroup, we should be very clear as to what the objectives of that subgroup are and how successful they might be.

Who will they interact with? Alexei just indicated that we do have our current process that seems to be flawed and that very significant research questions that he just posed are not being addressed by those who provide the funding. This subgroup would have to have some means by which it could interact with the funding agencies, I suppose, and somehow insist that these particular questions be addressed.

Otherwise, all this work is being done, all this money is being spent for no good; at least no good for us to answer the significant questions that we have to have answered so we can drastically improve the way we manage menhaden. That's what I would ask for; if we do go forward with this subgroup, it has to be given a lot of thought.

Then the funding agencies or the funding groups would have to somehow sign on to the fact that they would take a lot of direction from that subgroup, acting for this particular board. I would just offer that up as a concern of mine, and let's not jump on this bandwagon and let's not accept this approach unless it is very well defined.

MR. LAPOINTE: I just wanted to Alexei that my comments weren't critical of what the technical committee was being asked to do. We kind of asked them to find the Holy Grail for us and that's a long process. If there is frustration, it's probably with ourselves that we were asking these huge questions. We asked the right questions, but we now have a much more realistic expectation about how we can expect incremental progress towards those questions to be met.

MR. MEYERS: Mr. Chairman, as part of our support in this process and working with this subgroup, not only will we support a symposium working group meeting of all the participants, we would also reach out to the Center of Independent Experts for a peer review of this work. Thank you.

MR. CALOMO: Mr. Chairman, instead of giving a lot of information, I do have a question that I would like to ask Alexei. For the last four years we've seen recruitment in the northeast

region from Maine to New York. When we talk about recruitment in the Chesapeake Bay and they're saying why is there localized depletion, if we're seeing recruitment in the northeast region for the last four years of zero age class, and we haven't seen it in the past 20 years in the northeast region, is there a shift that's occurring because now we are seeing three year classes that I can estimate, three year classes of adults, say, threes, fours, fives or four, fives and sixes, that's the best estimate I can give you being not a scientist, only a fisherman.

So, I'm just wondering as we seem to pound that word "localized depletion", aside from pesticides and other things being dumped into the Chesapeake Bay and dead zones in the Chesapeake Bay, I'm just saying we have – we can verify, we can see it with our own eyes the shift in this fishery that happens every periodic time, maybe 15 to 20 years, in my lifetime, anyhow. My question to you, again, is it localized depletion, which I hate the words, but is it – or is it a shift in the aggregate of fish that are coming to the northeast as far as Canada? I should have included Canada. Thank you.

MR. SHAROV: I wish I could answer your question clearly, but they're only speculations; like, you know, some folks on the technical committee and outside of the technical committee community do call it a shift, but that's just a theory or a possible explanation. To answer this question with absolute certainty, we need to know much more than what we do know.

Well, we obviously know that the spawning does occur close to New England waters, but we're not observing it. We just deduced it based on the fact that we see a lot of young-of-the-year menhaden in the New England waters. Therefore, there had to be eggs and larvae. Is it because most of the spawners skipped the area of the Chesapeake Bay area and moved directly and spawned farther north? Possibly, but that's just a speculation because nobody samples them in the wintertime. We don't have that information. The answer is maybe but we don't know. That's the honest answer.

CHAIRMAN WHITE: A quick followup, please.

MR. CALOMO: Thank you, I'll be quick. I try to be quick, honest. Mr. Chairman, we do know – for the last three to four years we do know that

fish have traveled in the oceanside, not only with information that I've given you – again, I'm not a scientist, but I've given you for three or four years and also Omega Protein has also left the bay area to fish on the outside.

We do know for a positive fact that zero age class of this fish has occurred in the Gulf of Maine, in Narragansett Bay and even in Canadian waters. We do know for a positive fact that this occurs or we would have never seen these zero age class or we would never see these adults appearing in abundance, not scattered schools.

They're in abundance to where I made a living since 1954 to about – I quit about 1983, '84, '85. We do know that for a positive fact, that that has occurred. We do not have to use any science there. We see it; we believe and we can show it. We catch it; we've landing it. This is a fact of life. I just want to bring that forward. Thank you.

