

PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

HORSESHOE CRAB MANAGEMENT BOARD

Crowne Plaza Hotel
Old Town, Alexandria, Virginia
March 23, 2011

Approved 4 August 2011

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1. **Approval of Agenda, by Consent** (Page 1).
2. **Approval of Proceedings of November 8, 2010** by Consent (Page 1).
3. **Move to approve the request for de minimis by Maine, New Hampshire, the Potomac River Fisheries Commission, South Carolina, Georgia and Florida** (Page 11). Motion by Pat Augustine; second by Bill Adler. Motion carried (Page 11).
4. **Move to accept the 2010 Horseshoe Crab Fishery Management Plan Review** (Page 11). Motion by Pat Augustine; second by Terry Stockwell. Motion carried (Page 11).
5. **Move to approve the nomination of Dr. David Mizrahi to the Shorebird Advisory Panel** (Page 12). Motion Motion by Pat Augustine; second by Peter Himchak. Motion carried (Page 12).
6. **Motion to adjourn, by consent.** (Page 12).

ATTENDANCE

Board Members

Norman Olsen, ME (AA)	Roy Miller, DE (GA)
Terry Stockwell, ME, Administrative Proxy	Tom O'Connell, MD (AA), Chair
Sen. Brian Langley, ME (LA)	Bill Goldsborough, MD (GA)
Douglas Grout, NH (AA)	Russell Dize, MD, proxy for Sen. Colburn (LA)
Ritchie White, NH (GA)	Steve Bowman, VA (AA)
Dennis Abbott, NH, proxy for D. Watters (LA)	Jack Travelstead, VA, Administrative Proxy
Bill Adler, MA (GA)	Catherine Davenport, VA (GA)
Paul Diodati, MA (AA)	Bill Cole, NC (GA)
Ben Martens, MA, proxy for Rep. Peake (LA)	Red Munden, NC, proxy for L. Daniel (AA)
Robert Ballou, RI (AA)	Robert Boyles, SC (LA)
David Simpson, CT (AA)	John Frampton, SC (AA)
Pat Augustine, NY (GA)	Spud Woodward, GA (AA)
Peter Himchak, NJ, proxy for D. Chanda (AA)	John Duren, GA (GA)
Tom Fote, NJ (GA)	Jessica McCawley, FL (AA)
Adam Nowalsky , NJ, proxy for Asm. Albano (LA)	Steve Meyers, NMFS
Stewart Michels, DE, proxy for D. Saveikis (AA)	Jaime Geiger, USFWS
Bernie Pankowski, DE, proxy for Sen. Venable (LA)	

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

Ex-Officio Members

Jeff Brust, Delaware Bay Ecosystem
Committee Chair

ASMFC Staff

Bob Beal	Danielle Brzezinski
Vince O'Shea	Chris Vonderweidt
Toni Kerns	

Guests

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Presidential Ballroom of the Crowne Plaza Hotel Old Town, Alexandria, Virginia, March 23, 2011, and was called to order at 1:45 o'clock p.m. by Chairman Thomas O'Connell.

CALL TO ORDER

CHAIRMAN THOMAS O'CONNELL: I would like to call the Horseshoe Crab Management Board to order. For those of you who missed the South Atlantic discussion, Danielle that was her first meeting and she did an awesome job, so she set the bar high for this meeting for her performance.

APPROVAL OF AGENDA

CHAIRMAN THOMAS O'CONNELL: With that the first item on the agenda is approval of the agenda. Are there any suggested changes to the agenda for today? Seeing none, the agenda will stand approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN THOMAS O'CONNELL: The second agenda item is approval of our proceedings from November 2010. Are there any suggested changes to the proceedings? Seeing none, we'll have those approved.

PUBLIC COMMENT

Moving forward, we have a public comment period. The public comment period at this point in time is not for items on the agenda. For items on the agenda for which the board takes action on, we will try our best to provide an opportunity for public comment at that point in time. Is there anybody from the public that would like to bring an issue to the board's attention that is not on the agenda? Okay, we'll keep moving along.

Next on the agenda is an update on funding for the benthic trawl survey, and I'm going to hand it over to Danielle. All right, before we give the update, we have Allen Burgenson here. Allen would like to come up and inform the board of some information.

MR. ALLEN BURGENSEN: My name is Allen Burgenson. I'm the Regulatory Affairs Manager for Lonza Walkersville in Walkersville, Maryland. We are a biomedical company that processes limulus amoebocyte lysate for use in the biomedical industry, pharmaceutical industry and medical advice industry to detect pyrogenic substances. Lonza would like to confirm its commitment to dedicate \$50,000 to the

benthic trawl survey. We had made that commitment back in I believe May so we would like to reconfirm that. Thank you.

CHAIRMAN O'CONNELL: Thank you very much, Allen. We greatly appreciate it recognizing the importance of this survey. We're getting closer and closer to the level needed. One other comment I wanted to make was Rick Robins has worked with the whelk industry and has come forward with a contribution of \$15,000. I think we owe both of them congratulations. (Applause) With that, I wanted to hand it over to Danielle to bring the board up to date as to a reminder of how much funding is needed and we currently stand and some additional efforts that we're pursuing to hit our target level of funding.

UPDATE ON FUNDING FOR THE BENTHIC TRAWL SURVEY

MS. DANIELLE BRZEZINSKI: As stated, I just want to give you an update of where we're at in terms of total contributions that we have received so far. The biomedical industry has pledged a little over \$100,000. In total with Mr. Robins' coordinated contribution, the fishing industry has contributed \$17,500. Our current total is about \$118,000.

That still leaves us about \$82,000 short of the \$200,000 goal that is needed to continue the survey at its current level. I spoke with Dr. Erick Hallerman from Virginia Tech and David Hata, who both work at running the survey. As it is a fall survey, the board has some time to still consider some other options but they would need to know within a month or two considering what sort of changes might be necessary to work with the current level of funding that is there. Should there be any updates, we'll certainly be in correspondence with you.

