

**PROCEEDINGS
OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
HORSESHOE CRAB
MANAGEMENT BOARD**

**February 10, 2005
Alexandria, Virginia**

These minutes are draft and have not been approved by the Horseshoe Crab Management Board. The Board will review the minutes during its next meeting.

ATTENDANCE

Board Members

Lew Flagg, Maine DMR	Bernard Pankowski, proxy for Sen. Venables (DE)
John Nelson, New Hampshire F&G	Pete Jensen, Maryland DNR
Bill Alder, Massachusetts Gov. Apte.	Larry Simms, proxy for Sen. Colburn (MD)
David Pierce, Massachusetts DMF	Bruno Vasta, Maryland Gov. Apte.
Eric Smith, Connecticut DMR	Ernest Bowden, proxy for Ms. Davenport (VA)
Lance Stewart, Connecticut Gov. Apte.	Kelly Place, proxy for Sen. Chichester (VA)
Fred Frillici, proxy for Sen. Gunther (CT)	Jack Travelstead, Virginia MRC
Gordon Colvin, New York DEC	Pres Pate, North Carolina DMF
Pat Augustine, New York Gov. Apte.	Damon Tatem, North Carolina Gov. Apte.
Brian Culhane, proxy for Senator Johnson (NY)	John Frampton, South Carolina DNR
Bruce Freeman, Chair, New Jersey DFG&W	Robert Boyles, South Carolina DNR
Ed Goldman, proxy for Asm. Smith (NJ)	Spud Woodward, Georgia DNR
Tom Fote, New Jersey Gov. Apte.	Tom Meyer, NMFS
Michael Kaufmann, Pennsylvania FBC	Jaime Geiger, US F&WS
Roy Miller, Delaware DFW	

Ex-Officio Members

Gregory Breese, US F&WS, TC Chair

ASMFC Staff

Bob Beal	Brad Spear
Nancy Wallace	Vince O'Shea

Guests

Mike Litchko, New Jersey Fisherman	John Merriner, NMFS
Benjie Swan, Limuli Labs	Pete Eldridge, NMFS
Perry Plumart, National Audubon Society	Dan Dugan, RFA
Gerald Winegrad, American Bird Conservancy	Perry Plumart
Desiree Groves, Audubon	George Danson, Limulus Labs
Rick Robins, Chesapeake Bay Packaging	Bill Cole, USFWS
Chris Hager, VIMS/Sea Grant	Anne Lange, NMFS
Gene Kray, proxy for Rep. Schroder (PA)	Steve Doctor, MD DNR
L. Scott Stewart	Lisa Callahan, Atl. States Fish. Journal
Aaron Hurd, DE DFW	Carl Shuster, VIMS
Cortney Atkinson, Cambrex Bioscience	Charlie Givens, NJ Waterman
Kathleene Sterling, Cambrex Bioscience	

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

TABLE OF CONTENTS

BOARD CONSENT	5
PUBLIC COMMENT.....	5
PLAN REVIEW TEAM REPORTS	10
STOCK ASSESSMENT FRAMEWORK	13
DELAWARE BAY STUDIES	14
ADVISORY PANEL NOMINATION	23
OTHER BUSINESS.....	24

INDEX OF MOTIONS

1) Move to grant *de minimis* status to ME, NH, PA, PRFC, NC, SC, GA, and FL. (pages 11, 12)

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

2) Move to approve the terms of reference for the horseshoe crab stock assessment as stated. (pages 13, 14)

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

3) Move to accept the nomination of John Turner to the Horseshoe Crab Advisory Panel. (page 23)

Motion made by Mr. Colvin, second by Mr. Nelson. Motion carries.

**ATLANTIC STATES MARINE FISHERIES
COMMISSION**

HORSESHOE CRAB MANAGEMENT BOARD

**Radisson Hotel, Old Town
Alexandria, Virginia**

February 10, 2005

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Presidential Suite of the Radisson Hotel, Alexandria, Virginia, Thursday, February 10, 2005, and was called to order at 8:00 o'clock a.m. by Chairman Bruce Freeman.

BOARD CONSENT

CHAIRMAN BRUCE FREEMAN: If board members would please take their seats, we'd like to begin this session. Everyone should have an agenda. The revised one is being passed out as we speak. I'd like for you to take a look at this to see if there's any additions.

We do have several actions, one under other business. There is an advisory nomination from New York we need to take action on. The Fish and Wildlife Service will, under other business, give us an update on the possible listing of red knot. Jamie Geiger will do that.

Are there any other items of business that anyone would like to add? All right, then we will proceed with the agenda as handed out.

All of us should have received the proceedings of the March 10th board meeting. Are there any changes, additions to those minutes? Seeing none, is there a motion to accept those? Mr. Adler; second, Mr. Nelson. All right, if there is no objection, we'll accept the minutes.

We have a place in our agenda for comments, for public comments. Is there anyone in the audience that would like to make a comment at this time? Yes, please come forward, Mike.

PUBLIC COMMENT

MR. MIKE LITCHKO: Yes, my name is Mike Litchko. At the last meeting here, I spoke

about the flawed trawl data information on the horseshoe crabs and how the information was skewed by the persona with and the Delaware trawl surveys that were used that Mr. Freeman and the state of Delaware, Stu Michels, had deemed to be not useful, yet they were used in the trawl data trend analysis.

This data has been used to show declines in the horseshoe crab and to make management recommendations on; yet, it was deemed to be no good and not useful, and you still used it. You used it because it was a trend, but the trend was skewed data.

The Delaware data of the trawl surveys were a trawl survey that was used for catching finfish in mid-water. And when the net sunk to the bottom, the horseshoe crabs crawled on it. When they pulled the net to the top of the water, they just counted the crabs that fell off of the net.

And that's some of the great surveys and trend analysis that was used here, just like the Rhode Island Survey which was a one-day count at any given month or time of the year -- one day.

These are major declines. These trawl surveys and data are not even useful, but yet you used that science. That's our best science. I believe that all this science here between that and the bird science that was used to make these recommendations from the state of New Jersey, New Jersey provided false information to the council.

The U.S. Fish and Wildlife also provided false information with New Jersey. I believe that there is a conspiracy here amongst U.S. Fish and Wildlife, New Jersey, to put restrictions -- actually to put the agenda ahead of the science.

And, New Jersey assessments of birds in the Delaware Bay were supposed to be a 50 percent decline, and we're all up in arms about these red knots being depleted, same thing in South America.

The fact is when they took a look at the bird banding studies, the Shorebird Technical Committee, and they took a look at New Jersey's assessments of populations for red knots, what the technical committee decided was that New Jersey's information on the red knots was not useful for assessing populations or trends.

It was no good. But when they took a look at the bird banding studies, they assessed the population in New

Jersey in 2001 at 110,000 -- or in Delaware, rather, at 110,000 red knots. At the same time, U.S. Fish and Wildlife did a study with New Jersey -- Kathleen Clarke, Alan Baker, called the Executive Summary -- and assessed the New Jersey population of red knots at 85,000 plus 10,000 in Virginia; yet, the Shorebird Technical Committee discarded all that information.

And it was U.S. Fish and Wildlife's information, but they didn't use it. What they used was Non-endangered Species, New Jersey's information that wasn't useful for assessing populations, but the Shorebird Technical Committee and the advisory panel used the bogus information instead of the real science information.

South America, New Jersey goes down there for one year and comes back and says there's a 50 percent decline. How can that be? In 2001 there was a 50 percent decline in red knots? What you don't know is that New Jersey and U.S. Fish and Wildlife, Brad Andrews, who analyzed that data, shielded the science that provided -- that the Canadians who did that survey, what they compared that survey to in the early years, what New Jersey compared a survey to was a Canadian survey that was done in the '80s.

And they said that there were 67,000 birds there in the early '80s and they declined to 29,000 in 2001. What U.S. Fish and Wildlife and Brad Andrews forgot, left out, was that that was only 20 percent of the population. They left out the rest of the percentage of that population.

And the trend analysis that was done and the bird populations that was done by the Canadians for the last 20 years showed that there was a 50 percent increase in red knots in 2001 in the Canadian 104 report, which back in the early '80s compared to today, that's a 50 percent increase. That was shielded.

That was omitted and left out, so that's why I say that there is a conspiracy amongst these people to show decline and to leave out the science and put politically charged information -- using politically charged influence to influence regulations not based on science, just based on the fact that this is what they want.

There is no -- another correlation is that they want to tell you that the birds fly non-stop from Tierra del Fuego all the way to the Delaware Bay, and this is the only place they can eat horseshoe crab eggs.

These birds leave Tierra del Fuego in mid-February

and reach here by the end of May. That's a long time to be in flight. That's impossible to be done. These birds stop all over before they get here to the Delaware Bay and eat on horseshoe crab eggs, and there's plenty of horseshoe crab eggs from Florida all the way up to Maine, actually all the way down in Chile because Chile has a population of horseshoe crabs down in Chile, so does Mexico.

