

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

**November 1, 2005  
Galloway, New Jersey**

Approved February 23, 2006

## ATTENDANCE

### Board Members

George Lapointe, Maine DMR	Timothy Targett, Delaware Gov. Apte.
Pat White, Maine Gov. Apte.	Howard King, Maryland DNR
Sen. Dennis Damon, Maine Leg. Apte.	Russel Dize, proxy for Sen. Colburn (MD)
John Nelson, New Hampshire F&G	Bruno Vasta, Maryland Gov. Apte.
Ritchie White, New Hampshire Gov. Apte.	Jon Siemien, Washington DC F&W
Bill Alder, Massachusetts Gov. Apte.	Rick Robins, proxy for Ms. Davenport (VA)
David Pierce, Massachusetts DMF	Kelly Place, proxy for Sen. Chichester (VA)
Mark Gibson, Rhode Island DEM	Jack Travelstead, Virginia MRC
Eric Smith, Connecticut DMR	Louis Daniel, North Carolina DMF
Gordon Colvin, New York DEC	John Frampton, South Carolina DNR
Pat Augustine, New York Gov. Apte.	Robert Boyles, South Carolina DNR
Brian Culhane, proxy for Senator Johnson (NY)	Malcolm Rhodes, South Carolina Gov. Apte.
Bruce Freeman, Chair, New Jersey DFG&W	Spud Woodward, Georgia DNR
Martin McHugh, New Jersey DFG&W	John Duren, Georgia Gov. Apte.
Ed Goldman, proxy for Asm. Smith (NJ)	Gil McRae, Florida FWC
Erling Berg, New Jersey Gov. Apte.	Rep. Mitch Needleman, Florida Leg. Apte.
Roy Miller, Delaware DFW	Tom Meyer, NMFS
Bernard Pankowski, proxy for Sen. Venables (DE)	Jaime Geiger, US F&WS

### Ex-Officio Members

Gregory Breese, US F&WS, TC Chair

### ASMFC Staff

Bob Beal	Brad Spear
Carmela Cuomo	Vince O'Shea

### Guests

Wilfred Kale, VMRC	Foster Jordan, Charles River Labs
Ernest Bowden VMRC	Russ Dodge, The Cumberland Reminder
Kyle Schick, PRFC	A.C. Carpenter, PRFC
David Hata, Virginia Tech	Bill Goldsborough, Chesapeake Bay Foundation
Larissa Graham, Virginia Tech	Columbus Brown, USFWS
Jeffrey Eutsler, F/V Tony and Jan	J. Koegler, JCAA
Peter Himchak, NJDFW	Larry Niles, NJDFW
Mike Millard, USFWS	Amanda Dey NJDFW
Annette Scherer, USFWS	Patrick Morrison, Richard Stockton College
Wilson Laney, USFWS	Jennifer Resciniti, Limuli Labs
Jeffrey Brust, NJDFW	Lisa Callahan, Atlantic States Fisheries Journal
David Benson, Press of AC	James Fletcher, United National Fisherman's
William Hall, U of Delaware	Fred Layton, HSC harvester
Benson Chiles, Coastal Ocean Coalition	Jim Nash, HSC harvester
Pete Burns, NMFS	Merrill Campbell, Southern Connection Seafood
Sandy Bauers, Philadelphia Inquirer	Andrew Jackson, Rita Diane Inc.
Linda Mercer, ME DMR	Sam Veach, Commercial eeler
Eric Stiles, NJ Audubon	Dan Tusing, Commercial eeler
Clifford Day, USFWS	David Kielmeier, HSC Harvester
Ronald Berzofsky, Cambrex BioScience	Gilbert Ewing, NJMFC
Michael Dawson, Associates of Cape Cod	Mike Celestino, NJDFW

Robert Abel, NJDFW  
Caroline Kennedy, Defenders of Wildlife  
Greg Butcher, Audubon  
Peter Clarke, ASMFC  
David Simpson, CTDEP  
Ed Blaine, commercial fisherman  
Anna Macan, NMFS  
Mike Litchko, New Jersey Fisherman  
Benjie Swan, Limuli Labs

Perry Plumart, American Bird Conservancy  
John Merriner, NMFS  
Anne Lange, NMFS  
Carl Shuster, VIMS  
Charlie Givens, NJ Waterman  
Jennie Niewood, CRC/CBPO  
Michael Doebley, RFA  
S. Mackey, Garden State Seafood Assoc.  
Dave Smith, USGS

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

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**Motion to accept PRT Report.** (Page 18) Motion by George Lapointe; Second by G. Ritchie White. Motion Carried.

Motion to direct PDT to develop an addendum. (Page 32) Motion by Roy Miller; Second by George Lapointe. Motion Withdrawn.

**Motion Re: multi-option horseshoe crab management plan addendum.** (Page 37-38) Motion by Roy Miller; Second by Martin McHugh. Motion Carries.

**Friendly Amendment** by George Lapointe. (Page 38) Accepted.

Motion to amend to delete item 1. (Page 39) Motion by Rick Robins; Second by William A. Adler. Motion Fails.

Motion to postpone main motion until February 2006. (Page 42) Motion by John Duren; Second by Jack Travelstead. Motion Fails.

Motion to Amend Main Motion, Strike Numbers 3 and 4. (Page 42) Motion by Dr. David Pierce; Second by G. Ritchie White. Motion Replaced.

**Substitute Motion.** (Page 44) Motion by Gordon C. Colvin; Second by George Lapointe. Motion Carried.

**Friendly Amendment.** (Page 45) Accepted.

**ATLANTIC STATES MARINE FISHERIES  
COMMISSION**

**64<sup>th</sup> ANNUAL MEETING**

**HORSESHOE CRAB MANAGEMENT BOARD**

**Marriott Seaview Resort & Spa  
Galloway, New Jersey**

**November 1, 2005**

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The meeting of the Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Salon C of the Marriott Seaview Resort and Spa in Galloway, New Jersey, on Tuesday, November 1, 2005, and was called to order at 3:23 o'clock, p.m., by Chairman Bruce Freeman.

**BOARD CONSENT**

CHAIRMAN BRUCE FREEMAN: All right, if everyone would try to find a seat we'd like to begin this meeting. All right, will the Horseshoe Crab Management Board please come to order. I'd like to recognize Vince O'Shea. Vince.

EXECUTIVE DIRECTOR JOHN V. O'SHEA: Yes, thanks, Mr. Chairman. Maybe before you get started, there have been a number of people around the table want to know how long or what the driving distance is to the dinner this evening and it's about a ten --

CHAIRMAN FREEMAN: Okay, we do have time constraints on this particular meeting. We know there is many people who have traveled a great distance to be here today. Many of you would like to speak.

We do have a small amount of time reserved at the beginning of each meeting for public comment. We have very limited time but I'd like to ask a show of hands of those who would like to comment at this time.

All right, I see at least ten hands. We have 20 minutes scheduled so each speaker gets to speak 2 minutes and we're going to hold you to 2 minutes. Any issues that come up during the meeting prior to a vote, if that's what it comes to, we'll reserve time to ask the public to comment.

So this may not be your only opportunity but I'm going to ask that you keep your remarks to two minutes. I would ask that you come up to the seat. There is a specific seat. Lydia, would you hold your hand up. You're almost there.

This is the seat you come up to. Speak in the microphone. All the conversations will be recorded. We want to make sure that everyone gets to put his comments on the record. We do have an agenda. Does anyone have any additions to that agenda? Roy.

MR. ROY MILLER: Thank you, Mr. Chairman. I just wanted to notify the board that I will be proposing one or more motions under other business. If you want to make some consideration time wise for that I'd appreciate that. Thank you.

CHAIRMAN FREEMAN: All right, we will do that. Thank you. Anyone else? Any comments? Yes, let me get Ritchie and then Rick.

MR. G. RITCHIE WHITE: Thank you, Mr. Chairman. Hearing what Roy just said, is it possible to move other business farther up into the agenda, so we allow more time for those issues?

CHAIRMAN FREEMAN: I believe that some of the reports would have to be given prior to your motion. Is that correct, Roy?

MR. CRABTREE: I would be more comfortable if those reports were given prior to the motion but I'm flexible.

CHAIRMAN FREEMAN: Okay, I think we should have enough time. We've allocated enough so I think we will be okay. Rick Robins.