CHAIRMAN O'CONNELL: Is there any question or discussion by the board. Yes, Bill.

MR. WILLIAM A. ADLER: I remember in the past meetings requests for funding to help in this project were sent out to a number of groups, including the conservation groups who were so adamant that we had to reduce the catches and do all this type of stuff. I was just wondering; I noticed the biomedical industry gave money and the fishing industry in spite of being basically under attack in many cases. I wanted to know how much of the funding or how many donations came in from the conservation sectors that have also been very vocal, conservation and I believe some of the bird groups – how much money did they donate to this survey?

MS. BRZEZINSKI: We have not received any correspondence back from any of those groups that we sent letters to, so we have received none.

MR. PETER HIMCHAK: Mr. Chairman, I appreciate the efforts. I know Executive Director O'Shea has sent out many letters to environmental organizations. Some of them have flat out said that they can't supply any money, I believe, and we haven't heard from any of the others. It most distressing that there is no investment into this multispecies model.

MR. THOMAS FOTE: I was going to ask the same question as Bill because I usually see quite a few people from Audubon and a few groups asking us to do more research, and I was wondering how much money they have put into the mix so far, but I guess I got my answer.

DR. JAIME GEIGER: What we have done in the Fish and Wildlife Service is we took the executive director's letter to all the conservation groups and the bird advocacy groups. What I have done is I have rewritten the letters, put them more of a focus on the benefits to the red knot community and the red knot species folks.

All those letters had gone out again under my signature hopefully this morning. So, again, we are reaching out to the bird groups one more time, making them aware of what the biomedical industry has put forward, what the fishing industry has put forward, and again requesting them to support the ARM Model as well as the necessary data needed to support the ARM Model.

In addition, we have reached out to our Assistant Director of Migratory Birds in Washington, D.C., and we're pursuing some other opportunities with both him and our new science advisor to try to identify some funds to also support these efforts. Again, I'll be quite frank; I'm very disappointed at the lack of response by the various conservation groups and the bird advocacy groups so far. I'm hopeful that they will recognize the value of what this commission has done, recognize the value of what our scientists have done on the ARM Model and how important that data is for continuing conservation for both horseshoe crabs and red knots.

CHAIRMAN O'CONNELL: Thanks, Jaime, and I appreciate your efforts to try to get some positive reaction from the shorebird groups. Pat.

MR. PATRICK AUGUSTINE: Mr. Chairman, I assume that somewhere before the meeting is over we will get a report on the increase in shorebirds as a result of the cuts that the board has laid on all of our states in harvesting horseshoe crabs. Will there be a report that gives us a clue as to how the shorebird population has exploded since we have reduced the commercial harvest of horseshoe crabs?

CHAIRMAN O'CONNELL: It's my understanding that's not on today's agenda, but that information can be prepared. We do review it annually but it's not on today's agenda. I think we did that earlier last fall or last summer, but we will put that on the agenda for perhaps August or November meeting when that information is available. Any other comments or questions on this agenda item? Ritchie.

MR. G. RITCHIE WHITE: Mr. Chairman, just a suggestion that if more donations come in, Vince has kind of been sending out an e-mail keeping us up to date, and that would be appreciated if he could continue to do that.

CHAIRMAN O'CONNELL: Good suggestion. All right, I'm going to have Jeff Brust give an update on the Delaware Bay Ecosystem Technical Committee Report. While Jeff is getting ready, recall that the Adaptive Resource Management Model that this board approved for management use provides an optimization harvest level for the Delaware Bay Region.

If we're going to utilize it, we need the benthic trawl survey to continue and we also need to develop an allocation methodology for the four states, New Jersey through Virginia. The board tasked this group to begin to explore some of the technical aspects of allocation, and Jeff is here to provide an update on that work.

DELAWARE BAY ECOSYSTEM TECHNICAL COMMITTEE REPORT

MR. JEFFREY BRUST: For those who don't know me, I am Jeff Brust with the New Jersey Marine Fisheries. I am the Chair of the Delaware Bay Ecosystem Technical Committee and Chairman O'Connell just gave you my first slide. As you remember, the Adaptive Resource Management Model provides a recommended harvest and optimum harvest for the Delaware Bay Region as a whole.

It does not parse it among the states, so the ARM Subcommittee has been working on an allocation

strategy to divvy the recommended harvest from the ARM Model among the states of New Jersey, Delaware, Maryland and Virginia. These are the states that we consider are harvesting against the Delaware Bay population.

I believe this board was given an update or a preliminary look at the allocation strategy at their November meeting, and the board requested that it be reviewed and have the Delaware Bay Technical Committee look at it to provide guidance. We met a couple of times by conference call and by personal meetings.

There were four main issues that the technical committee identified. I'll go through these in more detail in a minute, but just to give them up front, the proportion of each state's harvest that is coming from the Delaware Bay population was the first one we looked at. Each state's proportion of the total Delaware Bay harvest was the second.

We considered a harvest cap to protect non-Delaware Bay crabs and sort of a bycatch allowance, the Delaware Bay stock allowance to allow harvest of Delaware Bay crabs if the ARM Model recommends a moratorium on either males or both males and females from the Delaware Bay stock.

Since none of these issues aren't really independent, the decisions that are made at the board will have to consider their decisions on each of these issues at the same time. None of them are independent. Before we got going, the first thing we had to do was to define what we meant by of Delaware Bay origin, and the technical committee basically just adopted the definition that the ARM Subcommittee came up with.

Any crab that spawns at least once in the Delaware Bay during its lifetime is considered to be of Delaware Bay origin. Throughout the development of the ARM Model, we have assumed that some level of crabs in each state's harvest coming from Delaware Bay is of Delaware Bay origin, but until now we haven't actually tried to quantify that level.