The bird-banding studies in South America claim that 10 percent of the population of birds in South America -- there are six subspecies of red knots in South America. It would be impossible to assess a decline in the Rufus population of red knots considering back in the early 1980s, when all these studies were done, they were using the Cachinus subspecies of red knots, not the Rufus.

Also, the Shorebird Technical Committee omitted and shielded from everybody is that in the Delaware Bay there are two subspecies of red knots.

The early birds that come into the Delaware Bay are of the Rosalauri population, which do not winter in Tierra del Fuego. And those later birds that come in after the survey time period of May 24th, after that, where New Jersey omits all of those populations of birds come from South America; U.S. Fish and Wildlife, the Shorebird Technical Committee, and Brad Andrews left all that out.

They didn't want you to know that there was two subspecies in the Delaware Bay area of red knots, let alone the six subspecies that are in Tierra del Fuego.

The bird-banding studies are conclusive. They have birds down there that have tags on them of unknown origin. That means these birds are coming from Africa, Greenland, Iceland, Alaska, Peru, Panama. They all meet in Tierra del Fuego. It's impossible to assess a decline in South America when you have so many subspecies of red knots.

The omitting of all this science, the horseshoe crab data, the skewing of the horseshoe crab data from the Berkson study, from the Georgia information where they say that the male horseshoe crabs are larger than the female horseshoe crabs, that is not true, and that is in no place in this world is all of the male horseshoe crabs larger than all of the female horseshoe crabs.

This data is skewed seriously. The Delaware trawl data is skewed seriously. That's not even a trawl when it falls to the bottom and the crabs crawl on it. That's not a trawl. You're using a mid-water net.

The only way that you can catch horseshoe crabs is when they fall to the ground, when the net falls to the ground, they climb on it and you bring it up and you count them as they fall off or count them if they crawl in it.

That's not even designed to even catch a horseshoe crab. But these are major declines on the performance, on your trend analysis. And this is the kind of science that we are using here. This science is bogus science.

I was here for the weakfish thing here, and what I couldn't believe is that you're trying to say that the weakfish -- or the stripers are eating the weakfish and the birds are eating the birds. Come on, that's not what's going on here.

So what I'm asking is that I would like a federal investigation into the conspiracy of these organizations, these people that are involved in this, that they conspired to come up with this fraudulent science and all this information in order for them to receive federal, foundation, state, and international money, so that they can keep their agendas going for the next ten years.

So long as they keep fudging this science and making false claims, they're always going to be able to have money here. And it's up to this committee here to recognize the fraud that has been presented here and how the fishermen have suffered, how the state of New Jersey has suffered, the citizens have suffered from this.

Because of these regulations and all of this, the people aren't allowed to walk -- aren't going to be allowed to walk on the beaches. They're going to start taking the inlets from them based on bogus bird science. And it needs to start right here.

CHAIRMAN FREEMAN: Mike, you need to conclude your remarks. We let you go for ten minutes but bring these to a point.

MR. LITCHKO: I'm trying to bring them to a point, Mr. Freeman. I'm trying to get the point relayed to this committee that we must have good, reliable science. The bogus science that has been put forth here needs to take a hard, good look at it and look at the reason.

These pharmaceutical companies and chemical companies now, in order to capture -- the environmental groups and in order to capture the

heads of agencies, these people donate stock now. They don't donate money any more; they donate stock.

I'm not saying they don't donate any money, but they do donate some money. But how do you capture these people? You capture these people with stocks. And that's where we lie with a lot of our problems.

Our science is influenced by stock and money, not by a decline of anything, but by the money that's involved in this. And that's where I am asking that somebody somewhere here to take a hard look at what's going on here.

And you can realize that New Jersey has fudged so much information, that it's unbelievable that it could get this far and be this wide open and everybody turning their heads about it and not reviewing it.

The Shorebird Technical Committee took a look at this science and said New Jersey's information was not useful for assessing anything, let alone their fisheries.

CHAIRMAN FREEMAN: All right, Mike, I think we got your point. Thank you for your comments, and we'll look into these statements that you made.

MR. LITCHKO: Okay, thank you.

CHAIRMAN FREEMAN: Thank you. Anyone else like to comment? All right, we'll move forward with the agenda. Charlie, just state your name and your affiliation for the record.

MR. CHARLES GIVENS: Ladies and gentlemen on the board, good morning. My name is Charles Givens. I'm from Cape May, New Jersey. I represent the majority of the 34 horseshoe crab fishermen from the state of New Jersey.

They've asked me to come to these meetings before and speak to you, and some of you have seen me before. My constituents, the horseshoe crabbers, they're asking me what I'm doing at these meetings, because evidently I'm not doing a good enough job for them.

Your actions at the last board meeting severely disabled the fishery in New Jersey. As an example, the landings in the state were about 46,569 horseshoe crabs, about a third of the quota. I'm not sure if it was the intention of the board to cut the quota in thirds, but that is the result of these actions.

Naturally, that affects the fisheries in our state besides the horseshoe crab fishery, the eel fishery, the minnow fishery and the conch fishery. I tried to explain some of the processes here of the board to my constituents, and a lot of them don't understand everything that goes on here.

I tried to explain how the board is moving towards understanding virtual population analyses and eventually moving that into what is known as the ecopath program where the data is merely plugged into an equation and plugged into a computer, and we'll know what we should do and what actions we should take.

I asked one member of the horseshoe crabbers if he knew what an ecopath was. And he replied, yes, I know. He said, that would include most of the members of the New Jersey Audubon Society and surely all of the members of the Sierra Club.

I tried to set him straight on that and explain to him that, well, ecopath would be a process where you plug the data into an equation, put it into a computer and the computer will tell us what to do. He said that then he understood, that would be great because that would be the program that would eliminate biologists.

So, I'm having a hard time with him and some of the others who think that I'm not doing my job here, and they keep telling me to put these things into the record and make sure that you people understand.

The last board meeting that I was here I entered a document into the record. It was called the "Abundance of Shorebirds on the Delaware Bay." It was published in 1993. I understood by bringing it here and entering it into the record, I thought maybe it would be included in the pre-meeting package.

Possibly it was provided to you people by mail and it didn't appear in that package. If you would, is there anybody that hasn't read that? Could I see by a show of -- evidently no one has read that. I have a copy with me today. The problem is this is -- you know, science doesn't -- a scientific report isn't published and then it's done.

It's open to the other scientists to examine, possibly peer review. It's open to the public to examine this information. It's an ongoing process. It's not something that is cut and dried, you've made this decision.

Science doesn't work like that. It's not a final product. It's an ongoing product that's crafted and tailored and perfected. Now, my problem with this product from 1993, which is called the "Abundance on Distribution of Migrant Shorebirds in Delaware Bay" -- and the authors of this report are biologists, scientists, and two of them happen to be on the Shorebird Technical Committee.

This report has generated data, graphs and handouts that we've received at meetings in the past going as far back as 1997. I have one of them in my hand here now. It's a graph that appears to be the key counts of red knots on New Jersey and Delaware shores and the Delaware Bay from aerial surveys conducted by the New Jersey and Delaware Endangered Species Program.

And, the source of the data is the same as the authors on this report. And it's unpublished data -- it's data from an unpublished report to the Natural Lands Trust. This document, the abundance document that I spoke of is a published report that was funded by the Natural Lands Trust.

So, while they may not be the same reports, basically it's saying some of the data, but the problem is this number here is reported in 1997 is 63,000 knots in Delaware Bay. And at that time it showed a drastic decline that led up to the regulations that were put into place.

In fact, it was a political action. Our governor enforced an emergency ban, and she did that twice. The first time it was quite legal; the second time it was illegal. That case ended up in the New Jersey Supreme Court, and it was found that that wasn't good. She had the power to do that once, Ms. Whitman, but not twice.

So for that purpose, at that time, 63,000 was the population of red knots in the Delaware Bay. In other documents that we've received and have been analyzed by the Shorebird Technical Committee, among others, and this board, when I look at the number in this Table 5.4, which appeared in the assessment report, I see a figure of 38,000 birds.

So it appears we have flexible data, data that's able to change and adapt for the needs. Basically, I've studied this and how could this be, and why is this and there is some confusion or there are some errors or there is some very serious mistakes with this, and it's an ongoing piece of science.

It's going to be influencing your decisions in the

future. Basically, what I've concluded is that you can take this paper, and you can fold it in half at about that level, and basically the top -- every piece of data on the top of this is just not valid.

Many of these days are combinations of six weeks, six weeks of adding birds together, the counts of birds over six weeks and then comparing them in these later years to one-day counts. I'm almost certain that these one-day counts of birds are accurate.

Now, even at that, the original report states that this certainly isn't a population estimate, it's merely a trend. They're looking for trends to make some base level of what birds were there.

In fact this document, this abundance and distribution of migrant shorebirds on the Delaware Bay enabled the Delaware Bay to be declared a United Nations Wetlands of International Significance. And that's done, of course, through the United Nations.