MR. RICK ROBINS: Thank you very much, Mr. Chairman. One issue I had with the agenda is the fact that it seems that the key question before us today is one of horseshoe crab population dynamics.

And the disappointment I have is that we were scheduled to hear three presentations that are new, additive information that were not, that the board did not have certainly last year. This is all new information that has come to light this year.

And those three presentations are not going to be made and I just think that those would have been very beneficial and in the board's best interest to have heard.

And I don't know if we can get a full account of that but I think that that decision was made in part due to some lobbying pressure and I just think that's an unfortunate precedent. I think the board would have been better informed had we had that evidence.

CHAIRMAN FREEMAN: All right, indeed we had originally anticipated the presentation of several papers. However, the stock assessment subcommittee and the technical committee had not fully had the opportunity to look at each one of these and to analyze them critically and have the principal authors there to present their information.

So it has been a decision of the board to within the next six months have those papers critically reviewed by our stock assessment committee and our technical committee and reported to the board at the next meeting.

We want to make sure these are given a fair treatment and a complete treatment relative to our procedures, some of which had not been vetted through our system. So this peer review that will be occurring is within our technical people.

And I know some of the papers are in press. Some have been published. And they have been peer reviewed for publication but it certainly has not met our requirements for the process in which we follow in the commission.

MR. ROBINS: Thank you.

CHAIRMAN FREEMAN: All right, thank you. We have the proceedings of the February meeting. Is there a motion to approve those?

MR. PATRICK AUGUSTINE: **So moved**, Mr. Chairman.

CHAIRMAN FREEMAN: Motion by Mr. Augustine; second by Mr. Lapointe. Any comments or corrections? Seeing none we'll accept the minutes. Okay, we will take public comment. And what I'll do is pick people.

I would ask if there are people -- I know there are different groups here, opposing groups, so I would ask for those of you who want to speak to raise your hands again. I'll try to pick each of you. Dr.

Schuster, I saw your hand go up. Would you please come up here, Carl. If you would, just press the button so the light goes on. Okay.

## PUBLIC COMMENT

DR. CARL N. SHUSTER, JR.: Yes, Mr. Chairman, members of the management board, I wanted to put a positive spin on my introductory remarks but because of the limitations in time I'm going to jump immediately to the moratorium issue.

The current stringent restrictions on the harvest of horseshoe crabs from the Delaware Bay area population are beginning to bear results. A reasonable stability in the adult population and a demonstrable increase has occurred in the juvenile population.

No further restrictions are warranted beyond the moratorium on harvest during the migratory shorebird stopover at Delaware Bay, the cap of 300,000 crabs per year, which is shared by New Jersey and Delaware, and the enforcement of the offshore sanctuary.

This would maximize the number of horseshoe crab eggs available to the migratory shorebirds each year. This is based on the analysis in a sensitivity analysis of an age structure model to identify parameters critical to a horseshoe crab population dynamics authored by Sweka, Millard, and Smith.

A 100 percent moratorium at Delaware Bay would not be effective in changing the present trend towards resurgence of the crab population. Indeed, it might have a severe impact by increasing harvest on smaller, vulnerable horseshoe crab populations elsewhere along the coast.

Neither would a moratorium of the entire eastern coast of the United States be of any value because the key problem is in the Delaware Bay area where the states of New Jersey, Delaware and Maryland are working together to manage the population. More time?

CHAIRMAN FREEMAN: Thirty-seconds.

DR. SHUSTER: Well, I wanted to cite some extraordinary efforts that had been accomplished in the managing the horseshoe crabs to sustain the migratory shorebird populations and I cited the U.S. geological survey, David Smith and colleagues; the Fish and Wildlife Service, Mike Millard and colleagues; the Division of Fish and

Wildlife, Stewart Michels, and so forth.

Other notable contributions have come from Anew Incorporated -- Mike Oates is going to be presenting an interesting documentary on the other use of underwater observations -- Ecological Research and Development Group, Glen Garvey, and watermen such as Frank "Thumper" Eicherly in Delaware Bay and those in Massachusetts who have pioneered innovative fishing techniques that have reduced the demand upon the horseshoe crabs as bait up through '90 percent. Thank you.

CHAIRMAN FREEMAN: Thank you, Dr. Schuster. Next, yes, sir, would you come forward and state your name and your affiliation, please.

MR. JEFF EUTSLER: Thank you for recognizing me. My name is Jeff Eutsler -- E-u-t-s-l-e-r -- from the state of Maryland. And I'm also an advisor on the horseshoe crab panel. I just want to bring out just a few points real quick.

I've been fishing out of the state of Maryland for 25 years for horseshoe crabs so I can say that I'm an expert in the field. In Maryland we were given a quota of 459,000 crabs to catch when we came up with the plan.

Well, our governor cut it back to 170,000 to catch right now as it presently stands. We as fishermen in Maryland went to the state and said, well, we'll help out even more by going to a one-to-one ratio, one female to one male instead of catching all females which we had the right to do in conservation.

Well, now that seems like it hurt us and monetarily it did. But we wanted to do it for the horseshoe crab and the resource. Now, just to give you an example, Sunday night I was out fishing and I made a 20-minute tow six miles off of Ocean City.

And when I hauled back I had 2,000 horseshoe crabs in my net. I've got pictures here to show on my camera if anybody would like to see it. And since the plan has gone into effect since, what was it, 2000, somewhere around there, we see abundance of horseshoe crabs.

Our quota was caught in less than a month because we're not allowed to work weekends. We only have to work Monday through Friday. And no matter if the weather is rough you have to go because you have a daily allocation is what we do in Maryland.

And I think that our DNR managers in Maryland

have managed the resource very good and that I think we haven't given it time to keep in place to see how it does in going to a drastic measures as a complete moratorium on it.

And, also, I've been doing surveys with Virginia Tech on the horseshoe crab surveys and we've been seeing pretty good abundance of them as well there on that. So that's basically what I want to say and I appreciate your time. But, please, it's going to hurt a lot of people if you put a moratorium on it, not only the birds but humans.

CHAIRMAN FREEMAN: Thank you very much. Anyone else? Let's see, Eric, would you please come forward. Eric Stiles.

MR. ERIC STILES: Thank you. My name is Eric Stiles. I'm with New Jersey Audubon Society. I think it is a question of time. The question is also of time for the red knots and the projected model that would place them at or near extinction around 2010, placing them in imminent risk of endangerment.

New Jersey Audubon has never said that the horseshoe crab is at risk from disappearing. You will never have me make that statement but rather it's ecological interactions. Really quick I just want to go through the various science items that we have on our agenda.

We have Delaware Bay aerial surveys of shorebirds from 1982 and then 1986 to the present showing statistically significant declines in several species of shorebirds, including the red knots.

We have the weight gain rates from scientists from four continents, shorebird experts, showing that at the peak you had red knots putting on more than 9 grams of fat per day. They are now down to around 2 grams per day.

We have the Tierra del Fuego studies, Guy Morrison and then most recently again the international team of shorebird experts, that has a population of red knots near the jumping off point of 15,000 individuals.

And, again, it's the expert opinion of the shorebird biologists that once you get below, at or near that figure of 15,000 that genetic mutations can place the population at great risk. We have the arctic studies in regards to the red knots and being tracked on their breeding grounds.

We know that that density has decreased significantly

during that same time period. We have the Baker et al studies and the proceedings of the Royal Society of London. That's one of Europe's most prestigious journals.

Again with the population model it's not a prediction but it clearly summarizes that the red knot, Rufus subspecies, is at imminent risk of endangerment. We have the Morrison et al study, again in 2004, in the Condor coming to the same conclusions.

And they both point to the endangerment risk being caused by the over harvest of crabs from the perspective of shorebirds. I want to stress that -- from the perspective of shorebirds as well as potential beach erosion.

What we have before us today is we can't vote on beach erosion but we can vote on the harvest. With the shorebird interactions of the reliance on horseshoe crab eggs we have works of Drs. Tsipoura and Berger and Dr. Harimis at U.S.G.S. showing conclusively that, yes, indeed these shorebirds rely on the horseshoe crab eggs, whether it's stomach contents or doing the radio-isotope analysis or doing the blood work.

We know that these birds are feeding on that. We also know from the peer review literature that there is no other reliable food source. From the horseshoe crab side we have the Delaware trawl survey work, again from 1990 to the present, showing a statistically significant decline.