To make it a little easier for us, we're calling this proportion of Delaware Bay origin and I'll be referring to it as lambda throughout this presentation. In New Jersey and Delaware, given the timing of their fisheries and where they occur, we're assuming that all of the crabs in these two fisheries are from Delaware Bay.

One hundred percent of the crabs harvested in Delaware and New Jersey are of Delaware Bay origin. That's the current assumption right now. Maryland and Virginia were a little bit more difficult. They seem to be harvesting from multiple populations, so we looked at a couple of different methods to try and estimate how much is coming from Delaware Bay.

We looked at tagging data and some genetics data and we also had a default value, and I'll get into each of these in a minute. I'll give you recommendations on each of these. One thing to consider is the risk level to the Delaware Bay crabs. The first option we looked at was the default option. As I said, New Jersey and Delaware are assumed to be a hundred percent.

Default value for Maryland and Virginia is also 100 percent. This would mean all the crabs harvested in New Jersey, Delaware, Maryland and east of the COLREGS Line in Virginia would be considered from the Delaware Bay stock. This is the maximum value possible. It's not based on any data but it is the risk averse to the Delaware Bay crabs/

We do have data that suggest that this is not the right number, so we don't believe that these values are realistic, but it is an option for the board. The technical committee does not recommend this, but it's there for your consideration. We also had a great tagging data base available to us, the Fish and Wildlife Service tagging data base.

Thousands of crabs have been tagged over the years. Many of them have been re-sighted. The tagging work was not done specifically to identify the spawning location for these crabs, but we tried to mine this data to see if it would provide some insight. This analysis is based on available data but it was data collected for other purposes. You've seen the table on the right-hand corner. Again, New Jersey and Delaware, it's assumed 100 percent.

For Maryland and Virginia, it you'll let me round off, it's about 10 percent of the crabs harvested in these two states based on the tagging data are assigned to the Delaware Bay population. We didn't think these values were realistic either. We think there are some assumptions with the tagging studies that have been violated by using this data; and if these values are wrong, it is a high risk to the Delaware Bay crabs.

If we implement these numbers and we're wrong, we would be underestimating the number of Delaware Bay crabs that were being harvested. Again, the

technical committee does not recommend this, but we're providing it as an option. Finally, we had some genetics data that had been collected 15 or 20 years ago; again for different reasons, but we thought we would try to mine this data to see if it provided insight into the spawning source for the harvest.

We're looking at 50 percent for Maryland and 35 percent for Virginia of the crabs harvested east of the COLREGS Line. These values seemed the most credible to the technical committee. This is based on expert opinion. We do have a genetic biologist on our technical committee. Based on his knowledge of the stock and the work that he has done, he thought these were pretty reasonable.

They merge with some tagging studies that were done back in the eighties, and so overall the technical committee was most approving of these data. If these numbers are wrong, it's a moderate risk to Delaware Bay crabs, and so the risk level isn't too high. This is the Delaware Bay Technical Committee's preferred alternative in terms of Lambda. I'll stop there and if see if there are any questions on this. This is just the first issue. We've got three more to go through; so are there any questions on this so far?

MR. JACK TRAVELSTEAD: You mentioned the genetics data were 20 years old; did you hear you correctly, and so were the tagging data?

MR. BRUST: The tagging data has been going on for 15 or 20 years, but we're still releasing tags and getting recaptures every year.

MR. TRAVELSTEAD: But the genetics data were 20 years old?

MR. BRUST: The genetics data I believe were collected in the mid to late 1990's just to help identify different populations of horseshoe crabs.

MR. TRAVELSTEAD: Is there any reason to believe that the genetics of the stocks has changed and that's why they're not matching up with the more recent tagging data?

MR. BRUST: I am not a geneticist so it's hard for me to say anything about whether I think the genetics of the population has changed. My understanding, though, is we need very little genetic drift among the different spawning groups to keep the population of the genetics the way they are. I think the biggest difference between the genetics data and the tagging data is the reliability of the tagging data.

We're tagging on the spawning beaches. We're not getting any recaptures from the fishing industry. We're seeing them all again on the spawning beaches. That doesn't tell anything about where they're being captured. We tried our best but the data isn't available to answer the question that we're asking it. That's my understanding.

This is just a summary of the three options that we had for this Lambda value put all on to one slide so you can see them side by side. The default value was all states are assumed 100 percent of the crabs are coming from Delaware Bay. We didn't think those values were credible, but it was the lowest risk to the stock.

Tagging data, we weren't too comfortable with the data and the values that they were giving us were – there was consensus that these values seemed pretty low, so we weren't too comfortable using these numbers either. The genetics data which gives moderate numbers and are support by some of the work that has been done elsewhere, those seemed to be the preferred option.

Okay, moving on to the second issue, the allocation proportions, when the ARM gives us the optimum harvest that come from the Delaware Bay population, how do we divvy it up among the states? We talked about this at the technical committee level for a while and came down to the decision that it's not really a technical decision. It is a board decision, it's a policy decision, so there will be no technical committee recommendation on this.

However, we will give you a number of options that we thought were credible options for you to consider. These include basing the proportional allocation among historic harvest levels, recent harvest allowances or estimated population size. The first two, the ones based on harvest, of course, we have to incorporate our value of Lambda. The different values of Lambda will give us different proportions.

Historic harvest levels, this describes the true proportional harvest without any management in place; so if the states were allowed to just go harvest and everything was brought back to shore and we parse it out by population, this would be the actual true population distribution. Recent harvest allowances, these would be based on board-accepted harvest levels, so this is under the assumption that you are all comfortable with the current harvest that you have gotten, so you could say that you were all comfortable with their proportional allocation of that harvest.

Last, we have the estimated population size. This would be based on the Virginia Tech Trawl Survey. We think in 2010 there were slight changes to the methodology. This is probably the best data that we have available. One concern, though, is that the survey was not developed to estimate population size by state, and that's what we're actually trying to do if we use this, so we might be stretching the utility of the survey to its bounds if not beyond. But it is an option and over time we can probably rectify that by changing it slightly.