The United Nations has undergone some scrutiny here lately, and I think it's going to be wise to further scrutinize that organization. To summarize this real quick, basically you can take this page and tear the top of it off, and it's just not valid.

And this has been happening since -- 1986 that study started and, like I said, this data was used in '97 to make this decline. Now, basically, some of these numbers match, some of them don't.

This number here, which is the highest recorded red knots on record, 95,000 birds in 1989, if you read this study, you can see that it cannot be that way because the highest one-day count in 1989 was 48,000 red knots, not 95,000. That's the sum of the weeks over six weeks.

Now, for the Shorebird Technical Committee to analyze this data and use it as a trend to show that there is a declining population is just not washing here. Dr. Andrews was given this data, I presume, analyzed it into Table 5.5, I believe, and he showed a slight, a slight decline in red knots.

If you take the data that's erroneous away from this, you're going to see that there is clearly no decline in red knots and quite possibly an increase in red knots.

CHAIRMAN FREEMAN: Charlie, let me make a suggestion, because we have an agenda we have to stay on. If you would submit these details to us, I'll refer these to the Shorebird Technical

Committee to see if we can get answers.

Obviously, the board is not that familiar with the detail you're going into. I know it's important to you so what I would ask that you -- if you have this in writing, just itemize the issues that you have concerns over, and we'll see if we can get an answer about these from the committee and report back.

MR. GIVENS: I may certainly be glad to do that.

CHAIRMAN FREEMAN: The other point is that the report you're speaking about, it hasn't been distributed. If you haven't, would you please give a copy to Brad, and we'll make sure each of the board members gets a copy of that report as well.

MR. GIVENS: I would greatly appreciate it as well as the horseshoe crabbers in New Jersey would greatly appreciate that, Bruce. I thank you for that.

CHAIRMAN FREEMAN: Good, we'll do that.

MR. GIVENS: Could I have a few minutes to sum up?

CHAIRMAN FREEMAN: If you would, yes, please.

MR. GIVENS: Thank you. Another thing that is troubling concerning the horseshoe crabbers in the state of New Jersey is the fact that the Shorebird Technical Committee has made it a part of their agenda to promote the red knot as a conservation candidate species.

Now, a conservation candidate species is a species that's similar to an endangered species, but somewhat less in quality because the data is not sufficient to have the species listed as endangered or threatened.

So under that designation of a candidate species, that opens up, for one thing, funding for different state and federal organizations, and also it allows companies, private companies to enter into what is known as a conservation candidate species agreement.

This agreement would allow a company to make commitments to improving the environment or improving the health of this species to prevent extinction, and in return for that agreement they would be allowed to have the laws more or less

waived.

They would be held to that agreement in the event that this species is listed as endangered. Therefore, it would be a wonderful thing for a company to work with the environment early, make some commitments; and then when the species became endangered, they wouldn't be responsible, basically.

I believe this is a little bit dangerous. There is a number of companies that ring the Delaware Bay that would love to enter into a candidate agreement, and therefore grandfather themselves in against the Endangered Species Act.

I'm wondering possibly if even the biomedical companies could become candidate conservation species agreement participants, grandfathering their activities in to the effects of the Endangered Species Act.

I think it's something that you have to really pay attention to. I think it's something that needs to be addressed here. I believe that if you're going to say that we don't have the data to list the horseshoe -- well, list the shorebird I guess is what the focus of the candidate species would be, but under that agreement, the horseshoe crab could be mentioned and listed as well, not that that's going to be endangered, but certainly the red knot is the candidate species.

CHAIRMAN FREEMAN: Charlie, we're going to speak on this later under other business, so I think if you hold your comments to that time, it may be more appropriate.

MR. GIVENS: All right, well, I would like to speak later about the conservation candidate species agreements because I think, based on the data that has been analyzed in the past by the U.S. Fish and Wildlife Service, among others, I don't think that would be a wise move at this time to list that species as a candidate species. I guess I'll wrap it up and thank you very much.

CHAIRMAN FREEMAN: All right, thank you. All right, let's move forward with the agenda. Brad is going to report on state compliance.

PLAN REVIEW TEAM REPORTS

MR. BRADDOCK J. SPEAR: Thank you, Mr. Chairman. This compliance report is for the 2003 fishing season. The reports were submitted to me by February 1st of 2004. Just to note, I haven't

received all the state reports for the 2004 season that were due February 1st so, again, we're looking at the previous year, 2003.

The PRT found that all jurisdictions should be found in compliance with the fishery management plan. States from 2004 on will be required to submit their reports and report on the requirements of Addendum III.

I will report on that at the next Horseshoe Crab Board meeting. For the 2003 season, all states, all jurisdictions reported landings below their respective quotas in 2003, and there were no significant enforcement cases that year.

One thing the plan review team wanted to note was Florida's live horseshoe crab trade, and this is basically just an aquarium trade or harvest for use in classrooms. You'll see the harvest isn't too significant when compared total coast-wide landings.

The plan review team suggested that Florida put a cap in place to limit the number of horseshoe crabs harvested for the live trade just as a preventative measure if at some point the harvest did increase above a level that was of concern.

Maine, New Hampshire, Pennsylvania, Potomac River Fisheries Commission, North Carolina, South Carolina, Georgia and Florida have all requested de minimis status for 2004. Just to note, North Carolina's landings were slightly above the de minimis threshold, but they still requested de minimis status for 2004. The plan review team recommends that the states listed above be granted de minimis status.

And just a couple notes from the FMP review. These reports were included in the briefing CD. If you take a look at Table 1 of the FMP review, you will see that the landings for 2003 were slightly above 1.2 million horseshoe crabs, and this was a 20 percent increase from the 2002 landings. It's still a 50 percent reduction from the reference period landings.

Just to note, the states that did submit their reports by this past February 1st, most states' landings have decreased from 2003 to 2004. As noted during public comment, New Jersey's harvest was below 50,000 crabs.

Massachusetts was down. Virginia's were down, Maryland, North Carolina and Florida. New York's landings for 2004 were slightly up, but still below the 150,000 crab quota that they voluntarily put in place

for this past year.

And, the federal funding for horseshoe crab research that has been given to Virginia Tech continued in 2003 and for 2004. I don't know what it looks like for them for 2005. This is the funding that funds the benthic trawl survey and a number of other studies.

In 2003 we held an alternative bait or supplemental bait and trap design workshop with the objective to reduce dependence on horseshoe crabs as bait, if there was some way to reduce the use of horseshoe crabs to catch eel or conch.

We were trying to find a solution. We brought together a bunch of fishermen from around the coast and researchers, managers and scientists. And, a couple of things have since stemmed from that workshop.

The most recent one that I've heard of this past year, Massachusetts' fishermen have developed somewhat of a bait cup to use in their conch traps, and it uses, I think they said about an eighth of a horseshoe crab and they combine it with other fish, like skates and other kind of trash fish, so to speak, and have greatly reduced the amount of horseshoe crabs that they've used to catch conch.

And one other project that stemmed from the workshop, Delaware Sea Grant has been ongoing -- has researched ongoing the use of alternative baits, developing a bait that does not use horseshoe crabs but has the same effect.

And they've sent this bait out -- or it's available for fishermen to use in their traps and test out. And they just ask that the fishermen report back to the Sea Grant on how it is catching. I haven't heard any reports on results from the fishermen but this is, as I said, it's an ongoing process.

Just a couple of recommendations from the plan review team. The funding mainly for the Virginia Tech benthic trawl survey --again, I'm not sure what the status is for 2005, but this is looked at as the keystone survey for the horseshoe crab stock assessment once horseshoe crabs are able to do a full-fledged stock assessment

So, just to note to the board if federal funding does dry up at some point, we would hope that there is some sort of federal-state collaboration to put together funds to continue this survey.

We also recommend that states that are conducting

tagging and also organizations tagging horseshoe crabs, that they use the U.S. Fish and Wildlife Horseshoe Crab Tags, and that feeds into that database.

And, the last recommendation is concerning the biomedical industry, and that states continue to comply with Addendum III requirements that the biomedical companies in their state report the level of harvest so that we can track the level of mortality from biomedical harvest. That concludes my report.

CHAIRMAN FREEMAN: All right, any questions or comments? Bill Adler.

MR. WILLIAM A. ADLER: Thank you, Mr. Chairman. You said that there is this funding to do the monitoring of the horseshoe crab is like a survey -- is that going to be a dedicated horseshoe crab, I assume a trawl survey done so that it is more accurate, perhaps?

MR. SPEAR: That's the intent. This is the benthic trawl survey that is run out of Virginia Tech that Dr. Berkson has run for, I guess it's the past four years now. It's still relatively new and it's difficult to get a trend, a clear trend from those four years of data, but the idea is to make it a long-term survey that spans several states. Right now it runs from New York down through Virginia.

MR. ADLER: And has a better chance of assessing what is really on the bottom for horseshoe crab?