We have the works of Dr. Botton and Loveland that has been followed by the Division of Fish and Wildlife in New Jersey showing, again, a statistically significant decline. We have the works of Dr. Hata that shows some declines and some stable segments in males and females in the core and fringe populations. But again I want to stress that work did not begin until 2002.

We have the work of Dr. David Smith again reporting declines in Delaware and a population in New Jersey that's stable to declining less than 4 percent. Again, we're looking at post-2000.

We have the models of the paper of Michelle Davis. Again, that has been the source of some controversy. It is not central to our argument but again I read that paper and actually thought it was good news.

They had the population and again in Figure 9 of that paper which has been accepted for peer review has the stock recovering in a time period that is, not only

is reasonable but it's exciting from the perspective of shorebirds. That has the horseshoe crab population rebounding in a time period that is relevant to the shorebird risk time period.

CHAIRMAN FREEMAN: Eric, you've got 30 seconds.

MR. STILES: Thank you very much, Mr. Chairman. So I stress from the perspective of the shorebirds. I'm not here saying that the horseshoe crab signs would indicate that the horseshoe crab is an endangered species.

I am here to talk about the ecological interactions and clearly the burden upon the science indicates that risk-averse strategy not only is dictated but it's incredibly urgent and must be done so immediately in order to safeguard these species.

I also want to stress that while we are not interested in having an economic hardship impact on others there is another side of the equation, nature-based tourism on the New Jersey side of the Delaware Bay.

This is not my figures but the DEP. The Division of Fish and Wildlife hired an economic analyst to take a look at wildlife watching on the Delaware Bay -- \$17 to \$34 million.

CHAIRMAN FREEMAN: Eric, your time is up.

MR. STILES: Thank you very much for your time and consideration.

CHAIRMAN FREEMAN: Captain Litchko. Mike, keep your comments to two minutes.

CAPTAIN MICHAEL LITCHKO: Thank you. My name is Mike Litchko. The information that Mr. Stiles talked about, he did, Larry Niles and him did file a court affidavit stating that the horseshoe crab population was 85,000 back in 1997 and now we know it to be 18 million in the Delaware Bay.

At that time he told us that they would be extinct by 2007. Now we know that's wrong. Let's talk about the weight gain studies of the red knots.

What he did, how they compared those studies was they took the high weight bird on May 22<sup>nd</sup> when the horseshoe crabs were around, got 8.6 grams on there, and then compared that to the first or second week in May when there is only 2 grams and no horseshoe

crabs around.

So that was a, that comparison was not fairly compared and the shorebird technical committee reviewed that science. Let's talk about the regression models on the weight gains also of New Jersey.

They used population estimates in 1989 of the Clark and Niles, '93, where that population, that was three days of populations of a high of 90,000 and then compared them to a single day back in 2002.

So he used three days of populations and compared them to a single day. They said it's not useful. The weight gain studies according to the peer review were inherently flawed because of that reason.

The Delaware Bay population estimates that were used, the peer review said that those population estimates weren't useful for assessing populations in the Delaware Bay. One of the reasons was because there was no beach dynamics included in that because the earlier studies showed beach analysis in there.

According to this Dr. Larry Niles, he said that the Delaware Bay beaches haven't changed in 30 years. I'd like to pass these pictures around so everybody could take a look at them, on both sides.

These are pictures of the beaches where there are thousands of feet of beach and there is nothing today. His science should reflect the beaches. That's one of the major problems that we have.

Where are you going to put the abundance? Where are the eggs going to feed if we have no beaches left no more? Right now they're counting birds underneath of the houses of here, of these places here.

When he talked about the arctic population of the red knots, what he did was he weighed those birds after they were ten days in Canada, after they had already arrived, 10 days later. That's what the peer review said when they reviewed that information.

CHAIRMAN FREEMAN: Mike, 30 seconds.

MR. LITCHKO: This is what I call "research misconduct." We requested the Department of the Interior to do a research of his information. The U.S. Fish and Wildlife is underway investigating his science. And he has not come forward with a lot of the information, especially the

beach dynamics.

David Smith said that the, in his report there that the abundance of egg densities on the Delaware Bay, on the New Jersey side of the Delaware Bay beaches were higher. Their young of the year juveniles were the record highs for the last two years in recruitment rate of the horseshoe crabs.

Between Maine and the Yucatan Peninsula there is over 100 million horseshoe crabs documented, no decline in horseshoe crabs as Dr. Shuster has clearly stated. At no time was there ever a crisis.

This all started out on a crisis of horseshoe crabs. When they couldn't prove that then they went for the horseshoe crab egg abundance. When they couldn't prove that they went to the migratory shorebirds.

Now that they've fudged that information in South America and on the Delaware Bay what have they got? Their hands are all tied to do a moratorium because once the science catches up with them, once U.S. Fish and Wildlife or once Department of Interior investigates some of this science here we're going to have, we're going to recognize what the problem is here.

I'm asking you not to have a moratorium until everything has been investigated. At this last meeting you requested me to send this information to you so we sent it to the Department of the Interior to have them investigate it.

CHAIRMAN FREEMAN: You're out of time, Mike. All right, thank you. You've used your time. Mr. Watson.

MR. JOHN WATSON, JR.: Good afternoon, Mr. Chairman, and board members. I am here today. My name is John Watson, Jr. I'm the assistant commissioner for Natural Historic Resources for the New Jersey Department of Environmental Protection.

I am here today basically to read into the record a letter submitted by Commissioner Brad Campbell to the chairman earlier today. As you are aware, as many of you are probably aware, Commissioner Campbell has been in close consultation with his counterparts in the other states with the hope that we might develop a unified position on how we deal with this very serious matter.

Mr. Chairman, if you don't mind, I will submit this document to you officially so I'm going to skip the

salutation part for the sake of time so that others can get to the mic. And I will just go down and say Dear Mr. Chairman:

“As you are well aware the migratory red knots depend on horseshoe crab eggs from the Delaware Bay to provide the energy necessary to complete their trip to the arctic breeding grounds each year.

“Current models developed by a team of international researchers predict that the red knot population is on the path to extinction, possibly within the next five years.

“Consequently a team of shorebird scientists is in the process of finalizing a status assessment for the United States Fish and Wildlife Service that will be used to support listing of the red knot as “threatened” under the federal Endangered Species Act. The red knot already is so listed under New Jersey’s Endangered Species and Non-Game Endangered Act.

“These scientists recently completed a letter to the Atlantic States Marine Fisheries Commission describing the lack of horseshoe crab eggs for shorebirds on the Delaware Bay and requested a harvest moratorium. And their view of the science and the appropriate management response is supported by the DEP’s Division of Fish and Wildlife.

“We have reviewed all of the data made available to us on the status of the red knot and the horseshoe crab and we are persuaded that the coast-wide measures are essential if we are to avert extinction of the red knot.

“DEP is specifically requesting that the ASMFC consider a regional moratorium on horseshoe crab harvest through amendments to the Horseshoe Crab Management Plan.

“This moratorium would be tied to certain thresholds that would allow the reopening of this fishery as soon as specified recovery criteria have been met. The impact of harvest restrictions on the livelihood and families of our commercial fishermen imposes a heavy burden of justification on us in requesting a moratorium, Mr. Chairman.

“New Jersey’s commercial fishermen have been subject to additional restrictions and, thus, have paid a higher price than those in other states. But we are persuaded that state-by-state or incremental measures will be ineffective in saving the red knot from extinction. And so we cannot justify our obligations to protect this species.

“If the Atlantic States Marine Fisheries Commission acts promptly and decisively the affected states can work in a coordinated fashion to seek appropriate relief for the affected fishermen as well.

“Delaware and New Jersey have been in active discussion concerning the appropriate suite of harvest restrictions and other measures needed to address this urgent conservation challenge and we look forward to expanding our dialogue to include horseshoe crab management boards.

“The board has supported conservation measures taken by New Jersey and Delaware to protect spawning crabs and shorebirds in the past. And the Atlantic States Marine Fisheries Commission has enacted coast-wide measures to complement those restrictions.

“I urge the Horseshoe Crab Management Board to continue its conservation and management leadership by reviewing this

request in light of its available data and supporting appropriate amendments to the Horseshoe Crab Management Plan to protect at-risk populations of the red knots.”

Signed Bradley Campbell, Commissioner of the State Department of Environmental Protection. Thank you, Mr. Chairman, for your time.