Just to put things into perspective, if we assume the technical committee's preferred Lambda values, this is what the harvest allocations would look like for the three different options. These are percentages. If we base it on historic harvest levels such as the reference period landings of the Addendum I harvest allowances, New Jersey would get about 40 percent, Delaware about 30 percent, Maryland 20 percent, and Virginia east of the COLREGS Line would get about 5 percent.

If we base it on recent harvest allowances, not the actual harvest but the harvest allowances in Addendum IV, New Jersey, Delaware and Maryland are all getting roughly 30 percent and Virginia jumps up to 7. If we base it on the population estimates from the Virginia Tech Trawl Survey, a portion of New Jersey and Maryland's harvest would be allocated to Maryland.

They go down a little bit; Delaware bumps up a little bit and Virginia stays the same. Again, these are based on the technical committee preferred Lambda values. If we go with higher Lambda values for Maryland and Delaware, their proportions would increase. If we go with lower Lambda values for Maryland and Delaware, their proportions would decrease. Any questions on this?

CHAIRMAN O'CONNELL: Any questions for Jeff? All right, we've got two more issues.

MR. BRUST: Moving on to Issue 3, consideration of a harvest cap for non-Delaware Bay crabs, this is not a concern if Lambda is considered 1.0 for all of the states, but for the states that have a Lambda of less than 1, they would be assumed to be harvesting from multiple populations. Since most of the harvest strategies from the ARM Model are greater than our current harvest, if a state was allowed to increase their harvest of Delaware Bay crabs, they would also have to increase their harvest of non-Delaware Bay crabs.

Right now we have no information to support the theory that these non-Delaware Bay populations could support an increase in harvest. This is sort of a management – we're trying to prevent a shift in effort to these non-Delaware Bay populations. Here is an example for you. Again, the assumption that the technical committee preferred Lambda's, if we assume harvest allocation based on recent harvest allowances and the ARM Harvest Option 3, which is a 500,000 male-only harvest, currently Maryland harvests around 170,000 crabs.

Given the Lambda of 51 percent, about 87,000 of these crabs are coming from the Delaware Bay population and the remaining 84,000 from other populations. If we went with the 500,000 crab harvest, given their allocation, they could increase their Delaware Bay population harvest to 141,000 crabs from 87,000.

In the process of taking these 141,000 crabs, they'd also increase their harvest of non-Delaware Bay crabs from 84,000 to 136,000. This is an increase of about 60 percent. Similarly for Virginia; currently they harvest 21,000 crabs east of the COLREGS Line from the Delaware Bay population. With a 500,000 crab harvest, they could harvest 35,000 crabs and it would bump their non-Delaware Bay harvest also by about 60 percent.

Because we're not sure that the non-Delaware Bay populations can support this increase in harvest, the technical committee is recommending a cap for the states that have a Lambda less than 1.0. We looked at a number of different caps based on historic management. Basing it on reference period landings was one option, but this would not be restrictive under most circumstances. Only in the most extreme harvest levels would this be effective.

The same with Addendum I, the caps are much higher than the current harvest, and so they would not be restrictive. Addendum III is where the harvest came way down in Maryland, but we didn't like this one because in Virginia it doesn't take into the account the provision to split Virginia's harvest east and west of the COLREGS Line, but Addendum IV does so that was the big change between Addendum III and Addendum IV. Virginia split their harvest; I believe it's 40 percent can come from east of the COLREGS Line.

A fifth option would be basing it on average landings. This would be the most restrictive. The current average right now is lower than – excuse me, the most recent three-year average is lower than the

current harvest so this would be more conservative. The technical committee recommendation is for Addendum IV harvest levels.

Having no cap would increase the harvest of non-Delaware Bay crabs, and there is no information to indicate that these populations could support an increase in harvest, so the technical committee recommendation is to implement the harvest cap and our recommendation is to set those caps at the Addendum IV harvest levels.

As I said, right now we don't have information on these non-Delaware Bay populations, but we can revisit this in the future. Most likely at the next stock assessment this is something that we could look at to see if those stocks could support an increase in harvest. Any questions on Issue 3?

MR. ADLER: This whole scenario here is based on Delaware Bay crab and non-Delaware Bay crab, but in those states, correct, or the whole coast?

MR. BRUST: This would be for New Jersey, Delaware, Maryland and Virginia; those four states. Okay, this last issue, we're calling it the Delaware Bay stock allowance. Again, this is not a concern if Lambda is 1 – excuse me, it's not a concern if Lambda is less than 1 – excuse me, I can't read my own slide.

It is only an issue if Lambda is less than 1 and the ARM recommends a moratorium on either females or both males and females. The concern is that when we pull a crab up off the bottom we can't tell where it comes from. So if you have a moratorium on Delaware Bay crabs, you can't ensure that you will keep that moratorium if you're allowing harvest of non-Delaware Bay crabs.

If you want to ensure a moratorium, you have to require a moratorium on those non-Delaware Bay crabs. As a compromise, the technical committee devised this Delaware Bay stock allowance which would allow some essentially bycatch of Delaware Bay crabs while you're harvesting non-Delaware Bay crabs.

Again, the technical committee decided that this was a policy decision. This is not something that the technical committee can make a decision on, so we don't have a recommendation for you. We did look at a number of different examples just to put things in perspective for you, and I'll run through a couple of those in just a minute.

Basically we're looking at 1 percent or 5 percent of recent harvests in either all of the states coastwide or just the Delaware Bay states. We looked at 1 and 5 percent, but obviously if the board has a specific number in mind, we can go back and run the numbers and see what those look like. An example for you, again with the same assumptions, the technical committee preferred Lambda's allocation based on current harvest allowances, Harvest Option 3.