MR. SPEAR: Again, that's the intent, to get a broader coast-wide look at the horseshoe crab population and to complement the state surveys that have been conducted in years past.

CHAIRMAN FREEMAN: Bill, just to add, the gear that is being used is definitely rigged to catch horseshoe crabs. It's very different than the normal gear we used to catch fish. It was designed primarily from gear used by commercial fishermen. It's a modification of that, but it is designed to maximize time on the bottom and to get the horseshoe crabs that are there. Okay, I had John and then Tom.

MR. JOHN I. NELSON: Thank you, Mr. Chairman. If you just want to do questions right now, I was going to deal with the de minimis requests either now or at some point and put a motion up to accept the recommendation for de minimis for those states so requesting it.

CHAIRMAN FREEMAN: All right, I guess it would probably be appropriate to do it now.

MR. NELSON: All right, I so move, Mr. Chairman.

CHAIRMAN FREEMAN: And second by Mr. Augustine. Thank you. Brad, do you want to mention again the States?

MR. SPEAR: The states were Maine, New Hampshire, Pennsylvania, PRFC, North Carolina, South Carolina, Georgia and Florida.

CHAIRMAN FREEMAN: All right, Pat, is that your hand?

MR. PATRICK AUGUSTINE: Thank you, Mr. Chairman. Relative to the report that you gave, Brad, you noted that North Carolina was over, I don't know, a small amount of horseshoe crabs.

Do we have any allowance or is there just a magical thing that we say it's okay this time, that they don't have to do a full report? How do we handle that so that we don't set precedent by it happened now by one state and it may happen again by another state, so we don't get ourselves in a dilemma later on?

MR. SPEAR: Just to note, the PRT spoke to North Carolina about this, and they suggested that it was a glitch on their part. So, the PRT felt that it was not significant to bring them out of de minimis.

Also, with the horseshoe crab plan as is, there is no real significant difference between de minimis status and not as far as the requirements go. And, also, in looking at their landings for this past year, 2004, they were well below, so we felt we recommended that they be found in de minimis. However, it's the board's prerogative.

MR. AUGUSTINE: I thank you for that clarification. It seems as though you've put it on the record, and that should stand as adequate evidence that you folks have reviewed it and that we should be satisfied with that. Thank you.

CHAIRMAN FREEMAN: All right, is everyone satisfied with the motion? Let me read that to Joe. **It is moved to grant de minimis status to Maine, New Hampshire, Pennsylvania, Potomac River Fisheries Commission, North Carolina, South Carolina, Georgia and Florida.**

Any discussion on the motion? All those in favor signify by saying aye; opposed, same sign. The motion carries. Okay, John, was there anything else?

MR. NELSON: I did have one other thing, Mr. Chairman, and that was on the reports for '04. Brad mentioned there were some states that had not had an opportunity to provide that yet, and I guess the question was, you know, it's in February, February 1st and I know my staff is pounding on my door.

I hope I got mine in, anyway. But they come pounding on my door early, and I'm just wondering is there a problem with February 1st or is it just that there is a small number of states that have some legitimate reasons like they forgot to submit them?

MR. SPEAR: It is unusual for the horseshoe crab folks to submit their reports late. There were four or five states that still have yet to submit their reports. I haven't heard of why. But in years past the date has been fine, so I don't know what's different this year.

MR. NELSON: And as I recall, you do your normal thing as far as notifying the states, so you're going to follow up with, I would assume, the state directors because sometimes, you know, we kind of gloss over it and just pass it right to the staff and then kind of forget about it until they bring the report to me. At least that's my recollection of how sometimes it happens with me. And so if you're going to follow up with that, I think that would be appropriate.

CHAIRMAN FREEMAN: All right, is everyone satisfied? Brad will notify those who are delinquent. I had Tom and then Tom Meyer and then Roy.

MR. THOMAS FOTE: Brad, when the technical committee looked at the landings drop in 2004 -- you know, I look at landings drops can happen for one or two reasons, one, like in dogfish, we put in rules and regulations where nobody is going to harvest because they can't money, so that the landings drop or because the population has declined.

I'm trying to find out if we put onerous regulations in the states and that was one of the reasons why they declined, which really put in I guess regulations that wouldn't allow them to establish the quota the same way we do with dogfish, so I'm just trying to get a

feel for that.

MR. SPEAR: The 2004 landings are just now coming in. And as I noted, I haven't seen all of them so we haven't had a chance to -- or the technical committee or the plan review team hasn't had a chance to look at them or analyze.

MR. FOTE: A follow up on that, Bruce. When they do that, I would like to find out the reasons why. I mean, I don't want to all of a sudden panic because the landings are dropping, if it's not the landings that are dropping, but it's the regulations that they put in that didn't allow them to harvest the quota. I want to make sure that we're clear on that and have a clear idea what occurred.

CHAIRMAN FREEMAN: Tom.

MR. TOM MEYER: Thank you, Mr. Chairman, just an update. There was 650k for Virginia Tech for the trawl survey in 2005, so we're working on the grant to try to get it out as soon as possible.

CHAIRMAN FREEMAN: Okay, thank you. Roy Miller.

MR. ROY MILLER: Thank you, Mr. Chairman. I just wanted to correct perhaps a misunderstanding that Commissioner Adler may have had concerning how the Delaware trawl survey is conducted. It was incorrectly characterized as a mid-water gear.

Bill, it is in fact a bottom trawl. It was designed to and first employed in the 1960s and then again in the 1070s and early 1980s and then again from 1989 continuous to today to be a finfish gear to sample summer flounder, weakfish, and other benthic fishes of Delaware Bay.

This particular gear does in fact capture horseshoe crabs. We readily admit that the gear was not designed specifically to sample horseshoe crabs, but it does in fact capture them probably in relation to their relative abundance.

Could another gear sample horseshoe crabs more efficiently? Absolutely. And that's what the Virginia Tech trawl survey was designed to do. I just wanted to correct that for you. Thank you.

CHAIRMAN FREEMAN: Other comments. All right, stock assessment framework term of reference, both Brad Spear and Greg Breese.

Brad, do you want to start?

STOCK ASSESSMENT FRAMEWORK

MR. SPEAR: A couple years back, the stock assessment subcommittee put together a draft framework for their ideal stock assessment, full-fledged stock assessment for horseshoe crabs, incorporating models that have been used in the past and adapting them to the horseshoe crab population.

They did this so that it was somewhat of a vision to shoot for, because data for horseshoe crabs is relatively little as far as time series goes. They put together this framework and the data needs that should feed into the framework.

And, it was asked by the technical committee to bring this stock assessment framework to peer review to make sure that, first of all, the model that they've selected to use, once there is enough data, is the right model and the right approach and, two, to make sure we're on the right track for collecting the data to feed into that model.

At the beginning of the meeting, you were handed out draft terms of reference that the stock assessment subcommittee has put together, and the technical committee has had a chance to comment on.

If you would like, take a moment to look at those terms of reference. They were also e-mailed out to you late last week. But what we'll be asking you today is to approve or adopt those terms of reference for the upcoming peer review.

CHAIRMAN FREEMAN: Okay, there's three of those listed. You should have them in front of you. Pat Augustine.

MR. AUGUSTINE: Thank you, Mr. Chairman. I'd like to make a motion to move to approve these as the new terms of reference for the horseshoe crab stock assessment as stated.

CHAIRMAN FREEMAN: Okay, second, John Nelson. All right, any comments? Dave Pierce.

DR. DAVID PIERCE: Well, since these terms of reference were put together by the assessment people themselves, that's my understanding, I guess I shouldn't object to them. I just find it interesting they're certainly all-encompassing, everything but the kitchen sink. But I think the kitchen sink is in there, too, so, Square 1, is that where we are with regard to evaluating the

assessment, just about everything here, adequacy of models, biomass, mortality, fishery dependent and independent surveys; so, if that's what the assessment people want, then that's fine by me.

But I guess it certainly demonstrates that they're more than willing to do a lot of soul searching and strive to make some dramatic improvements in how we assess horseshoe crabs, so that's fine.

CHAIRMAN FREEMAN: Brad, do you have any comment?

MR. SPEAR: Dr. Pierce, that was the intent of the committee, to give the peer reviewers a full range of suggestions from completely approving or endorsing the proposed model or completely revamping and suggesting a different approach.

CHAIRMAN FREEMAN: Remember, up until just a few years ago, there hasn't been any coast-wide assessment. There was a report made back in the '60s relative to the surf clam survey that was going on by the National Marine Fisheries Service, and that was restricted to only certain areas, and there was a population estimate.

We didn't have anything this -- what we're finding now is we're breaking new ground. I think everyone recognizes that. And we will hopefully, in the very near future, come up with population estimates that are much more realistic than what we received in the past. So this is new territory. Any other comments? Brad.

MR. SPEAR: Not specifically on the motion, but just some more information. On that sheet also you'll see a list of potential peer reviewers that the stock assessment subcommittee has put together.