CHAIRMAN FREEMAN: Thank you very much. Anyone else? Mr. Givens.

MR. CHARLES GIVENS: Bruce, you know I'm Charles Givens. I'm from Cape May. I'm a commercial fisherman and I'd like to be as brief as possible to give other people time to talk as well. I just want to talk briefly about one scientific report that was published in the — you can't hear me?

I want to talk today just about, I want to be brief and I want to talk about one study that was cited here today that was published in the Royal Society of London's journal. That study is known as the “Rapid Population Decline in Red Knots, Fitness Consequences of Decreased Refueling Rates and Late Arrival on the Delaware Bay.” The authors are Baker, Gonzales and others.

If you check in the peer review that we had a couple years ago, 2003, you will see that that is listed in the bibliography and that that science was reviewed by the U.S. Fish and Wildlife Service for this board.

Their conclusions or some of their conclusions of that study were that unfortunately attempts to estimate growth rate based on independent samples of body mass are inherently flawed as assumptions have been made to accommodate the uncertainty in the arrival of the birds.

I'd like to point out that the U.S. Fish and Wildlife Service paid for this study. It went through the United States Fish and Wildlife Service's peer review and that's basically what they said, it was inherently flawed.

It has now been exported overseas, published in a journal there, essentially the same science. And it has now been re-imported and it's one of the flagship science articles here that they're citing as necessary for listing as endangered and it has become part of the lawsuit that the environmental groups have published.

So I just, you know in these troubled times here with

the war, all the disasters and hurricanes, I just see that as a waste of taxpayer's money, you know, my money basically, to have this report peer reviewed, shipped overseas, shipped back and become a part of a lawsuit that's actually suing the people that paid for it. That's just incredible to me. That's all I have to say. Thank you.

CHAIRMAN FREEMAN: Thank you, Charlie. Yes, sir, in the back.

MR. MERRILL CAMPBELL: My name is Merrill Campbell. I'm from Maryland. There are three of us here today representing the commercial fishermen. I work for a company called Southern Connection Seafood. But yet us three here today are representing some 29 boats and two fish companies and two conch processors. I have just a few brief comments, very brief.

Great compromises have been made in the last few years and I am a member of the advisory panel for the Atlantic States, as well, on the horseshoe crab. But we have to ask ourselves, are we conserving? Are we managing? Or are we preserving the horseshoe crab?

Well, I'd like to think that the board is managing the horseshoe crab. And I had a question here, another rhetorical question. Is it not true that juvenile and adult population of horseshoe crabs are stable and thriving under the current restrictions that we have?

And we've heard testimony briefly earlier by Dr. Carl Shuster. I wholeheartedly agree with him. And I think the management board should value his comments. After all, he is very famous in this field of the horseshoe crab.

Any changes in this current responsible plan of horseshoe crab will severely impact conch fishermen all over the East Coast, not to mention the other user groups. In the Mid-Atlantic region there is probably 20 conchers for each port.

No horseshoe crab, no conch fishery. You just wiped us out. There is nothing left. I would like to strongly recommend to the management board status quo with the current restrictions that we have right now, using the facts that we have now and not based on political considerations. Thank you very much.

CHAIRMAN FREEMAN: Thank you. Anyone else? Yes, sir. Please come forward and then, Perry, would you go next.

MR. MICHAEL DAWSON: I'm Michael Dawson from Associates of Cape Cod, a biomedical manufacturer. And I just wanted to stress the importance of both the horseshoe crab and the LAL reagent that is derived from it.

Everybody in this room has benefited from horseshoe crabs and from the LAL reagent. It is a test for a bacterial substance, endotoxin. And it is used in the release of injectible drugs, IV solutions, medical devices. So if you have ever had an injection, received a vaccine, been on IV therapy, you have benefited from horseshoe crabs.

The presence of endotoxin in these products can lead to fever. If there is enough endotoxin, shock; and if it is very substantial amounts of endotoxin, can be lethal. And endotoxin has a wide range of immunological effects. So the LAL reagent is critical to public health.

In view of the minimal affect upon horseshoe crab populations, the LAL manufacturers would urge an exemption coupled with monitoring of the LAL industry from any moratorium that is placed on the horseshoe crab fishery.

The LAL manufacturers fully support scientifically-based conservation measures. We depend on healthy horseshoe crab populations, as does everyone in this room. Thank you very much.

CHAIRMAN FREEMAN: Thank you. Anyone else? I saw a hand. I'm sorry, Perry next. I'm sorry.

MR. RON BERZOFSKY: I'm Ron Berzofsky from Cambrex Bioscience, also a biomedical user of the horseshoe crab. Mr. Chairman, all interested groups have studies to support their respective interests and probably they contain both good data as well as bad data on both sides.

I applaud the action of the board as stated in the beginning of your opening remarks. And this issue should be given to the technical review committee to review and to review all studies and generate a final report with their recommendations, considering all data.

I suggest that the board should create a time deadline in which interested parties can submit their studies for a timely consideration and then an appropriate review and recommendations can be generated. Action on an apparent one-sided approach is not

responsible. Thank you.

CHAIRMAN FREEMAN: Thank you. Mr. Plumart.

MR. PERRY PLUMART: Thank you, Mr. Chairman, and members of the Horseshoe Crab Management Board. I am here on -- my name is Perry Plumart and I'm with the, Director of Conservation Advocacy for the American Bird Conservancy.

I'm here representing my colleagues and their organizations: Caroline Kennedy of Defenders of Wildlife; Greg Butcher of the National Audubon Society; Tim Dillingham from the American Littoral Society; and Bill Cook from the Citizens Campaign for the Environment.

I think, Mr. Chairman, today that there are going to be some tough choices that have to be made here today but I think that we need to do what is right for the migratory shorebirds, the red knot, the long-term interest of the horseshoe crab and also the long-term interest of the commercial fishermen.

I think that the quotas that are in place today are not based on science. They're not based on an understanding of the population. What they are based on is the beginning of, is the highest landings of horseshoe crabs that were recorded and then the regulations and the quotas were based on the biggest take of horseshoe crabs.

I think that this was after, also, Mr. Chairman, that there was an unregulated fishery that took millions of horseshoe crabs out of the population in the 1990s, targeting breeding females. I think because of the situation right now that the red knot is in we need to take serious regulatory measures, including a moratorium in the Mid-Atlantic, Mr. Chairman.

That's in order to help the birds and in the long run for the horseshoe crabs. Our organizations have always supported an exempt for the biomedical industry.

So I think today, Mr. Chairman, on behalf of our organizations we need to reduce the take of the horseshoe crab and in order to benefit the birds and we call on you to implement the process to impose a moratorium. Thank you.

CHAIRMAN FREEMAN: All right, thank you, Perry. Is there anyone else? I'm going to restrict this. Let me, I see two hands, Ernie and then

a gentlemen in red. Would you come forward, Ernie. Captain Bowden. Again, keep your remarks to two minutes, please.

CAPTAIN ERNEST BOWDEN: I'm Ernest Bowden. I'm representing the Eastern Shore Working Watermen's Association and Bernie Conchs. It's located in Sheraton, Virginia, and is one of the larger Virginia-North Hampton County employers.

The best available economic data on the whelk pot fishery was prepared as a formal economic assessment for the U.S. Fish and Wildlife Service in 2000. That study indicates that the whelk pot fishery generates \$11 to \$15 million of regional economic output and creates 270 to 370 jobs.

Virginia's whelk processing industry accounts for approximately half of these jobs. Today's whelk industry uses far fewer horseshoe crabs than it did in the mid-1990s.

Bait conserving devices such as bait bags and bait cups are being used in an industry from Virginia to Massachusetts. And the high cost of bait and fuel have led to less overall effort in the whelk fishery.

The industry's use of bait saving devices has cut the demand for horseshoe crabs by over 50 percent. These conservation efforts have established the industry as a biologically sustainable and ecologically viable industry and these conservation measures should be acknowledged by the fishery's managers.

As the board considers the request for a moratorium the ultimate question is not a shorebird question; rather, the ultimate question is one of the horseshoe crab population dynamics and fishing mortality.

Recent population simulations modeled by the U.S.G.S. and the U.S.F.W.S. concludes that a moratorium will result in a barely detectible increase in the horseshoe crab population, increasing it by only 6 percent more than the current restrictions over a 15-year simulated period.