CHAIRMAN WHITE Thank you, Vito. Jaime, do you want the final comment?

DR. GEIGER: Mr. Chairman, again, I think our technical committee has done an outstanding job, and, Alexei, I certainly appreciate all the hard work that you have done to try to herd this flock of cats towards some goal and objective. But it seems to me, listening to this discussion around table, it's becoming clearer and clearer to me, Mr. Chairman, that, again, I think certainly forming the subgroup may be very beneficial and may be productive.

I am certainly sensitive to the words of Dr. Pierce, and, again, certainly, I think some more focus and direction to this group would be beneficial. I also heard, when Alexei summarized some of the things that he would recast the statements and the tasks, and they sounded very similar to a terms of reference for a peer review.

And, again, I do think given the diversity of species, given the importance in this species, given all the other ecosystem-related issues affecting this species, I think a good, solid science and management peer review would serve us extremely well. It would set the baseline of what the current science says.

It would examine the current management by which we manage the species and provide good,

sound science management advice on where we take it, both for management priorities as well as for resource priorities. And, again, I think having a consortium of the private sector, federal, state, NGOs as part of this process would be very important and very productive. Thank you, Mr. Chairman.

CHAIRMAN WHITE: Absolute great summation. Russell.

MR. RUSSELL DIZE: Mr. Chairman, I keep hearing localized depletion. In the last three to five years we've have had some of our catches in the Maryland portion of the Chesapeake Bay. My friends that are fishermen, pound netters, had so many menhaden they couldn't sell them this summer at times. When you say "localized depletion", it doesn't ring a bell home. Thank you.

#### ECOLOGICAL REFERENCE POINTS

CHAIRMAN WHITE: Thank you. Moving on to the ecological reference points, Brad. You all have a copy of this in your briefing book.

MR. BRADDOCK SPEAR: Mr. Chairman, I'll quickly run through that document and look for board comment afterwards. At the last meeting in August the board tasked staff with coming up with developing a proposal for moving forward with ecological reference points. Staff went back and came up with some terms and questions that might help move this process forward.

There was also talk at the last meeting about a working group to move forward and focus specifically on ecological reference points. The direction that the board chooses to go or the questions or terms that the board chooses to move forward with will kind of determine the makeup of that working group. You can discuss that as well.

This isn't a new issue. The board asked the technical committee to look into it back in 2004. Essentially the technical committee said it's not feasible to come up with ecological reference points at that time, but they thought that perhaps moving forward with a multi-species model, after it was peer reviewed, that this might be possible.

It turns out after the peer review the peer review panel specifically said that the model isn't ready for developing ecological reference points. Getting into the terms and questions; number one essentially is continuing to move forward with the multi-species model. One of the goals is to come up with ecological reference points; however, we're not there at this point.

Number two is essentially a literature search, looking at other examples of ecological reference points if other fisheries have dealt with this issue and how. Number three is looking at narrowing the scope of ecological reference points. Is the interest in just predator/prey interactions? Is it bringing in primary production, environmental conditions, filter feeding?

The fourth is looking at specific management questions. Inherent in developing ecological reference points is some sort of management goal, so does the board want to start with looking at specific management questions. These terms and questions aren't comprehensive. They're not mutually exclusive, so staff would welcome any further guidance from the board.

CHAIRMAN WHITE: Again, questions or comments from the board? As I understand it, our challenge here is that it would take someone, if they were fully funded, at least two years to complete this. If not, continuing on the way we're going, it could be as many as five years, if I'm correct in that, in the multi-species. George.

MR. LAPOINTE: Mr. Chairman, I haven't thought about the funding, but it strikes me that there are two logical courses of action. One is continuing the multi-species modeling approach because I think, again, that is going to take a lot of care and feeding before we're going to be able to plug in numbers and say there is Factor X and Y and Z that we want to move ahead with on this species and others. I favor that.