If the board members have any suggestions to scratch those reviewers or make a suggestion for an additional potential reviewer, I'd be willing to hear that. But, we hope to get peer reviewers in line and set up the review for July this summer.

There's no management implications. No management implications will come from this peer review. There is not the urgency, but we would like to get it done soon so that we know that we're on the right course.

CHAIRMAN FREEMAN: Okay, any other comments? Greg, do you have anything?

MR. GREG BREESE: No.

CHAIRMAN FREEMAN: Okay, we have a motion. **I'll read that motion for Joe: Move to approve the terms of reference for the horseshoe crab stock assessment as stated. All those in favor signify by saying aye; opposed, same sign. The motion carries.** All right. Okay, Delaware Bay tagging and spawning survey, both Brad and Greg.

DELAWARE BAY STUDIES

MR. BREESE: Thank you, and Dave Smith sends his regrets. Dr. Smith had other travel and duties he needed to take part in, so he provided me some information. I'll try to go over it as best I can. I may not be able to answer questions as well, otherwise.

You were handed out this morning the horseshoe crab spawning activity in Delaware Bay 1999 to 2004 report by Dr. Smith. He finished it literally yesterday, and that was due to a couple things that I'll go into in a minute.

In addition, I'll take a stab at giving you an update on his horseshoe crab radio telemetry work in Delaware Bay that was started last year and also on the egg abundance bay-wide survey that a number of different people have been trying to work on getting implemented on the bay.

Getting back to the spawner survey, it's in its sixth year. It's a largely if not almost entirely volunteer effort, although there are two coordinators, one on each side of the bay that coordinate the volunteers, and that's a really critical job. They do get paid through funding that is obtained year to year by either New Jersey or Delaware.

It was designed, as you all probably remember, to provide a reliable index, and it seems to be achieving that very well. Coefficient variation is below 14 percent for the whole six years, and in the last few years it's been below 10 percent, so we feel really good about how accurately we're able to assess the trends.

And the number of beaches that are surveyed seems to be the important criteria as to how good the coefficient of survey you get for this one. And 13 beaches in 2004 in Delaware were surveyed and 12 in New Jersey for 2004.

In 2004 the spawning activity peaked in mid-May. It's a little bit different than in past years and there

seems to be a fair amount of year-to-year variation in that. Usually it's late May but it has moved around.

New Jersey and Delaware also seem to vary as far as how intense the spawning activity is, but taken as a bay-wide survey, it all seems to even out so in years where New Jersey has a higher level Delaware seems to have a lower level and vice-a-versa.

There is no real new conclusion from the report. It's still the same as it has been for the past six years, and that is that the population is stable or very slightly declining, declining at less than 4 percent per year, if there is a decline.

In this year the reason for the report taking right up until the last minute is that there was funding received from the Delaware Estuary Program that allowed transferring the database over from Excel to Access and creating a software program to allow more quick and efficient analysis of the data.

And in doing that, there were some data errors that were uncovered; and if you're interested, they are listed in the back of this report that was handed out today. None of them change anything in any significant sense.

The conclusions are still the same and the report is still showing the same thing, but nonetheless there were a number of errors that were found as that transfer was made and those have been corrected. If there are any questions on the spawning report, I'll take them now; otherwise, I'll go on to the tagging study.

CHAIRMAN FREEMAN: Okay, any questions? David Pierce.

DR. PIERCE: I need to make sure I'm working off the same document. This is the horseshoe crab spawning activity in Delaware Bay? Are you referencing information that's in this report?

MR. BREESE: Yes, for 1999 to 2004.

DR. PIERCE: Okay, just a question. In the fourth bullet there is a statement at the very end, spawning in Delaware is now showing a significant decline. You didn't state that just now. You said something different from that.

In addition, actually supporting what you said more so than what's in the document, I look at Figure 2 on Page 4, and I think this is the figure, the bottom half of that figure, that led to that statement in the

summary, the one I just referenced.

I don't see in that figure -- assuming this is the figure that corresponds to that language, I don't see from that figure any justification for saying that there is a significant decline in Delaware spawning. So have I missed something?

MR. BREESE: I think, without being certain and I'd have to go back to Dr. Smith for that, that he is talking about the overall spawning pattern for Delaware showing a decline rather than the last few years which look stable. But I'm not positive if I know that.

DR. PIERCE: Okay, well, again, just for the record, I would like to point out that if indeed that is the figure serving as the basis for that statement, then it's not supported by the data. Again that figure, the confidence intervals are relatively wide -- they overlap the means for just about every year except for 2000; 1999 is a little bit less.

So, I don't see the trouble in Delaware Bay relative to that particular figure indicating that there has been a significant decline in Delaware spawning, and I await for some clarification either now or later on when you have a chance to talk to the author. Thank you.

CHAIRMAN FREEMAN: Okay, other comments? Roy.

MR. MILLER: Thank you, Mr. Chairman. To that point, I'm a little confused, Greg. There are two versions of this report. I seem to have the February 7th version, and what was just handed out, the February 13th version.

In the February 13th version the statement that David just referenced doesn't appear in the bullets. Is that because the February 13th version is a more recent edit and therefore we should discard the February 7th version of this report?

CHAIRMAN FREEMAN: Brad can answer that.

MR. MILLER: Or are we talking about two different reports? Perhaps I'm confused here.

MR. SPEAR: Roy, the February 13th report is for 2004. And that report I sent out on the briefing CD, as I guess kind of a placeholder, or the most recent report on this topic at the time.

As Greg pointed out, Dave just completed the 2004

report, which was handed out to you at the beginning, and I believe that one is dated February 7th, 2005, so the February 7th, 2005, report that was handed out at the beginning is the one that we should focus discussion on.

CHAIRMAN FREEMAN: Okay, Dave, in order to answer your question, we will talk with Dave Smith and get clarification to that. Any other comments or questions? Okay.

MR. BREESE: Okay, Dr. Smith and the state of Delaware and the state of New Jersey entered into a project to radio tag horseshoe crabs as they're moving into the bay and then track them, using an automated array of receivers, to see which beaches they're coming up on, how much movement there is and better understand the spawning activity that is occurring.

They're using the services of a waterman to capture the crabs as they're just moving into the bay in relatively deep water, trying to cover several areas of the bay so that they'll have a good representation. The tags have about a 300- to 600-day service life and have a range of about six kilometers.

In 2004, 7,273 male crabs were captured and tagged with Fish and Wildlife Service disc tags, and 60 of those males had transmitters put on. And then 2,704 females were captured and tagged with the Fish and Wildlife Service tags, and 159 of them had transmitters put on.

In addition, 3,594 juveniles or individuals that appeared to be below breeding age, below their terminal molt, were caught and released. So far, since it's just the first year of the study, they're spending a lot of time looking at the data and trying to figure out the best way to analyze it and get what they can out of it.

However, there was some interesting trends or things that they did observe in the data so far. And one of them was that crabs that they could classify as young, perhaps first-year breeders, seemed to move in, spawn and then leave.

So they came in early in the season and they left quickly, without spending a lot of time in the bay; whereas, older crabs that they could recognize seemed to come in over a longer period of time, stay in the bay, come in several times over a longer period of time.

Another interesting thing they documented so far is

that they had some crabs, not many but some, that actually changed sides of the bay during the spawning season as well as some that changed beaches, so that there is some movement and they are not necessarily staying just off one beach and coming onto one beach multiple times, although that's the norm.

For 2005 they plan to do this again. This time they'll try to put transmitters on 200 females, and 50 of those they also intend to put archival tags that will take depth readings and temperature readings over time on them as well.

And they're also, in view of having known that there has been an oil spill occurred and there could be impacts later on, will be looking for tar balls that they may catch as they're capturing the crabs or oiled crabs.

And there has been some discussion about whether to put some radio tags on crabs, if they're visibly impacted by oil, just to see if they might be able to discern a difference in behavior. And, again, if there are any questions on this, I'll take them now; otherwise, I'll talk a little bit about the egg abundance survey.

CHAIRMAN FREEMAN: Okay, questions or comments on the tagging? All right, seeing none, we'll move on to the egg abundance.

MR. BREESE: Okay, everyone is aware that there has been interest in trying to get an egg abundance survey, but that is a tough nut to crack, so to speak, a lot of variation day to day, hour to hour, year to year, in eggs up at the surface, especially.

September 10th, 2004, Dr. Smith held a workshop to look at the methodology that would be needed to assess or come up with an egg abundance index. Twelve attendees attended, a good representation from the people who have been doing work on egg abundance and the states.

The goals that were settled on was that it should be an index of abundance useful for determining if birds have sufficient eggs available for migration and breeding, and the secondary goal to monitor shifts in distribution and trends of egg abundance.

A pretty good consensus was reached on the methodology that would be effective in doing this, although there was some flexibility depending upon how much funding would be available, and that was impossible to determine without engaging the states that would be providing the funding and the

coordination.

What they came up with was it would require a minimum of two crews of three people each on each side of the bay, so a total of 12 people distributed in four different crews collecting eggs on a weekly basis from ten beaches on each side of the bay, so about 20 beaches.