This would not result in any meaningful improvement in the egg availability for the birds compared to the current risk-averse management plan. Recent work by the U.S.G.S. confirmed that the rate of removal from the horseshoe crab population is currently 3 percent with a confidence interval from 2 to 4 percent.

To put fishing mortality in perspective, natural stranding mortality associated with spawning is estimated at 10 percent. Several things are remarkable about the 3 percent rate of removal.

It is as close as you can reasonably get to a zero harvest. Thanks to bait conserving devices it will support hundreds of jobs and over \$10 million in regional economic output for the seafood industry.

It is much more than a number to those who earn a living in processing plants and on the water. It literally allows these workers to feed babies, pay rent, pay mortgages, and fund college savings plans.

The Horseshoe Crab Technical Committee pointed to the following positive indicators which are clear evidence that the population has responded to the current risk-averse management plan which has cut harvesting by over 70 percent from the reference period landing and established the Shuster Sanctuary:

Number 1, expansion of the year classes in the U.S.G.S. data set; Number 2, record levels for the past two years of juvenile and young of the year in the Delaware 16-foot trawl survey; Number 3, a significant positive trend in juveniles from 1998 to 2005 in the Delaware 16-foot trawl survey.

The Horseshoe Crab Technical Committee considered all of the data, including the Shorebird Technical Committee recommendations, and concluded that no additional harvesting restrictions are warranted at this time.

The ASMFC regulations require that the fishery management plans are based on the best available science which in this case clearly indicates that a moratorium would be inconsistent with the best available science.

A moratorium would also be inconsistent with the plan's stated goal of managing the resource as a multi-use resource. I submit that allowing the industry to have 3 percent of the population and letting the birds have 97 percent of the population is an extremely risk-averse solution for this multi-use resource and that it is exactly what the science indicates is happening today. Thank you very much.

CHAIRMAN FREEMAN: Thank you, Ernie. The gentleman in the red shirt. You'd be the last speaker. Again, I remind you, keep your remarks to two minutes, please.

MR. ED BLAINE: Hello, my name is Ed

Blaine. I live in Cape May County. I'm a commercial concher, gillnetter. Eight-five percent of my income comes from conch. I would just like to say that there is no shortage of the birds; there is a shortage of beach for the birds to come up on.

Now, two years ago I believe it was I was at a meeting in Cape May. And I go to a lot of meetings, an awful lot of meetings. Same thing all the time. I asked one of the doctors who was at the meeting, "Why is it that you have not seen any of these birds that have left Cape May County? When they went all the way around they have not come back with a transmitter on them?" I don't know. Okay, he answered that question.

Move on. And like the man back here from Cape Cod said, okay, yes, everybody in this room benefits from the medicine they get from the horseshoe crab. Okay, well, I'm sure if anybody here eats at a fine Italian restaurant they like to have a salad, too. Okay, well, we all benefit from that, too.

There is more at stake here than just standing on a beach with binoculars and watching these birds. I'm not here representing -- I'm not even representing the fishermen behind me. I'm just talking for myself here. Maybe they like what I say, maybe they don't.

But I feel as though that it's very important to have these horseshoe crabs and we all need that and we all know that. Now, every time I come to these meetings always at the end of the comment when somebody from the Audubon Society, I have nothing, there is nothing wrong with that. I think it's a great thing.

The bottom line is get that little pitch in, by the way, it's worth \$37 million in Cape May County. Well, guess what, that's great and I'm happy for that. I really am. And we don't make \$37 million on our conchs in Cape May County. But we make a living. Our taxes are going up 28 to 30 percent in Cape May County.

What I'm saying is here, we don't pick it, we just want to make a living. We don't bother anybody. We don't get pay raises. We want a pay raise, we work harder. That's how we get a pay raise.

We don't get 3 percent over so many years. This is what I don't understand. I'm not real knowledgeable on a lot of this stuff. But I think it's really important what is going on here today. And the fisherman has been cut back from 300,000 to 150,000. This year's harvest, 80,000.

The only thing that I see that really gets bled out of this meeting is the fishermen. The horseshoe crab gets some blood taken out and he goes back alive. Once a fisherman is bled out, he's dead.

That might make some people happy but it doesn't make me happy and I'm sure it doesn't make these men back here happy. We have families. We don't complain. We just want to work. A lot of people may not understand that. They don't understand it.

It's great, you want to do what you want to do. I understand that. We just want to get up in the morning. We want to go to work. We want to pay our bills like anybody else. Just let us do it.

You've squeezed them down from 300 and some permits down to 37 permits. I mean how much more can you squeeze? By the way, I'm not representing anybody. I'm not drawing a paycheck from any group so thank you very much.

## **PLAN REVIEW TEAM REPORTS**

**CHAIRMAN FREEMAN:** All right, thank you. All right, we now need to move on to our plan review team report by Brad Spear.

**MR. BRADDOCK J. SPEAR:** Thank you, Mr. Chairman. Let me apologize ahead of time. My presentation won't be as interesting or exciting as what you've just heard. I'll try and get through this as quickly as possible. Next slide.

Just a couple of highlights from the state compliance reports that were submitted this past year. Florida landed this past, in 2004, over 19,000 crabs for marine life display or aquaria.

The plan review team has been tracking these landings for the past four years and noticed that there has been a slight increase in the past few years and just recommends to Florida that they consider establishing a cap, even at the greatest level of harvest of these crabs, just in case there is a significant increase in landings.

North Carolina in 2003 exceeded its quota by 331 crabs or 1.4 percent. They took measures to avoid this in the future. And in 2004 landings were well below its quota and that overage was paid back. Next slide.

State landings for 2004 are preliminary. We do this every year just because in the next year we ask for

verification of landings by the states, at which point they become final.

However, the plan review team finds that it does not look like any outstanding landings will put states out of compliance by exceeding their quota. Therefore the plan review team recommends that all jurisdictions be found in compliance for 2004. Next slide.

Maine, New Hampshire, Pennsylvania, District of Columbia, Potomac River Fisheries Commission, South Carolina, Georgia, and Florida all requested de minimis status. De minimis was defined for 2004 as 8,483 crabs. And the plan review team recommends that all jurisdictions be granted de minimis status for 2005.

To move to the FMP review, the bait fishery, again, preliminary landings for 2004 were approximately 645,915 crabs. This was equivalent to over a 38 percent reduction from the previous year and overall 78.5 percent reduction from the reference period landings.

The largest drop in landings occurred in Massachusetts, New Jersey, Delaware and Virginia. Two thousand four was the first year that states were required to report the monitoring requirements in Addendum III. Included in those monitoring requirements were specific reporting of the biomedical fishery.

The plan review team compiled the coast-wide landings, estimated coast-wide harvest for biomedical use at 292,760 crabs. There was an additional 50,000 crabs or so that were harvested as bait that were bled and returned back to the bait market and counted against state quotas. So those were not included in the coast-wide harvest for biomedical use.

Using that 292,000 number, the plan review team took a percent mortality from transport from harvest to the bleeding facility and estimated that, again, the mortality from that, got that number and then estimated the mortality from the actual bleeding process and transport back to the ocean.

Using a range of mortalities that have been cited in studies we came up with estimated mortality from the biomedical fishery between 38,205 and 58,845 crabs. If you recall, in the 1998 FMP the board established a mortality threshold of 57,500 crabs where if this was exceeded the board would consider action.

The plan review team recommends no action at this

time but recommends close continued monitoring. They felt that between the time that the FMP was passed and now that there has been no substantial increase in harvest for biomedical use. Next slide.

A couple of highlights from the report in the assessment advice section, there was a peer review conducted this past summer of the stock assessment subcommittee's proposed assessment methodology.

This was a methodology developed a couple of years back and it was looked at as the future of the horseshoe crab stock assessment. We conducted this external peer review to make sure that that model was accepted outside of the commission and that we were on track to collect the appropriate data to feed into that model.

Preliminary results have come out and the full report should be available soon. Also, as you've heard earlier in the meeting, that there are several assessment methodologies being explored. Up there is a list of them that are currently either conducted or in review for publication.

And the technical committee generally briefly reviewed these assessments and will be discussed earlier. A couple of the research and monitoring highlights, it was reported that the fiscal year 2006 Senate markup bill included over \$600,000 for the Virginia Tech research.

Once again this is the money that goes in part to fund the Virginia Tech Benthic Trawl Survey. The 2005 Delaware Bay Spawning Survey will be available, the results will be available shortly. And the technical committee will be reviewing those results as they do annually in early 2006.