If we assume an Addendum IV harvest cap, Harvest Option 3 requires a moratorium on females, so you can see in the first column there Maryland would be given 170,000 crabs total from Delaware Bay and non-Delaware Bay; none of which could be females. If we allowed a 1 percent stock allowance based on coast-wide landings, they would be allowed to harvest 3,000 females from the Delaware Bay population and about 2,900 from the non-Delaware Bay population.

Similarly, Virginia would be given, with a 1 percent stock allowance, about 2,100 crabs for a total of 8,000 females from the two states under Harvest Option 3. If there is no stock allowance, there are no females from either the Delaware Bay stock or the non-Delaware Bay stocks.

So just the four examples side by side, we're looking at anywhere from about 3,000 crabs if it's 1 percent based on just the Delaware Bay state harvest up to about 40,000 crabs if we look at 5 percent based on coast-wide harvest. Again, we don't have a technical committee recommendation. These are just for examples for you to look at and chew on for a while. Any questions on this Issue 4 specifically?

MR. TRAVELSTEAD: Mr. Chairman, are you just looking for questions right now or at some point will you entertain suggestions or changes.

CHAIRMAN O'CONNELL: Jeff, how much more do you have in your report?

MR. BRUST: I have one more slide. I just want to make sure everyone was comfortable with what I've put up on the slide. I've got one summary slide that summarizes the technical committee's recommendations for the four, and then I'm done.

CHAIRMAN O'CONNELL: My suggestion would be to let Jeff finish and then I just want to give my thoughts to the board on where we need to go with this, and then we'll open it up for some questions and discussion.

MR. BRUST: Okay, my last slide here is just the four issues in summary. The proportion of each state's harvest that comes from Delaware Bay, the technical committee recommendation is New Jersey and Delaware are a hundred percent; Maryland is 51 percent; and Virginia is 35 percent. The allocation baseline, we thought this was a policy decision but provided a number of examples for you basing it on historic harvest, recent allocation or population size.

Consideration of a non-Delaware Bay harvest cap, we recommend that a cap is in place and that it be set at Addendum IV harvest levels; and then the Delaware Bay stock allowance again was a policy decision, and this issue specifically and any of them can be revisited if the board has specific options you want us to look at or as new data become available. That is my report.

CHAIRMAN O'CONNELL: Thank you very much, Jeff. My thoughts on how the board's discussion should focus is where do we go next, whether or not there is additional work that the technical committee needs to put into this or if there are anymore minor changes that we can have incorporated into this document. I think what we're trying to do is try to get this document sufficient enough where we can provide it to the Horseshoe Crab and Shorebird Advisory Panels.

Recognizing that this is an allocation decision, I think the board would be very interested in hearing from the users on these issues before we would take something out for public review through an addendum process. I'm interested in discussion and questions in regards to whether or not this document is close enough where we can forward it to the advisory panel or there if there is additional work for which the technical committee should continue working on. Any questions or comments? Peter.

MR. HIMCHAK: Mr. Chairman, as far as forwarding to the advisory panels, my first question to Jeff is under these new committee structures that we established, this Delaware Bay Ecosystem Technical Committee, is it working out pretty well, everybody getting along? I think the way it was set up was that the chairpersons of the Horseshoe Crab Advisory Panel and the Shorebird Advisory Panel were supposed to be members of the group and not sit in the public, and I just had questions on how that is working out because I see invited guests and public participants.

The other comment I had is when talk about Addendum IV with New Jersey's allocation, yes –

well, you and I discussed this – we had an allocation but we had a moratorium so there was no harvest. I just want everybody to be aware of that.

And then the other point I just wanted to make is the effect of our moratorium, there were noticeable repercussions in both New York and Massachusetts, if I recall correctly, on displacement of fishing effort. Again, yes, it seems to be a pretty good product here coming out of this Ecosystem Technical Committee, and is the structure set up where it's working as well as it was designed?

MR. BRUST: At the technical committee level I thought it went very well. We had consensus which is unusual for this group of people at some points, so, yes, I thought it worked well. As far as the APs being there, we had some AP members there. I'm not sure if they were the chairs and the invitation I can't speak to, but maybe Danielle can.

MS. BRZEZINSKI: Yes, the Horseshoe Crab Chair, Jim Cooper, was invited. He wasn't able to make it. The Shorebird AP has not had a formal meeting yet and so Gene Woods came as the representative. As soon as we have a Chair, absolutely, that particular person will be invited.

MR. TRAVELSTEAD: I agree with Pete; I think the document is just about ready to go to the advisory panels for their review and comment. I do however have one suggested change and that's under the Decision 4, the Delaware Bay stock allowance issue. As Jeff indicated, this is not a technical issue, if you will, like the issue of Lambda which is based on genetics or tagging.

This is a policy call. I think it would be helpful to add some additional options in those tables under Decision 4 to provide a broader range of options. Right now we're looking at 1 percent and 5 percent. I would prefer if we could broaden that out all the way up to status quo.

I don't know what that number is, but I want the AP and the board to be able to understand where these values are relative to status quo and other numbers. If we could add at a minimum 10 percent to the table and then whatever numbers associated with status quo, I think that would give the broadest possible set of options to consider.

CHAIRMAN O'CONNELL: I think that would make sense, Jack. I think the board needs to understand what the potential impacts are from a status quo situation, so does anybody disagree with

having that added to this document? All right, Danielle.

MS. BRZEZINSKI: Jack, if I could ask a clarifying questions, by status quo do you mean average landings or the current Addendum IV quota like for Virginia for what would be east of the COLREGS?

MR. TRAVELSTEAD: Yes, Addendum IV I think would be the appropriate number.

MR. AUGUSTINE: Mr. Chairman, just one final note, on one of these slides you also suggested there might be other board options. If we're not going to have any other board options, maybe we don't need that line on there. One of the elements at the bottom said you gave three or four recommendations.