And then a coordinator was recommended to coordinate that effort and work with a lab and to identify a single lab to have consistency in processing later on. That work was then presented to the Shorebird Technical Committee, and I'll be giving the Shorebird Technical Committee report next.

But it was presented to the Shorebird Technical Committee to give them a chance to look at it, discuss it, see if it would meet the needs for the shorebird population modeling that is being undertaken.

And at that point, during those discussions, Delaware and New Jersey felt that -- their representatives at that meeting felt that they could save a little money by coordinating, taking on the role of the coordinator, in other words, having a little subgroup represented by Delaware and New Jersey do that coordination effort.

And, the next step is for them to hammer out what funding they can get and fine tune the protocol. The intent is to have a prototype implemented or do the field work for starting this survey in 2005. And if there are any questions, I'll try to answer them.

CHAIRMAN FREEMAN: All right, questions, comments? All right, none. The Shorebird Technical Committee update.

MR. BREESE: Okay, the Shorebird Technical Committee met twice in 2004. The first meeting was in May. It was geared to identify and make more consistent the banding and research and monitoring that was going to be occurring in 2004.

That was pretty successful, particularly with respect to making a little bit more consistency in terms of effort for the capturing and color marking and rescanning of color-marked birds.

Most of what I'll talk about will be the second meeting, which was in October. And the idea behind that meeting was to see how well the field work went in 2004, look at what should be done in 2005, and discuss what conservation priorities from the bird end

of the equation, so to speak, would be worthwhile to try to undertake.

The meeting also looked at what we currently have as far as data for trends for 2004, and these bullets summarize that. I'll comment on a couple of them. The wintering red knot population survey down in Tierra del Fuego continued to show a decline in 2004.

However, the decline was less than what was seen between 2000 and 2003, so that's a little bit of good news on that one. The third bullet, Delaware Bay weight gain, New Jersey has developed an index of weight gain for the birds based on the sub-sampling that occurs during the color marking of the birds.

And, the weight gain was better for all three species that are focused on than it had been in the past, in 2002 as well as 2003. Expected it to be better than 2003 considering how cold that season was and how late the crab spawned, but it was also better than in 2002. So, that certainly is suggestive that Addendum III may have had some positive impacts on that.

Then the arctic breeding conditions unfortunately were quite cool and late, and we were hearing reports from the waterfowl biologists up in the breeding conditions as well that conditions were poor in terms of being very cold, a lot of snow cover, and a lot of concern about how well breeding may have been.

Interestingly, just as an aside, but I don't know what to make of it at this point, but there seemed to be a larger proportion of juvenile birds seen during the fall migration in some areas than has been seen in the past.

That could either be that there are fewer adults or it could be that the breeding season wasn't as bad despite the conditions appearing bad. I don't have an answer for that but it was curious.

I want to give a little bit of information about what we've been able to get from the re-siting work -- that was quite interesting -- at the meeting; and to introduce that I'll just talk about how good the data set is at this point.

It has taken quite a few years to build it up and quite a bit of work to work out the best way to do it, but at this point there is about 6,000 records. You can see that most of the records, a good portion of them are from the later two years, 2003-2004, the two bottom lines there that are marked as lime.

And, if you look at the bird in the picture -- I don't know if the light is dark enough -- you may be able to see some dark letters on that big orange tag up on the upper leg. What the lime bands are, are individually inscribed tags, so we're starting to get consistent and repeatable and easy to identify records from lots and lots of birds that are individually marked, which helps a lot with some of the analyses.

So two broad things. We estimate that we're getting about 60 percent of the marked birds re-sited, which is quite a good number, and that stop-over duration seems to average about ten days based on the re-siting of color-marked birds.

The other two pieces are the recruitment and survival. Survival is a measure of how good the birds returned in past years, and recruitment is how good juvenile recruitment was two years later.

So if you'll look at the survival records for 1997, it shows in terms of recruitment in 1999, because the birds don't come back to breed for two years -- their first year they winter over and don't make the trip on up to breed.

So you can see there's a couple years, 1999 and 2000, where survival seemed to be low, and, interestingly, and in good correlation with that, in 2001 and 2002 recruitment seemed to be less than what you would hope for, perhaps because the population was a little bit lower at that point.

We've also been doing some work on identifying wintering subpopulations. And the basis of this was that there is concern about whether there were enough eggs for the birds so they were gaining enough weight; or, if in addition to that or confounding that view, some portion of the birds was arriving late and not having enough time to gain weight.

And to tease that out, they piloted some work to use stable radio isotopes and analyze a specific feather. Birds go through a very predictable molting pattern, and you can understand the molting pattern enough that you can tie certain feathers to certain areas so that by collecting a feather, a specific feather from the bird, you can have a pretty good assurance that that was grown during a particular time of the year, in this case wintering.

And using that technique, it appears that there is basically two populations using Delaware Bay, a southeastern population and a population from Tierra del Fuego. They also saw a couple other smaller

ones, but in terms of numbers of birds those two seemed to be the primary ones.

This work will continue in 2005 to try to get a better handle on that, so we'll have more to say about that in the future. There is also some work that was funded by Delaware -- that last one was Delaware as well, by the way -- funded by Delaware to look at disturbance in the birds, see how much time they're able to feed and how much time they're disturbed while they're feeding had have to move away, expending energy in the process.

And some early results, because this is a multi-year study as well, and it was just the first year last year, is that over half of the disturbance seems to be caused by human activity, and that knots are getting disturbed by humans more than natural causes, but that's not true across all species, for instance, semipalmated are disturbed more by natural causes than by humans; and that when humans cause the disturbance, it causes the birds to fly further and stay away for a longer period of time than the natural causes.

One other thing that they looked at specifically was the concern about whether the monitoring and research on the birds is causing undue disturbance, and that doesn't appear to be the case. It doesn't seem to add additional disturbance beyond what the birds would be going through normally, which is encouraging.

This year, or in 2004, Dr. Alan Baker from the Royal Ontario Museum of Natural History very graciously offered to analyze and find out what the sex ratio of knots were. You cannot identify their gender in the field, and so he took feather sample in cooperation with all the banding that was going on.

Feather samples were sent up to him. He analyzed them and we ended up with a 50/50 ratio, which was nice. There are three different studies involving radio telemetry that are going on in the bay in 2004.

And from them -- and again they're multi-year studies, so they'll be continuing this year -- the early information indicates the amount of eggs on a beach is the best predictor of where you'll find birds.

From this work a stop-over averages 12.5 days. And the birds seem to show a pattern of staying in a fairly small localized area and then taking frequent forays out quite a distance to visit other areas for short periods of time, and that the birds seem to be randomly mixing, which is another interesting one.

Part of developing a bird population model to try to tie into the egg abundance sampling and to tie, hopefully, into a bay-wide horseshoe crab/bird population dynamics understanding is to understand how well the birds are able to utilize eggs.

And so some work that has been going on and is almost completed this coming year is to use actually feeding trays and identify how many eggs the birds can consume. And some of the interesting information has been that there are two types of behavior or feeding behavior that the birds exhibit.

If there's a lot of eggs in the upper centimeter of the sand, then they use a pecking style, which is a rate constant style of feeding, and they can eat as much as 2.5 eggs per peck, and just are like little drill hammers. But they do reach a maximum 2.5, no matter what the density of the eggs seems to be.

After that top centimeter is depleted, then the birds go into a probing pattern; and although it correlates how many eggs they eat while probing correlates well with how dense the eggs are in the lower levels, it doesn't rise as fast and it doesn't reach the same level of consumption.

As I mentioned already, Dr. Smith presented the bay-wide egg abundance survey to the Shorebird Technical Committee, who found that it met the needs for their population modeling, and that it was a matter of trying to identify funding and put it in place for 2005. That is ongoing right now.

Okay, switching gears a little bit, we had an endangered species biologist talk to the group about what the Endangered Species Act meant with relationship to the red knot. Currently, it's not listed under the Endangered Species Act, although it is a Species of Special Concern within my agency, which is an informal way of saying we're concerned about the species, but there is nothing formal, nothing related to the Endangered Species Act.

Before the meeting, I did talk to Dr. Geiger and he said he might have a few words he could say about the petition that the service has received to list it, and maybe that would be a good time to insert that in now. Then I'll go on with the general stuff, if you'd like to do that.

CHAIRMAN FREEMAN: Jaime

DR. JAIME GEIGER: Thank you, Mr. Chairman. What I'd like to do is just give a brief

overview of just the process for the record and then give you the update. Once a petition is received by the service, to the maximum extent practicable the service has 90 days to assess the substantiality of the petition and publish their findings in the federal register.

The service standard for substantial information is stated as that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted.

If the service determines that the petition is substantial, then a positive 90-day finding will be published in the federal register and a status review of the species is automatically triggered.

This will include a public comment period. Within 12 months, again to the maximum extent practicable of receipt of a petition with a substantial 90-day finding, a second finding is made by the service as to whether the petitioned action is warranted.