Also for the first time in 2005 during the spawning season there was a coordinated egg abundance survey conducted across the Delaware Bay in cooperation with New Jersey, Delaware, U.S.G.S., and the Fish and Wildlife Service. Next slide.

Another highlight in 2004, it was reported that Massachusetts fishermen were voluntarily using bait cups in their conch trap. The fishermen up there are quite innovative, as most are, and have developed a bait cup that uses up to a tenth of a crab per cup.

That lasts for about two or three days depending on water temperature. But they've been able to fish with success with less crabs using this bait cup. Another note, there has been development on a population shorebird model.

This was one of the recommendations that came out of the Shorebird Technical Committee report in 2003. So once more data is collected this model should be developed further.

A couple of recommendations from the plan review team: again, continued support for the Virginia Tech Trawl Survey, whether it's through Congress appropriations or through some other creative funding.

Also the plan review team recommends that the technical committee should continue to promote and review current assessment work. And I just wanted to make a note to the management board that again these assessment methodologies have not been peer reviewed but may be in the near future which obviously may have management implications.

And we recommend that states continue to follow the biomedical reporting requirements of Addendum I so we can continue to track biomedical use. And that concludes my report.

CHAIRMAN FREEMAN: All right, any questions from the board? Ritchie and then John.

MR. WHITE: Thank you, Mr. Chairman. Could you put the slide back up that showed de minimis status of the states. In the previous slide I think it showed Florida had a harvest of 14,000 crabs. And I guess my question was did the PRT feel that that was a one-time type harvest and you still recommended de minimis because that wasn't an ongoing harvest level?

MR. SPEAR: The judgment the PRT used for de minimis it's defined as bait harvest so we've been monitoring the harvest for marine life or aquarium trade separately from the bait harvest. And when we made the de minimis recommendations it was based on the bait harvest.

CHAIRMAN FREEMAN: John.

MR. JOHN I. NELSON, JR.: Mr. Chairman, that did answer my question. I guess if you need a **motion then for de minimis status as recommended I would so move.**

MR. PATTEN D. WHITE: Second.

CHAIRMAN FREEMAN: All right, there has been a motion and a second. Any discussion? I heard Pat White or George, take your pick. Any

discussion on the motion? Erling.

MR. ERLING BERG: Thank you, Mr. Chairman. My question would be for Brad. Were there any other states on that list that exceeded the recommended de minimis numbers? Florida apparently went over. Were there any others on that list that you showed on the previous slide?

MR. SPEAR: No, there weren't is the short answer. If you look at what was handed out at the beginning of the meeting, the 2005 review of the fishery management plan document, on Page 11, Table 1, there is a list of states' landings, preliminary bait landings for 2004.

Using the de minimis threshold of a little over 8,000 crabs, average the landings from 2003-2004, it did not put any states over the de minimis threshold.

MR. BERG: Okay, thank you.

CHAIRMAN FREEMAN: I'm sorry, Gordon, you had your hand up and I skipped right over you.

MR. GORDON C. COLVIN: I have a question about the benthic survey, the Virginia Tech Benthic Survey, Brad. Can you outline the status of that survey for 2005?

MR. SPEAR: As far as I know it was conducted but I haven't heard an update on dates of when it was conducted or any results.

MR. COLVIN: And was it conducted for the original core area or the expanded area?

MR. SPEAR: I'm not sure. The principal investigator of the survey is present. You might ask him if he'd like to come forward.

CHAIRMAN FREEMAN: Just identify yourself for the record.

MR. DAVID HATA: My name is David Hata, H-a-t-a, from Virginia Tech. The trawl survey is still ongoing. We've been having a lot of problems with weather delays. Because of the weather delays we've had to pare down our -- we had originally planned on an expanded survey but the weather delays have eaten into our budget and we're winding up having to pare down our plans to fit what money we have.

CHAIRMAN FREEMAN: Gordon, do you

have any other questions?

MR. COLVIN: Well, that answers my question. I would just ask that this be something that the technical committee and the plan review team keep attentive to and keep communicating with us. I mean obviously I'll express my disappointment that the scope of the survey, the geographic scope of the survey has been reduced this year and goodness knows there is nothing we can do about the weather.

But, a lot of people have "gone to bat" for appropriations to support that survey and I want to strongly advocate continuation of the expanded geographic extent of the survey to the greatest extent possible. Thank you.

CHAIRMAN FREEMAN: All right, thank you. Any comments relative to the motion? Any comments on the motion? Is there any dissent to the motion from the board? Any dissent? If not, we'll accept that motion.

MR. GEORGE LAPOINTE: Do we need a motion to accept the FMP review as well I think? We just did de minimis status but we didn't do the FMP review.

CHAIRMAN FREEMAN: I think a motion to accept the report would be in order.

MR. LAPOINTE: **So moved**, Mr. Chairman.

CHAIRMAN FREEMAN: All right, Mr. Lapointe; second by -- well, there's a lot of people -- Ritchie White. You've got too many already, Pat. All right, Joe, did you need me to read those into the record? All right. Okay, moved to approve the FMP.

Is there any discussion on that motion by any of the board members? Any discussion? Seeing none, is there any opposition? Seeing none, the report is accepted. Thank you. That's it. Mike Oates, are you ready?

The next item on the agenda -- the agenda. I sound like John. (Laughter) -- is the underwater video study. Mike Oates I think most of you know or at least have seen. He has been filming these board meetings and other meetings for at least 200 years.

Mike has actually produced documentary that has been shown on public television. In fact, I believe he has received an award for that particular documentary on horseshoe crabs. He is in the process of producing

others but because of his skills and videography Mike has entered into a contract to develop an underwater video system.

You realize that the technical committee a number of years ago indicated we needed to do a survey of the horseshoe crab population. One possibility was the traditional surveys with the trawl.

The other was a video survey. And we went with the trawl survey simply because we could move forward with it. But Mike has worked to develop the video part and essentially turn it over to him. You're on.

### UNDERWATER VIDEO STUDY

MR. MICHAEL OATES: Okay, hello everyone. My name is Mike Oates. I'm not a scientist and this has really been more of a qualitative research project over three years. And there are some other people I want to thank. Frank Eicherly is known as "Thumper." He's a waterman. We used his boat.

Carl Shuster was pretty heavily involved in this in the beginning. Neil, his son, actually built the video sled that you're going to see. And, finally, Bob Munson who was very instrumental. And he was a former participant in the ASMFC. Many of you know him. Okay, we can go to the next.

Okay, this project began, believe it or not, three years ago, and while Bruce has been after me to spend the money I was reluctant to do so until we did some research on some equipment. So you're going to see a three-year history here as quickly as possible and then maybe some video.

The project goals were to observe the underwater behavior of the horseshoe crabs in Delaware Bay. There hasn't been very much work done on seeing how these animals behave under water. So the idea here was to go to the bay, which I'm very familiar with, where there are a lot of animals, and look for them.

And we needed to research the equipment that would be able to do this. We would recommend that if possible purchase that equipment for future use for our testing and for possible future use. We were able to do that.

And my own personal goal was to develop a system that was small, lightweight and easy to use. And we feel we've accomplished that. So, it is actually possible to take this system out on a 20 to 25 foot

boat. The sled can be picked up by one person.

The project strategy, what we collectively came to seek out here was we're going to research and test a moveable underwater transport system for a video camera. So we had to design some kind of a sled or some way of moving the camera around.

We had to research different video gear in a variety of situations under water. And finally we had to record the information in a way that could be used for archival purposes.

The challenges. The environment of Delaware Bay, for those of you unfamiliar with it, the tides are very, very strong. The bottom is very, very sandy which makes it ideal spawning habitat and actually just general habitat for horseshoe crabs.

There is a lot of turbidity because of the strong tides. So when the tide starts to run, it's very tough to see down there. Low light, okay, because of the turbidity. And, finally, we don't know where the crabs are.

From the challenges from the camera side. You needed a system that was lightweight but strong, maneuverable and stable. In other words you had to be able to move this thing around pretty quickly but it had to be able to kind of sit on the bottom and not be affected by the tides.

And you had to minimize the turbulence associated with the actual sled or whatever mechanism you were going to use that might block the camera's field of view.

From the camera side you needed something that was waterproof and pretty durable, easy to adjust, meaning if you wanted to change the configuration of how the camera was mounted on whatever you were using you had to be able to do that pretty quickly. You know we had situations where we had to adapt rapidly.