Somewhere in the presentation you had one line if there were other options that the board might suggest. We don't have any so if it doesn't show up on the document – I think Mr. Travelstead hit it right on target as did Mr. Himchak – we should move it forward. It sounds like we're beyond that point right now from what –

MR. BRUST: I think it would be very easy to add the options that Mr. Travelstead is requesting and any of the other changes. It won't be hard to add those.

CHAIRMAN O'CONNELL: Any other questions or comments? Peter.

MR. HIMCHAK: I just had one other comment. It is most advisable to move ahead with the addendum and discuss the allocation issue. Despite the uncertainty of the funding of the Virginia Tech Trawl Survey, we have the fallback of the current addendum and hopefully – it's unfortunate we have to go beg, borrow and steal for money to fund a vital ingredient to the ARM Model, but, yes, this looks like it's ready for primetime.

CHAIRMAN O'CONNELL: Thanks, Peter. Is there anybody in the public that would want to make a comment on this at this time? Okay, I don't know if we necessarily need a motion, but is there any objection that we add the modification that was recommended by Jack and we move this forward to the advisory panels and have that brought back to us August? All right, then we'll proceed in that manner. The next agenda item is FMP review, Danielle.

FISHERY MANAGEMENT PLAN REVIEW

MS. BRZEZINSKI: I just wanted to give you guys a current update as to where we are in terms of the total harvest preliminary for 2010. Overall the harvest levels for 2010 were lower than they were in 2009. The totals were about 594,000 crabs for 2010, although the biomedical harvest did go up. As I said, coast-wide landings were about 594,000. Those are down about 21 percent from 2009.

Where we saw the largest decreases were Massachusetts, Delaware, Virginia and North Carolina. Those are the large decreases we saw compared to 2009 harvest levels. In terms of the 2010 biomedical harvest, the reported number of crabs brought to facilities was about 548,000, close to 549,000, which was a 24 percent increase over the past five-year average. Overall coast-wide mortality – and this is the mortality that's not counted against the state bait quotas – was estimated at about 75,000 crabs. This level is over the threshold trigger that was included in Addendum III, and that trigger is to consider board action. That trigger is set at 57,500 crabs.

The mortality estimate was about 24 percent higher in 2010 than it was in 2009. This also comes on the publication of a study based on biomedical practices that was done in Massachusetts that estimated the post-bleeding mortality to be closer to 30 percent. Currently the PRT uses an estimate of 15 percent of post-bleeding mortality to come up with our coast-wide mortality estimate figure.

As a result of the increase in mortality and being over the current threshold trigger, the PRT would like to recommend that the board consider asking the technical committee and perhaps the APs as well to work with the biomedical industry to develop some sort of guidelines for best management practices.

In terms of state compliance, the PRT recommends that all states be found in compliance. D.C. did not submit a compliance report, and the PRT does recommend that D.C. as well as the Potomac River Fisheries Commission ask to be removed from the board due to the fact of very low levels and they were originally included on the board to shore up a loophole that D.C. has shored up and I believe the PRFC is working at as well.

The one issue that the PRT wanted to raise specifically in terms of state of compliance was Virginia has a current two-year overage of about

21,500 crabs, and this comes on the heels of a 2009 overage that was closer to about 35,000 crabs, if I remember correctly. The PRT recommends at a minimum a decrease in the 2011 quota and suggest that Virginia consider other quota deduction or control options, potentially an area-specific option as Virginia's quota is dictated in Addendum IV through Addendum VI that not more than 40 percent of a harvest come from east of the COLREGS.

The PRT also requests that Virginia reconsider its methods to identify and address the overage. One other note that the PRT made note of in the compliance report was just that for states to be aware of the different monitoring requirements and to be sure that they meeting them. There aren't any specific concerns; just some reoccurring minor concerns that they had are listed in the report.

Finally, we had six requests for de minimis from Maine, New Hampshire, PRFC, South Carolina, Georgia and Florida. New Jersey qualified for de minimis but did not request it. The PRT does recommend that all requests for de minimis be granted. That's all I have.

CHAIRMAN O'CONNELL: Thank you. I see there being potentially five issues for the board to discuss. Two of them I think we can address right up front. In regards to the District of Columbia and Potomac River Fisheries Commission, I would suggest that the board direct staff to follow up with both of those jurisdictions and raise the question to them. Is the board okay with doing that; any objections? All right.

And then one other thing is if you looked at the plan review team report underneath the tables for each state, I noticed that several states are not following exactly the monitoring requirements that are required in the compliance reports. I would just ask all of you to work with your staff to try to work on that for next year. We don't want to stray too far away from what the requirements are from the plan.

Thirdly, we have the Virginia overage issue. Fourth is de minimis request and then lastly is the biomedical harvest increase. What my suggestion would be is let's start with the biomedical and then we'll talk about Virginia and then de minimis. On the biomedical issue we saw an increase over the last five years.

The plan review team is suggesting that the board task the technical committee and perhaps some of the Biomedical APs to look at best management

practices, encourage their companies to utilize those. Any discussion or question from the board? Pat.

MR. AUGUSTINE: Mr. Chairman, did the biomedical industry come forward – were there any suggestions as to why they had this significant increase in mortality? Could it be temperature, could it be process, could it be best management practices aren't being followed? It could have been some of the crabs were overbled; I don't know. Have they come forward with any suggestion as to what might have contributed to it or are you going to rely on the technical committee to do a followup and find out specifically?

CHAIRMAN O'CONNELL: Good question, Pat. In just my limited discussions just prior to the meeting is that there has been some concerns raised regarding that most recent study and whether or not that study followed the typical management practices by that company, so maybe the study is not representative of the mortality for that company.

I've also learned just prior to the meeting that the other companies are looking at some studies of their own and maybe that information would be available soon for the board. The other companies I've heard do not believe the mortality is even at 15 percent. I applaud them for taking it upon themselves to do more studies to try to look at that more specifically. Peter.