At that time the service makes a finding that either the petitioned action is warranted and the species should be listed as threatened or endangered and publishes as a proposed rule in the federal register or determines that the petition action is not warranted, and the process ends or determines that the petition action is warranted but precluded by other pending actions.

If the service determines that a petition does not present substantial information, then a negative 90-day finding is published in the Federal Register and the process is over. However, even with negative 90-day findings, the service usually mentions that we are always accepting new information on species; and if anybody wants to submit data to the service, they can at any time.

As you all are aware, the service is working on preparing a 90-day finding for the red knot. We estimate having the finding to our Washington office by early March. The service has already funded a status review for this species outside of the petition process, and we are currently awaiting the results of that review as we speak. Thank you very much, Mr. Chairman.

CHAIRMAN FREEMAN: Okay, questions of Jaime. Pete and then we'll go to the audience.

MR. JENSEN: I don't know if this is a question for Jaime, but it's related to what he went through. It's probably a question for Greg. Has any of the work so far demonstrated that there is any

relationship in the abundance of red knot and the spawning activity of horseshoe crabs and egg production?

MR. BREESE: You're asking if there is a direct correlation between how much spawning activity of horseshoe crabs goes on and whether the bird population is increasing or decreasing?

MR. JENSEN: Yes. I mean, the whole reason the birds got into the horseshoe crab issue was because there was some assumption that the abundance of red knot was tied to the availability of eggs and the spawning activity of horseshoe crabs in Delaware Bay in particular. Is the work showing that relationship yet?

MR. BREESE: Well, I guess I'm hesitating because the words are tricky in how we say them, and we've had a lot of controversy about it. There's a number of pieces of evidence that indicate that bird weight is key in predicting survival for shorebirds, and weight gain at stopovers is a key element in predicting how well the adults will survive.

There is also a lot of evidence that suggests very strongly that there has been problems with the amount of food or there has been a decline in the amount of eggs, and there has been some indication that the spawning population was larger in the past than it is today.

But the difficulty is that there doesn't -- we don't have a good spawning survey from back when the population was higher. We don't have good egg abundance surveys, and so it's very difficult to directly correlate those things very solidly.

The bird population is showing a decline. The bird population is also showing what appear to be different cohorts coming in, and it's, as usual in wildlife biology, sort of a messy picture that's hard to answer in a simple way.

CHAIRMAN FREEMAN: Did you get your answer, Pete?

MR. JENSEN: Yes, it's messy all right.

CHAIRMAN FREEMAN: As usual. Any other questions or comments from the board? David.

DR. PIERCE: The Shorebird Technical Committee had its 2004 fall meeting, and you're reporting on the results of that meeting, some of the results, anyway. And, it occurred to me, in going

through the document, that I didn't see any reference to the Cape Cod area, and in particular a major project that has been slated or proposed for Nantucket Sound, and that's the wind farm.

Clearly, we're very concerned about red knots and other shorebirds, the link between horseshoe crabs and the eggs -- well, the shorebirds and the eggs of the horseshoe crabs. And for that reason I would -- well, the question is did the technical committee address this particular proposed operation and it's potential impact on red knots and other shorebirds?

MR. BREESE: No, the technical committee did not. But maybe I'll just jump in here, and say I wasn't quite finished with the report. I had just yielded to Dr. Geiger to fill in a blank that I thought was pertinent. Maybe I could just go through it, and then we'll go back to questions?

DR. PIERCE: Yes, that's fine enough because I thought you were through. Once you are through, I do have a motion I would like to make, Mr. Chairman, regarding this particular issue.

CHAIRMAN FREEMAN: Let's have Greg complete his report. There was a comment -- I saw a hand in the audience. Was this relative to the listing?

MR. RICK ROBINS: Yes, sir.

CHAIRMAN FREEMAN: All right, would you come forward please and then we'll get back to Greg. Rick, just indicate your name and affiliation for the record.

MR. ROBINS: Thank you very much, Mr. Chairman. Rick Robins, Chesapeake Bay Packing. I'd like to say I'm deeply troubled by this petition. I'd like to begin by thanking Dr. Geiger for his update. I think it's imperative that the board be aware of the petition and follow it closely because it could have substantial bearing on the future management of horseshoe crabs.

Beginning with Addendum I, Mr. Chairman, this board has taken a highly conservative, risk-averse posture on the management of horseshoe crabs. And, my hope is that will count for something in the long run.

Moving on to Addendum III, this board took an ultra risk-averse approach using the most conservative options or most conservative assumptions that were at its disposal in making those decisions. I think that the overall posture has been highly conservative.

The price tag that has been assigned to the industry to go through this plan has been substantial. The boats in Massachusetts ran out of bait this fall. The cost of bait has been higher than ever and the availability has been very limited, so there have been substantial economic consequences from the management of this resource.

I would hope that as the Fish and Wildlife Service deliberates on this matter, they will have a manifest awareness throughout their deliberations of the actions and the conservative steps that have been taken by this board on the management of this.

I hope that the proactive approach of this board will be rewarded and honored in the greater scheme of things as they deliberate and consider those aspects and the implications of an ESA listing.

Furthermore, Mr. Chairman, I'm somewhat troubled or perplexed by New Jersey's position on this matter. At the last meeting, when deliberations were ongoing relative to Addendum III, your delegation delivered a personal request to this board in the form of a letter from your Director of Fisheries and that essentially argued that Addendum III was necessary in order to avert a listing of the Rufus subpopulation of the red knot in an ESA listing.

And, in fact, this board did pass Addendum III and a petition has been filed; and while New Jersey did not make the filing, New Jersey's Non-Game Endangered Species Division has lobbied rather vocally in favor of the petition.

I suppose that office is somewhat of an enigma to observers. The office operates under the umbrella of the state as an official division, and yet it's privately funded. It's director is a scientist, but is also an advocate and an activist. I suppose it's a bit unclear what New Jersey's official position is on this. I am troubled by that.

And, again, I hope that this board's conservative actions relative to the management of horseshoe crabs will count for something with the U.S. Fish and Wildlife Service. Thank you very much, Mr. Chairman.

CHAIRMAN FREEMAN: Thank you, Rick. All right, Greg, continue with your report.

MR. BREESE: Okay, as I said, Jaime could give you a better feel for what the service has been petitioned and what that means as far as the aspects

of the petition. The service has been petitioned to evaluate the species for candidate status.

And candidate status is a formal recognition of a species, but it doesn't -- it's not the same as classifying it as endangered or threatened. It doesn't increase the legal protection. What it does do is open up a few sources of funding within our own agency and allow the service to enter into candidate conservation agreements.

Candidate conservation agreements are specific, legally binding agreements between our agency and some other entity. They're voluntary and what they're attempting to do is reduce threats or improve the status of a species with the idea that it then doesn't become threatened or endangered.

And if it does become listed as threatened or endangered, which is sort of the long view down the road, the big picture, if that were to happen, the protection and effects of that protection would hugely depend upon how the population that's listed is defined.

And, there are a number of situations where species can be very narrowly defined populations or broadly defined populations, but that makes a huge difference on exactly what would happen. What we do know is that it would then require my agency's consultation on federal projects and that there probably would be additional permits required for doing research and monitoring.

Okay, the last thing that the technical committee looked at and discussed in some detail was what other conservation actions were deemed high priority to try to help conserve the bird population, particularly with focus on red knots.

And so a number of things rose to the surface, and I'm going to go over them quickly. If you have questions, let me know. One issue that has been coming up has been the number of gulls feeding on the beaches.

There is concern about what impacts they're having with the shorebird's ability to feed. Generally speaking, gulls always win when there is a little competition there on the beach, and gulls come back from disturbance, say, human disturbance, faster than the birds.

So, over time they could be having a cumulative impact, so there is going to be some look at exclusion devices that might allow the shorebirds to feed and

not allow the gulls to feed. Roost habitat is an issue that has been discussed and debated.

We don't know where all the roosts are. Some of the roosts have some disturbance issues. Those are going to be looked at, trying to devise ways to reduce disturbance and find out what conditions are optimum.

Human disturbance is already recognized as a factor, so there is going to be an effort by the states to increase law enforcement effort and within the service at Cape May National Wildlife Refuge, particularly with respect to dogs which cause a particularly large amount of disturbance. Birds are highly sensitive to mammalian predators that look like dogs.

There may be some opportunities available as beach replenishment work is being done. Mispillion is a really good example of a place where horseshoe crabs spawn on just about all wind conditions, very consistent.

It's a low energy beach because of protection around all sides. So, there is interest in working with the beach replenishment design teams to see if that can be engineered, as well as creating additional roost habitat during these projects and perhaps including additional sand in front of bulkheads if there was enough sand that was put in front.

Although it would wash away over time, it might provide some period of years where spawning and foraging opportunities would exist. And there's a few sites, four sites in particular, that were identified as being focuses for that.