And, finally, low power with respect to lights. Typically these video benthic sleds use a tremendous amount of energy which require generators, and I'll get into that in a little bit.

Three years of testing. Okay, Year 1 which was 2003, we designed and built the sled that you see here and we demoed some equipment from Deep Sea Power and Light. They do a lot of work out on the Pacific. You can go to the next slide.

Boy, that's tough to see. Can you kill these overhead lights, possibly, just the fluorescents? There is no way to do that? Okay, well, you can't see it too well there but the camera is there and believe it or not what we did was we used a bunch of car headlights and we kind of used an epoxy over them and basically lit the bottom with this thing. Go to the next shot, please.

This is another shot of the sled. And finally you can move to the next one. That's the camera itself and the housing. Basically it aims straight down, very wide angle lens. Depending on the height above the bottom of the sled you could achieve up to a five foot span across.

At the lowest, with the camera down, about as near to the bottom as possible you would still be able to see 18 inches to 2 feet across on the bottom. Okay, the analysis of that sled. I'm not going to show any of the video.

Real simple, the strengths were we built this benthic sled and it worked. Okay? It kept the turbulence out of the way of the camera's view. The low power requirement was met. However, the camera was very large, very heavy, and expensive.

The camera was not easily adjusted. It could just be aimed straight down. Finally, the lighting adjustments were not possible since we were working with car headlights and a pretty simple system.

Year 2, ROV vehicle. Okay, this thing we had to rent. It's worth about 30 grand. It's an amazing piece of technology. It turned out it was inappropriate. I'll take you through that. Okay, next slide.

Basically it looks like a little ice cream sandwich. It weighs about 20 pounds and it floats. And it has thrusters in it. And you can see those blue tubes there. Those are actually electric motors, thrusters. There are two in the back. There is one on the top.

And then there is a camera in a glass case in the front that can rotate 360 degrees. And it's connected to that neutral buoyancy cable that you see there, that kind of lime green. If you go to the next shot.

You drop this thing into the water and, next shot, and you let out the cable and there is 500 meters. Next one. And you fly it like a video game. Okay, so we rented this system and you can't really see here but on the screen there you have the coordinates north, east, west, south. You have some GPS overlay

information.

And you can fly this thing and let it hover like a hovercraft off the bottom and move it around. So it can go up to 1,500 feet. So we were able to set up about 1,500 feet off of shore and actually fly this thing right into shore and beach it and look for horseshoe crabs.

Okay, the problem is these little electric motors -- which were underpowered at the time, they've since improved them. They've gone from a third to a half horse -- they collect algae. And then you've got to take them apart and clean them. It slows you down. Next.

So the analysis there was we came up with a very maneuverable transport system. We were able to remotely focus and move the camera around. But the weaknesses were it was very difficult to operate in strong tides.

In fact, the tide in Delaware Bay, it was impossible to hold this craft in one place, even though the manufacturer claimed that it was possible to do. We simply had too, the water just runs too quickly.

Significant power requirements, bought a generator and it was insufficient. It would constantly blow. The lights on this unit require about 16 amps so you have a tremendous amount of power going out to this unit. And you need to have a generator which leads to more weight and more area used on deck.

And, finally, there was a very limited ability to adjust lighting. The lighting was contained within that ice cream sandwich design, so to speak. Okay, the third year of testing we went back to the original sled.

There had been major improvements made in miniaturized cameras in these three years that I've been watching for. And we were able to develop actually research and over the winter commission the production of, if you go to the next shot, a camera which is very difficult to see there.

But nonetheless the camera is probably about this big and literally the camera itself is as big as my thumb. Black and white, black and white but in low light it switches to infrared. Next shot.

LED lights, and you can see they're on these little, blue, kind of moveable arms. And you can actually just clamp them anywhere you want on the sled and adjust them. And they're very strong, very powerful lights.

They're red LEDs because horseshoe crabs are less susceptible or less affected by red light, according to the research. So the red LEDs are very powerful. We had four of them. We were able to turn on two at a time, two on, four on, none on, et cetera.

And there they are. That gives you an idea. But that light would considerably light up a part of this room, that one light there. And, finally, these lights ran on a little Honda car battery so the entire system is powered on basically something like a motorcycle battery. Okay next.

So we were able to see and we're going to show video now. We were able to see without lights at 60 feet down in Delaware Bay. There is a ball mount on the camera so you can easily adjust it, so you can adjust the camera straight down or you can aim it ahead of you or any, kind of at any direction you want. It's very easy to adjust.

The lighting is less visible to horseshoe crabs. It's easily adjusted and it's powered by a car battery. Next. As far as recording, we used a mini-DV recorder. It's smaller than these little things that you have here. It's actually about this size.

Each frame is actually numbered and retrievable for archive purposes. You are able to also take individual snapshots of camera images as they appear so there is a chip that you are able to hit a button and take a picture.

Finally, the battery, which is no bigger than a, I don't know, it's half the size of this thing, lasts 8 to 10 hours. So the power for the recording system is totally independent of the power for the lights which is another, an electrical interference problem has been eliminated.

Okay, and with that we're going to switch to video. But before we run it I want to just set this up. What we did was, well, we can certainly play it and maybe make it full screen. This first test was done early in the season.

We had some technical problems but now you really need to kill the lights. Otherwise, I don't know how you're going to see this. This is 60 feet down in Delaware Bay, before you get, at slack tide and moving at about three or four miles an hour.

And you can see the bay is very, very sandy. You're lifting up off of a sand hill and the sled is now going to actually drop down and crash a little bit. I just

want to show you kind of what this has been like.

So, here we go. Boom, it's back down. And we continue to pull it along. So in relatively clean water, meaning slack tide, early in the season, before there is any algae and other growth in the water, you're able to see quite a bit so you can aim the camera straight ahead.

This is with existing light at 60 feet. And I show just another sand hill. So there are a series of sand hills. This is the mouth of Delaware Bay. I have all the data if you want it. And then the next thing -- well, here comes a jellyfish but.

The next thing -- you can actually let this run you know because we'll go right into the next one. Okay, now you're going to see at 80 feet in Delaware Bay. The tide is running a little bit more. We're right at the end. We're still at three to four miles.

What I did was I slowed this down to 50 percent so you get an idea. So now you're down with two lights, using only two lights at this point. And you're seeing the bottom of the bay on that same day, the third of May, okay, before the crabs have really come in.

But we're looking for horseshoe crabs so we'll let this run right through to the next piece. So they aren't in this sandy area here this early in the bay, this early in the season, rather.

Okay, we're at 40 feet. It's about a week, nine days later. We're still in that same area headed towards Louis. And we encounter, and I slowed this down to about three-quarters speed, and you can see horseshoe crabs.

Now, obviously you can slow this tape down and play it at various speeds and really get a good look at some things. But basically you see that there are horseshoe crabs. And it's important to note that they're actually in plexus. They're coupled together. This is early in the season.

This is a very deep hole. We went from 16 feet down to 54 feet. It's right at the Cape Henlopen State Park. It is extremely turbid here. And you can see it's very difficult to see the animals.

But this is an area where they're kind of, they kind of gather before they spread out and spawn in Delaware Bay, you know up and down the Delaware Bay, the Delaware side of the coast.

And there are animals and there are a lot of males here that you can see and they're all over the place. But this is a hole where we've done tows. Dave, I mean how long are the tows that are done when we tag these things?

Five minutes. And then how many animals in a five-minute tow? Yes, a couple hundred animals in a five-minute tow in this particular area when we were tagging horseshoe crabs. They key here, though, is to look at the outgoing.

You can see the tide is outgoing and it's full. So this is absolutely the worst conditions possible. And I've slowed it down as much as possible. And you see the animals on the bottom, right down in this area.

Now it's at quarter speed. You will see a coupled pair. See this down here? It's very, very difficult. One of the things we learned, one of the recommendations is you really only work with this camera at slack tide because the tide is moving and that area is particularly problematic in terms of turbidity.

Okay, this is Brown Shoal. Now we're into July. So now you have animals that are beginning to move out of Delaware Bay, as you can see. The tide is going out, meaning from up here down this way. And you can see these trails. You can see the tail thing here.