MR. HIMCHAK: Mr. Chairman, I just wanted to put this number in perspective. We've reduced the harvest from the reference period landings of about 3 million horseshoe crabs to 500,000, and now we have the biomedical increase of 20,000 horseshoe crabs over a number of 58,000 that was kind of like arbitrarily selected years ago, so this additional mortality in horseshoe crabs to produce a life-saving drug or products – I mean, yes, I would just ask them to see why it has gone up and recommend no further management action.

CHAIRMAN O'CONNELL: Any other comments from the board on the biomedical harvest? We'll let Allen come to the mike and see what he has to say regarding the biomedical issue.

MR. BURGENSEN: Mr. Chairman, the numbers that you've seen, the increase is basically due to demand from the pharmaceutical and medical device industries. You have a fixed number at 15 percent; so if we harvest more crabs, even if more don't die, the 15 percent automatically raises that number for us.

Our data shows and I've presented it to this body before between 3 and 5 percent mortality, so we strongly dispute the 15 percent mortality rate. If our customers, the pharmaceutical and medical device companies, demand more product from us and we harvest more crabs to provide them with that product, even if our mortality doesn't go up, it artificially by the 15 number goes up.

MR. AUGUSTINE: Mr. Chairman, followup. Thank you for that, Allen, but by the same token we have restricted the commercial fishermen from harvesting X-amount in each of the states. In the state of New York we could harvest actually 366,000 horseshoe crabs; but because some group was interested in reducing that, and being like all the other states our fishermen are limited to 150,000.

So in that instance it doesn't matter, if they go over they're charged with it. In your case it's a lifesaving product you're developing and supplying, but I don't think the plan was set up to allow for any increase unless I misunderstood it, and maybe this board has to take some action to allow the use of those crabs for those purposes. I may stand corrected; can anyone clear me up on that, Mr. Chairman?

CHAIRMAN O'CONNELL: Yes, Pat, my understanding is that there is a trigger within the FMP of about 57,000 crabs and it just requires an evaluation by the board as whether or not any action should be taken or not.

MR. AUGUSTINE: Fair enough; would it require any action for us to increase that? That's a trigger, but would it require action by us to move that trigger up?

CHAIRMAN O'CONNELL: Yes, I'm being advised by staff that it would require action through an addendum.

MR. AUGUSTINE: Follow-on, Mr. Chairman; so in your opinion, Allen, it appears that the demand for the product is going to continue? I mean, you've been at it for a long time –

MR. BURGENSEN: Yes.

MR. AUGUSTINE: – and as your counterpart back there and you've come – not you; more often she has come to talk about the demand and need; so if this is an ongoing need for increased product, then it sounds like we as a board have to take a look at that and have our technical committee review with you what you think the trend is going to be and if in fact we can

help support that need if the stock can bear it. I think I'm correct in that, Mr. Chairman.

CHAIRMAN O'CONNELL: Yes, I think that's the direction we're going with the suggestion to have the technical committee further look into this issue, look at best management practices, and perhaps their report can be the basis of whether or not this board needs to consider action. Jaime.

DR. GEIGER: Mr. Chairman, that's exactly what I was going to recommend to the board. I do think I would refer this to the technical committee. I do believe the real issue is what is the post-bleeding mortality of horseshoe crabs? I think our technical committee is best suited to evaluate that.

If there are problems with different areas or different studies showing different results in mortality, then let the technical committee put those recommendations on the table and we can have that further debate. Certainly, best management practices are to be strongly encouraged by all, and I would hope the biomedical industries are indeed doing that voluntarily, and I understand they are, but I do think that our technical committee should be charged with that analysis and bringing those results back to this board. Thank you, Mr. Chairman.

MR. BURGENSEN: Can I just follow up; as I presented several years to this committee, every injectable pharmaceutical product and every implantable medical device is required by the Food and Drug Administration to be tested with our product. The pharmaceutical and medical device industry as they develop new products are required to test with our products; and so as the number of products on the market from pharmaceutical industries increase, so does the demand for our products.

I can only see the trend going up. The LAL test right now is the only test in the United States Pharmacopoeia approved to test pharmaceuticals and medical devices for endotoxin content. By law they are required to use our products.

DR. GEIGER: I certainly appreciate that but I think the whole issue is post-bleeding mortality. Again, if the biomedical industry requires more animals to do that, certainly that's understandable; but certainly I think with the judicious use of best management practices, I think the overall post-bleeding mortality can be significantly reduced.

Then hopefully we can show less mortality on this. Again, I want to verify – I would like to see some of the results of the latest studies. I would like to have our technical committee verify those and report back to this board. Thank you.

CHAIRMAN O'CONNELL: Well, I think the board has recognized over time the importance of this product and that is why there is a clear objective in the plan and why the board has been relatively lenient with the trigger. We do need to pay attention of it; and without an objection, let's go forward and task the technical committee to further evaluate this issue and bring it back to the board. Any objection with that? All right, thanks; and thanks, Allen. That leads us to the Virginia overage issue; Jack.

MR. TRAVELSTEAD: First let me assure the board that Virginia is as disturbed about our second year of overages as the PRT is concerned. We do intend to make yet another series of significant changes to our regulations to try and stop this. The problem is it is a small quota fishery, 152,000 crabs. It is very intense over a short period of time. Even with call-in provisions, it is difficult to capture the fishery before it's over quota.

To sort of help this along, we have invited all the participants of the fishery in Virginia to a little prayer meeting Monday night and have discussions with them where we will be considering a number of changes, including cutting the trip limits in half and actually dividing the total quota up into gear-specific quotas. I think that will allow for some buffer, if you will, so that we lessen the possibility of going over quota.

We'll also be adding yet some additional call-in provisions for folks who were previously exempt from calling in their catches on a daily basis. Again, at a minimum we'll deduct last year's overage from this year's quota so it will be significantly lower. I'm confident we can eventually get a handle on this. I know the commission is taking this very seriously, and I can assure you Monday night one of the points I'm going to make to the industry is you're now under the ASMFC microscope; and unless we fix this, there could be serious consequences. I think that will get their attention.