At this point I'm reluctant to – I think this is a good task. Because this is going to be a slow process, I think the MSC – we've got a group of technical people who could help us keep the finger on the pulse on how these reference points could move ahead rather than forming another group that we have to worry about its care and feeding. It strikes me the Management and Science Committee is the logical place to keep this on as a standing agenda item so that as the

body of knowledge moves ahead, we can take advantage of it.

MR. TRAVELSTEAD: Brad, what is the status of the MSVPA? You said the peer review said it wasn't capable of producing ecological reference points, but is it now just sitting on the shelf or is there a group that continues to work with it?

MR. SPEAR: It's my understanding that the multi-species technical committee and assessment group continue to refine the model and make relatively small improvements. I don't know what the next step specifically is, but I think kind of a longer-term goal is to move forward with another peer review.

MR. SHAROV: Can I comment on that? If I could, being a MSVPA subcommittee member, I can tell you that we've done updates to the model. It hasn't changed structurally, but we added a few more years of data. It is being currently reviewed by the full multi-species technical committee. As I understand, it will be presented this week to the Policy Board. I thought that was the goal.

The next step, next year we're going to do another assessment, which is going to be a benchmark assessment. There is a high possibility of this model being used as a support or as a part of the assessment process, which will be discussed at the upcoming Menhaden Stock Assessment Subcommittee early in November of this year.

CHAIRMAN WHITE: George, do you know specific to that question, is this going to be before the Policy Board?

MR. LAPOINTE: I just looked at the agenda and didn't see it on there. We can add it if we're ready and we have time or we can pick it up at our next meeting.

MR. MEYERS: Mr. Chairman, I just want to say that we support Mr. Lapointe's comments on this and look forward to working through the commission's committees, including the Management and Science Committee on this.

MR. LAPOINTE: I just sent a note to Matt. Matt Cieri is the chair of that group; so if we want information, we might ask him to come up to the table and give us a short update.



CHAIRMAN WHITE: I think we've got just about time for that if he's willing to do it. While he's coming up, David, you had a question or a comment.

DR. PIERCE: Yes, my question pertains to something that Brad said. Brad asked a question. I think his question pertained to specific guidance that we needed to give him and those who are working on the model for the development of ecological points. Perhaps I misunderstood him, but he said that we're not there yet regarding our being able to come up with ecological points that could be generated through this model.

It still needs to be refined; it still needs to be improved. I think Brad said that he felt that we, collectively, this board would need to provide some guidance as to what our specific interests are. Are we interested in ecological reference points that would pertain specifically to predator/prey relationships or to primary productivity or to environmental conditions or all three? Again, I need to better understand what his point was because I can't respond unless I really understand the nature of the question.

MR. SPEAR: I guess the question is which one of these four questions or directions would the board like to go, any of them, none of them. Essentially the MSVPA process will continue to move forward, but is there interest from the board in moving that process along more quickly, in a different direction. This is the sort of guidance I'm looking for.

If there are specific comments with regard to predator/prey relationships, filter feeding, that sort of stuff, the board, again, will have to provide specific guidance if they want staff to look into this, if they want the technical committee to look into this, if there is a board subgroup to start forming questions or look in this direction is the sort of stuff I'm looking for.

DR. PIERCE: May I have a quick followup, Mr. Chairman, with regard to that particular point, and that here is where I would need to turn to the technical committee because this model is being developing. We expect it will be very useful, but if we say to Brad that we would like this model to focus on primary productivity and environmental conditions specifically, then we would have to ask the technical committee are we going to have that kind of information in

hand to plug into the model in a timely way so that we can generate ecological reference points and then know where we are relative to those points as we move forward with menhaden management.

My preference is to keep primarily on predator/prey relationships, but that may be inadequate, but I'm not sure if it is inadequate. I don't want to go beyond predator/prey if we're not going to be able to get the data to plug into the model, to run it, to factor in other considerations such as primary productivity and environment conditions. It's expensive, difficult to get, and with today's budgetary problems I suspect we will be data poor, and the model will be there but we won't be able to run it to see where we are relative to some ecological reference point that we may define and then decide to live with.