In addition, there's areas that additional protection of habitat might be valuable, and Mispillion certainly is one of those areas, so that's a priority as well. And, predator control effort is considered to have a significant benefit, so there is four areas that were identified to try to increase effort at predator control.

And then these are the high priority research and monitoring efforts from the Shorebird Technical Committee: bay-wide egg abundance survey, certainly; finish quantifying egg depletion by birds, specifically trying to identify the threshold at which the birds will abandon an area because that will be a key in modeling how many eggs are needed for the birds and how well their population can do with a given level of egg abundance; continue to work on the wintering subpopulation; continuing the winter area survey.

There was some question about some peregrine towers that are close to some beaches and the peregrines using the shorebirds quite a bit. We still need to look at how much disturbance that's causing, but there is some question about whether it's the best management practice to include peregrine towers right next to beaches.

Identifying night roosts, because there is some concern whether there are sufficient roosts and where all the roosts are. And then that major -- if you will remember, the wintering subpopulation work pointed to a southeastern population, but it seemed like it might be more than just the Florida population of Rosalaria that's known, so it would be nice to get some more work done in the broader Gulf of Mexico/Southeastern Seaboard area to see if there are other concentrations of shorebirds that are not well known. And that's it.

CHAIRMAN FREEMAN: Questions, comments? Peter.

MR. JENSEN: I have a general question. Is the petition on endangered or threatened status for the horseshoe crab throughout its range?

MR. BREESE: It's not for horseshoe crabs.

MR. JENSEN: I don't mean horseshoe crabs -- I'm sorry, red knot, yes, for red knot throughout its range? And then let me go on and ask for another clarification. If I understand the consequences of a listing, that would mean if they were listed, then any human activity that would either alter the habitat or disturb these birds would be subject to permits.

MR. BREESE: The population that would be listed as a candidate -- and we're only talking about candidate status right now -- is being defined. So, worldwide red knots exist in Europe and they're not being considered in this.

It's the population primarily that works through Delaware Bay, but the exact definition is in the process of being -- is part of that discussion.

I'd yield to an endangered species biologist for the fine nuances of what all would be included, but in general it would at a minimum mean that federal projects would need to be reviewed by our agency, and the other impacts would depend upon the population and how it's defined. But it doesn't necessarily need to be as draconian as some might

think.

CHAIRMAN FREEMAN: Jaime, do you have any additional comments? No, all right. David Pierce, you had an issue.

DR. PIERCE: I have an issue that may actually have already been addressed, speaking to my colleague here about this Nantucket Sound wind farm. He reminded me that the letter apparently will be sent out by ASMFC to the Army Corps of Engineers relative to the Cape Wind Energy Project in Nantucket Sound.

This letter will raise a number of issues that are of interest to this commission, notably the impact of this project on the marine fisheries resources within Nantucket Sound, and, of course, impact on the fisheries themselves.

Bill brought to my attention that the letter does reference the commission's concerns about the potential impact of this project on migratory birds, so I guess my question to Greg would be -- Greg, excuse me, my question to you would be have you had an opportunity to take a look at this draft letter, in particular the comments in this letter that relate to our concern about migratory shorebirds, red knots in particular? Have you had a chance to review that?

MR. BREESE: No, I have not.

DR. PIERCE: Okay, I would suggest, then, Mr. Chairman, just to make sure that we have all of the input we can possibly get regarding our concerns about red knots, that before the letter is sent out, you know, Greg -- because the comment period is almost up, we have to get this letter in, there is no time for prolonged debate and review of the letter -- I would suggest that Greg, at least Greg take a look at this particular letter and make sure that it adequately addresses our concerns about red knot and migratory shorebirds.

It's already quite comprehensive. I didn't realize that our comments were as all-encompassing as they are, and that's good. I'm very happy to see that. But, once again, I would just like Greg to take a look at it; and then once the letter is approved by ASMFC, it can be sent off.

We as a board dealing with horseshoe crabs can be better assured that this issue has been properly addressed, our concerns have been adequately addressed by the Army Corps of Engineers.

CHAIRMAN FREEMAN: All right, what I'd ask is not just Greg, but he could contact his committee members as well, so it's a joint effort, but really a fairly rapid review is necessary to see if there is any omissions that we've concerns over. We'll do that. Okay, Bill, you had a comment.

MR. ADLER: Mr. Chairman, I had brought this up at the last meeting, actually at the ISFMP Board about the Atlantic States doing some work besides just putting rules in on fishermen, but also on some of these projects which affect the habitat of the species that we try to manage.

And this particular issue, just one, with regard to horseshoe crabs, the idea that Monimoy on the Cape has basically been reserved for the horseshoe crabs, and this particular issue is what I call the "great sea bird flock reduction program", where we're going to put like 130 windmills in the way of the birds trying to get to get to Monimoy.

And that was just another issue besides the taking of fish habitat for this project, and that's where this is all coming from. It seems sort of ridiculous, but this is the way the world works. Thank you for that opportunity to explain that.

ADVISORY PANEL NOMINATION

CHAIRMAN FREEMAN: All right, thanks, Bill. Okay, any other questions or comments? We do need an action on an advisory nomination from New York, John Turner. Gordon, you had offered that.

MR. GORDON C. COLVIN: I move the board's acceptance of John Turner as New York advisory panel member.

CHAIRMAN FREEMAN: All right, motion by Gordon Colvin, second by John Nelson. Is there any comments or discussion? Any opposition? Seeing none, Mr. Turner is included. Let me just make one comment.

Mike Litchko, I think you're still in the audience. The concerns you had and raised relative to surveys, if you would itemize those, we do have this stock assessment committee look at both fishery dependent and independent surveys.

I want to make sure they're aware of those comments you have so they can consider those for their work; so if you could do that or work with Charlie to provide those, it would be very helpful.

Okay, any other business? Perry.

OTHER BUSINESS

MR. PLUMART: Thank you, Mr. Chairman. My name is Perry Plumart, and I'm here today representing three organizations: The Citizens' Campaign for the Environment, based in New York and Connecticut; New Jersey Audubon; and the American Littoral Society.

I think, first of all, I'd just like to thank the Horseshoe Crab Management Board and the Atlantic States Marine Fisheries Commission for the actions they have taken in addressing a real problem of horseshoe crab overfishing and the decline of the migratory shorebirds, and especially the states of New Jersey, Delaware, Maryland, and New York, who have seen the problem and taken measures to address it.

As we know, the state of the oceans are in serious trouble. Two major reports have been issued in the last year, one funded by a major philanthropic foundation of the United States and the other one funded by the United States government.

And in fact the problem of the decline of the fish stocks and the problems in the oceans are being addressed by the U.S. Congress. Both the U.S. House of Representatives and the Senate are setting up Oceans Committees that -- and this has also been addressed by the Bush Administration in raising the level of dealing with the problems of the ocean.

The reason I say this is because the problems that are being addressed at the highest levels of our federal government I think are reflected in the problems of the horseshoe crab and the shorebirds.

The preponderance of evidence that has been presented to this board and to the commission over the past decade has shown that there has been a substantial decline both in the horseshoe crabs and the migratory shorebirds.

And if you want to look at the reverse, the landings data has indicated that we have taken millions of horseshoe crabs, targeting pregnant females for an animal that takes 10 to 12 years to reach sexual maturity.

Again, it's not very hard to figure out that if you're attacking the breeding or taking the breeding stock of

an animal, that you're jeopardizing it's sustainability. I think what you also have to do, Mr. Chairman and members of the board, is listen to the dog that didn't bark.

What we have is that there is no data showing over the past decade or currently that the fishing regime of horseshoe crabs has actually been allowing the horseshoe crabs or the migratory shorebirds to flourish.

There is no evidence of overabundance or abundance. I think what we need to do is continue the good work that you guys have been doing now and keep the regulations in place as we go forward in the long-term interests of the horseshoe crab and the long-term interests of the migratory shorebirds and the long-term interests and sustainability of having a horseshoe crab fishery.

I think to answer the question posed by Pete Jensen, is there a correlation between migratory shorebirds and horseshoe crabs, I think the answer is a resounding, yes, there is. The evidence is overwhelming.

The evidence has been presented before this committee and commission and board, and the simple answer is there is a direct correlation and it's virtually undisputed. Mr. Chairman, again, I thank all of you for your work. I hope that we'll continue to monitor the populations of horseshoe crabs and migratory shorebirds and look forward to working with you. Thank you.

CHAIRMAN FREEMAN: All right, thank you very much. Just a quick remark. Perry you know this and I'm sure other organizations, the commission has done a considerable amount of work relative to this issue.

We've been involved in this for a number of years. We do take it seriously, and the actions that the board has taken to control the harvest of horseshoe crabs we know has been very, very serious, and we'll continue to work to certainly safeguard both resources.

This concludes the Horseshoe Crab Board. We're a half hour over. I'm sorry, we really need to end this.

(Whereupon, meeting was adjourned at 10:00 o'clock a.m., February 10, 2005.)

- - -