CHAIRMAN O'CONNELL: Thanks, Jack. Jaime.

DR. GEIGER: Certainly, I appreciate the Reverend Travelstead's emphasis and I know that he will be very effective on Monday night at the prayer session. I certainly appreciate all of Virginia's concern and

focus on horseshoe crab conservation, and I certainly appreciate it. Thank you.

CHAIRMAN O'CONNELL: All right, the last two items are we need to take action on the de minimis requests and then we'll have to have action on the FMP Review. Pat.

MR. AUGUSTINE: **Mr. Chairman, I move that the following states that requested de minimis status be granted de minimis status, Maine, New Hampshire, PRFC, South Carolina, Georgia and Florida.**

CHAIRMAN O'CONNELL: Bill Adler seconds; move to approve the request for de minimis by Maine, New Hampshire, the Potomac River Fisheries Commission, South Carolina, Georgia and Florida. Motion by Mr. Augustine; second by Mr. Adler. Any discussion? Any public comment? All those in favor please raise your right hand; all those opposed raise your right hand; any null votes; abstentions. **The motion is approved.** Pat.

MR. AUGUSTINE: Another motion, Mr. Chairman, **move to accept the 2010 FMP Review as presented.** Did we have any clarifications on that, Mr. Chairman; I don't think we did?

MR. ADLER: I didn't know when to pop in on this. I did have a question about the report with regard to how the assessment in New England comes up with a reduction or a decline in the abundance; is that done via the landings of or is there some other collection that's put into that assessment?

CHAIRMAN O'CONNELL: Bill, hold on for one second; we've got a motion that was made. Let's make sure we get it captured correctly and see if we have a second and then I'll come back to you. We have a motion to accept the 2010 Horseshoe Crab Fisheries Management Plan Review. Motion by Mr. Augustine; second by Terry Stockwell. Okay, Jeff, did you hear that question?

MR. BRUST: Yes, I understand the question. It was how the decline in the New England states was identified. I believe it was with the trawl survey data. There were a number of trawl surveys. There is one in Paconic Bay. There are a number in Rhode Island. I don't remember which one specifically we looked at for horseshoe crabs, but I know it was based on trawl survey data.

MR. ADLER: Okay, so in other words it was not just on landings so if there was less fishing, like in

Massachusetts, that wasn't the reason for the word "decline".

MR. BRUST: Right, that's correct.

CHAIRMAN O'CONNELL: Thank you, Jeff. Any other questions on the motion? Any public comments? I'll call the question. All those in favor please raise your right hand; all those opposed please raise your right hand; any null votes; any abstentions. **The motion carries.** The next agenda item is nominations for committees. Danielle.

NOMINATIONS FOR COMMITTEES

MS. BRZEZINSKI: I'll do the appointments to the Horseshoe Crab Technical Committee and Stock Assessment Committee first. New York has selected Rachel Sisak to replace John Maniscalco on the Horseshoe Crab Technical Committee and the Stock Assessment Committee. In terms of nominations, New Jersey has nominated Dr. David Mizrahi to the Shorebird Advisory Panel. He is replacing Don Freiday who had to step down for another position. Dr. Mizrahi is the Vice-President of Research for the New Jersey Audubon Society and was a member of the Shorebird Technical Committee and has been performing shorebird research in Delaware Bay since 1994. Thank you.

MR. AUGUSTINE: **Mr. Chairman, I move to approve the nominations as presented.**

CHAIRMAN O'CONNELL: Move to approve the nomination of Dr. David Mizrahi to the Shorebird Advisory Panel. Motion made by Mr. Augustine; second by Peter Himchak. Any discussion on the motion? Is there any objection to the motion? The motion carries. Is there any other business to come before the board? Jaime.

OTHER BUSINESS

DR. GEIGER: Mr. Chairman, I remember Pat asked the question have we any updates on shorebird status since the last meeting; and what I did do is I requested Annette Scherer, one of our biologists at our New Jersey Field Station to see if she can give me a quick summary. She sent me an e-mail and I would like to read it into the record, if I can, just for information.

"The Canadian Wildlife Service conducted aerial surveys this past winter and reported a substantial decrease in red knots in Tierra del Fuego from 16,260 last year to only 9,850 this year. A ground count in the Bahia Lomas Area of Tierra del Fuego one month

later, February 2011, by Larry Niles and biologists from Chile and the states of Delaware and New Jersey verified the decrease.

"The ground count was about 1,500 birds higher but was still 4,250 birds lower than counts in the previous year. Since few red knots have been found in recent years within historic peripheral wintering areas along the Patagonia Coast in Argentina, that area was not surveyed this past winter.

"Hopefully, the missing knots are wintering in that or another area. Surveys during the spring stopovers in Delaware Bay and coastal Virginia will lend insight into whether this is indeed another decline."

I will stop that report right now, Mr. Chairman, but I do know that we're on line, I believe, to get a much more substantial update from our Shorebird Technical Committee in our next meeting, but I just wanted to share that information with the board. Again, I would caution that this is still preliminary information, but it is somewhat disturbing to see this preliminary result. Thank you, Mr. Chairman.

CHAIRMAN O'CONNELL: Thank you very much, Jaime, for that update. One last item before we adjourn is in regards to the lack of response by the shorebird organizations. As stated earlier, the commission has sent several letters. It's been a little bit of time and I'm just wondering if the board would be interested in having the policy board direct Vince O'Shea to send another letter and see if we can shake something loose with an update letter. It won't hurt, I guess. All right, with no objections to that, we'll bring that up at the policy board and try to move that forward.

ADJOURNMENT

Is there a motion to adjourn the meeting? Okay, we've got a motion to adjourn the meeting and it's seconded. With no objection, the meeting is adjourned. Thank you very much.

(Whereupon, the meeting was adjourned at 2:50 o'clock p.m., March 23, 2011.)