CHAIRMAN WHITE: Thank you, David. George, can Matt answer some of these questions or do you have something specific?

MR. LAPOINTE: Well, David went beyond what we asked Matt to come to the table for, but I don't think – I mean, with regard to narrowing the focus, who knows? You know, this is such a big issue; and so to say I like predator/prey and not primary productivity, I'm the wrong person to ask the question.

So to me that reinforces the need to put this on as a standing issue for the Management and Science Committee so they can work on it incrementally and help us because we know that it's the right question to ask, how is it all connected and is there any component that we can plug into our management process that recognizes that in a meaningful way. I can't answer that question right now.

I mean, that's clearly the dilemma we're in, and so it strikes me that it's not going to be a short process. It's not going to be an easy process, so we have some very qualified technical people – and it's not just an issue for menhaden – that our Management and Science Committee can put it on again as standing agenda item. They may meet for three years and say, "Guess what, we've put it on as a standing agenda item and we don't have any new information", or we do. But, narrowing the focus, you know, of such a broad question I think is not a productive thing for the board to do right now.

MR. GOLDSBOROUGH: It seems like there have been some direction changes from where we were headed coming into this meeting, so I want to try and understand that first. It sounds like we are talking about a subgroup of this board, with a few people added, to provide sort of ongoing big-picture direction.

Now, instead of a technical or semi-technical working group to develop ecological reference points, we're saying let's ask Management and Science to deal with that on an ongoing basis and continue to develop the technical aspects. Is that essentially what you're saying, George? And, if that's case, it seems to me one of the things we're missing that is embodied in, for me, anyway, number two of Brad's four items is bringing in expertise from other fisheries where ecological reference points have been developed.

I think there is some of that out there, and so I wonder is there a way to do that within this framework, and maybe it's tasking Management and Science to hold a mini-symposium, ala what Steve was saying, and maybe working with NOAA and bringing in these people, something along those lines. I just toss that out there to move us forward a little bit. I think there is a lot to be learned from other fisheries, both Atlantic herring on this coast and some on the west coast as well, and even in other parts of the world, if I'm not mistaken.

MR. HIMCHAK: Ecological reference points, brilliant concept, but I don't think the board is in the position to give the technical committee any guidance on narrowing the scope if the technical committee has trouble defining the concept. I think we all have a lot to learn on this. I brought this up to Dr. Rago at the Mid-Atlantic Council last week because he did present in his presentation on the GARM III – he did make reference to essentially fishing all these stocks at BMSY, 19 stocks, and there were six references that dealt with an ecosystem management approach in areas throughout the world.

So as a starting point I think we all need – and I asked him where can I find the references, of course – so as a starting point I think we need to explore the concept before we continue discussion on something that we're all on board with, but we need to get the nuts and bolts on. Thank you.

CHAIRMAN WHITE: Okay, any further comments on this topic at this point? Go ahead, Bill.

MR. GOLDSBOROUGH: I'm just wondering if at this juncture it would be useful to see if anyone in the audience had something to offer.

CHAIRMAN WHITE: I would entertain that; is there anyone? Ken.

MR. KEN HINMAN: Ken Hinman, National Coalition for Marine Conservation. As you know, in August I was advocating very strongly for a separate new working group to work on ecological reference points and very much had in mind bringing in outside expertise. It seemed to me as an observer of this process for the last lot of years, there seems to be a lot of back and forth between committees within the ASMFC, the technical committee and the management board on this issue.

It seems that we're still at a juncture where a lot of people can't get their minds around even the concept of what we're talking about when we're talking about ecological reference points. I don't think you have the luxury to push this to the Management and Science Committee, to put on their very full agenda, and expect that you're going to really make some progress by 2010, which is really the target we're all sort of looking at when the cap expires and we'd like to be able to move on to something new.

I just want to say in my mind I have been looking at this a lot over recent years in trying to define what ecological reference points are, and they are really management goals. You don't necessarily have to have all the information in place right away to tell you what those reference points are.

You can define those from the outset. They are parameters, and they are very much biological reference points that we use all the time and we're familiar with in a single-species stock assessment. They're set in an ecosystem's context, and these are the population biomass targets that we choose, the biomass thresholds that we choose.

They are the age structure of that population that we want to achieve. They are the geographic distribution of that population that we think is necessary as far as density and availability of

prey for the predators we're concerned about. It's the natural mortality versus fishing mortality issue and how you allocate between the two.

It's not just a matter of going out and determining what the natural mortality is at the present moment. You've got to choose what you want the natural mortality to be to meet the predation demand. I mean, there are a lot of choices here, a lot of allocation things, and they are not foreign concepts.

They are applying concepts we use already in our management, but it's in forming them with looking at the information in a different way in setting different goals in an ecosystem's concept. I just think a working group that can actually sit down and hash out these things I think would be very valuable to moving this whole process forward rather than every four or five months getting together and realizing we still don't know where we're going. I think it's something that would be extremely valuable to this board by the time you meet this time next year to start thinking about what you're going to do with the new assessment and a new management regime.

CHAIRMAN WHITE: Thank you very much, Ken. Matt.

DR. MATT CIERI: My name is Matt Cieri. I am with the Maine Department of Marine Resources. I'm the Chair of the Multi-Species Technical Committee. Getting back to the MSVPA, I'm giving an update today to Management and Science. The model is still – it was peer reviewed in the fall of 2005.

From that a number of questions were derived from the policy board, this board, as well as a few other species, Management and Science and the Assessment Science Committee. The result is we've been working on an update. The update is almost completed; it will be available by spring. It might be by your winter meeting, by February, with any luck.

We're still waiting for an update for weakfish; and once that is completed, it will go to you guys, as well as the policy board, probably at your May meeting. From there it will feed into the benchmark assessment for Atlantic menhaden. The model itself deals primarily with predator/prey interactions and does not deal with primary production or those types of issues. The

forage fish discussion is something the Management and Science Committee is also going to be having later on this afternoon. That's it.

MR. LAPOINTE: I think the questions Ken poses are legitimate, but, again, I don't think we need a working group for that. It strikes me that we've got a talented staff; and if we ask the technical committee and the science department to say from the perspective of what we'll be looking at in a couple of years, how could you adjust the parameters we use?

You know, do you want to be more precautionary from an ecological perspective and what does that mean in terms of allocation decisions, again, I don't think we need a working group for that, so we could more narrowly focus the questions for how you would adjust those things we take into account from both an assessment perspective and then the management decisions, and they could come back with some ideas for us. But, again, I don't think we need a long-term working group to do that.

CHAIRMAN WHITE: Is that, then, something that we can have done through direction to the MSC or do we need a recommendation from the policy board?

MR. LAPOINTE: I would keep it in the context of the menhaden fishery at this point, so I would use staff and the technical committee. They could probably more narrowly focus those questions and then send them out to the board by e-mail, the board and interested parties, and then cycle back in to help us. And in the end they're going to be the issues we argue about at the board, and so just to focus on those strikes me as the logical way to go.

MR. GOLDSBOROUGH: It that is the direction we're going to go, can we give Management and Science a bit of latitude to bring in outside expertise as needed?

#### ADVISORY PANEL NOMINATION

CHAIRMAN WHITE: I would expect so depending on funding. One last issue that we have on the agenda, AP nomination from the state of Maine.

MR. LAPOINTE: Jennifer Bichrest works in the bait industry in Maine and is an active participant in our management process; and so with that reminder, Mr. Chairman, I would heartily endorse her nomination and move that she put on the advisory panel.

**ADJOURN**

CHAIRMAN WHITE: Seconded by Pat Augustine. Without any objection, we will accept her nomination. Thank you. Is there anything else to come before the board at this time? All right, I thank you very much. We certainly have covered an awful lot in a short period of time, and I think we've got our work cut out for us, but I hope we can measure up to it. Thank you.

(Whereupon, the meeting was adjourned at 9:29 o'clock a.m., October 21, 2008.)