There is animals that are moving in this direction. The mouth of the bay is down here. And what that has led us to think about, and we've speculated about, seeing those trails and seeing the fact that the animals seem to be on the move with the tide, it would appear -- we're back at the beginning. I think you've got to go to the menu.

We began to look very, very closely at these marks of the tails. Now you can see we're at 7-16. We're at about 20 feet. And there are marks. There are tail marks in here. There is one there. There is one over here. There is another one over there. You see all this? And yet there are no animals.

But the tide is coming in while the animals are now at a point of wanting to migrate out. And I had read in Carl Shuster's book, The American Horseshoe Crab, where he had done some studies that suggested that these animals moved with the tide.

So this is now in July. They're leaving the bay. And I'm seeing all these tail marks. So what we did was we dropped a dredge. You can see them. It's very difficult to see on this screen here.

But there are lines and they're all moving in this direction, up and down here. And what we did was we went back over this area with a dredge. And so we put the camera on the dredge just to see if it could survive this experience, so to speak.

So here is the dredge. We just stuck the camera on there and we stuck the lights on. We literally just clamped it on and dropped this thing in the water. We dredged for 3 minutes and 28 seconds based on the camera data, on the recording data that we had.

And here comes the dredge. It's dropping down. It just hit the bottom. You will not be able to see anything. I edited the sequence in here in the black so that you wouldn't sit here for 3 minutes and 28 seconds.

But we brought this sled, we brought this dredge back up. Notice there is a horseshoe crab stuck here. There is one over here. Okay? So we dragged over that area where we saw all those trails but we didn't see any animals.

And we brought up, and you're only going to get a little bit of it but basically if you look up in here you can see crabs up in here. We actually brought up 48 crabs.

We did this three times and consistently where we found those trails we found horseshoe crabs, even though we didn't see them, which led us to believe -- now we've got to go back to the PowerPoint and just to the next one -- led us to a series of findings.

Obviously horseshoe crabs collect offshore in shallow waters to 20 feet when not spawning. They often remain coupled. We saw a lot of that during the spawning season, while not spawning on the beaches.

And they uncouple because we didn't see any coupled after about the beginning of July. As they were leaving the bay they weren't coupled. They were just leaving the bay. Keep going.

They seem to use tidal currents to facilitate their migration. This kind of supports what Dr. Shuster did some unpublished research -- it's in his book -- about how they put these crabs in kind of a float tank and kind of looked at their behavior.

The other thing is that they seem to burrow into the bottom when the tidal currents run against their migratory path. So they kind of work with the

currents. And keep going. The sled, the sled is best operated during slack tides when turbidity is low. The video equipment is durable and flexible enough to be used on trawl gear, assuming it can be positioned properly.

Future research that could be done with this gear, observe horseshoe crabs as they come into the bay when the water is less turbid. I would love to do that. Use the benthic sled to possibly ground truth trawl data. In other words, stick it right on a trawl and watch what it catches.

Add GPS configuration to overlay on the video recordings. That's easily available. It's just a matter of money. It's not that expensive. And, finally, continue to observe their behavior in the bay, focusing on their migratory behavior relative to tidal currents. That's it. Any questions? (Applause)

CHAIRMAN FREEMAN: Okay, Howard.

MR. HOWARD KING: Just one. Did you correlate any of your studies with lunar cycles?

MR. OATES: Not really, not really. What we did, but what we did do was we went out in the middle of the night. In other words we didn't just do this during the day. We actually went out. We looked at the tidal cycles at three o'clock in the morning. We went out and some of that was, none of that was shown in the middle of the night but we didn't really do that, no.

CHAIRMAN FREEMAN: Other questions. All right, thank you very much. Okay, the next item on the agenda is the Shorebird Technical Committee update. And Greg Breese will do that.

#### **SHOREBIRD TECH COMMITTEE REPORT**

MR. GREGORY BREESE: Thank you, Bruce. Thank you. Okay, is that better? The Shorebird Technical Committee met October 11<sup>th</sup> to the 12<sup>th</sup> in Philadelphia. And to a large extent that was driven by the interest in the management board to get some technical advice from the committee.

They reviewed some surveys and reports that other committees had briefly reviewed and they also tried to respond to some informal questions that this committee had put to them. The spawner survey was one of the ones they looked at. It has data through 2004.

One of the things the committee wanted to point out

is that one of the conclusions on that survey, that the population is stable or slightly declining, could also be stated as there has been no increase.

And they had a few suggestions that we will bring forward later on, on how that study could be reported in a way that helps the Shorebird Technical Committee address some of the issues related to timing of birds and crab spawning.

A few of them were that it would be nice if we could get a percentage of spawning activity per lunar cycle, if neat tide spawning could be measured, if a seasonal summary of the weather and tide stage was included and the beaches that were sampled, and if just the summary for the fixed beaches which are sampled every year could be included. So we'll be talking about that.

Another study that was the Virginia Tech Trawl Survey study, there is some concern regarding the trends that appear to be shown by that survey in the latest report that was issued, namely some decreases in multiparous males in the core area and a decrease in all spawning classes in the peripheral area, though not all of those were significant as based on overlapping confidence intervals.

And there was a suggestion from the committee that availability to catch be looked at because the consistent declines sort of implies that maybe it's a catchability affect as opposed to a true decline and that should be looked at to sort that out.

They also had the chance to look at the impress paper on the surplus production model and at the response that the Horseshoe Crab Stock Assessment Subcommittee had provided and had three points that they wanted to highlight from that report.

One is that it characterizes the horseshoe crab population as depleted with a high harvest and that it indicates that a lack of harvest or a moratorium would lead to a quicker recovery and that the population estimate at the 80 percent confidence interval was .3 to 6.6 million.

Of note also was that it doesn't include in its baseline in that report it doesn't include the Addendum III harvest levels which are approximately 50 percent of what the baseline in that report is. And recommended that this model be refined and assessed for how valid it's results are.

There were several questions that this committee had informally posed, as I mentioned. The first was what

was the status of the red knot population. And the data is pretty clear that the Patagonia population at the tip of South America, wintering population, is in decline.

Northern Brazil wintering population appears to be stable, using some limited data. And the Southeastern United States population is uncertain, again with limited data available. The overall population is certainly not as high as 40,000 from the data that is available and could be considerably less.

And of course the effective breeding population is less than whatever the overall population is because of the two years to reach breeding. The committee asked whether the egg supply was sufficient.

The Shorebird Technical Committee did want to highlight, as Brad has already mentioned, that we finally were able to get a bay-wide egg abundance survey implemented in the spring of 2004 but obviously not a long enough time series to look at trends.

The committee came to a consensus in that there appear to be insufficient eggs available for the population level of shorebirds that were in existence in the year 2002 based on a continued decline and in 2003 and 2005, perhaps, weight gain not appearing to be met for their arctic breeding needs.

Those were both cool weather years or years in which the horseshoe crab spawning was shifted later than usual. Also of note is that in 2003 it appeared that a portion of the population bypassed Delaware Bay. The fate of those birds is not known.

A question about timing between horseshoe crab spawning and shorebird migration, it's obviously a very critical issue that needs to be understood better.

Sort of the conceptual model but the committee is working under is that the horseshoe crab population has a peak and it has a gradual slope up the side and as the total population of spawners is reduced then that contracts the time period in which there may be sufficient eggs.

And as cold weather occurs, then that even shortened period of time where there may be sufficient eggs is shifted further towards June, after the birds have already left.

There was also some information that the committee had available to us, to it, on the radio tagging work that is being done by U.S.G.S. on horseshoe crabs in

Delaware Bay that suggests that new recruits to the spawning population may spawn for a shorter period of time and more closely associated with the moon events.

And that implies that if the age of the population of spawners is slanted or shifted too far towards new recruits then you might reduce the time period over which eggs might be available to the shorebirds.

There was a question about the gull population and other shorebird populations. The committee came to consensus that the wintering populations of the other shorebirds are not well known and thus it's really difficult to measure their populations.

However, there is long-term trend data that is a little broader and a little harder to quantify but it shows decline for most species of shorebirds. Laughing gulls, which are the gulls that we're most concerned about with competition in Delaware Bay, have been stable on the Atlantic Coast since 1979.

Gulls are known to out-compete shorebirds for eggs. There have been a few research papers recently that were provided to the technical committee last fall when they met and indicates that gulls will leave later when disturbance occurs and they'll return more quickly.

And also as shorebird flock size is reduced their ability to compete with gulls for food appears to be reduced as well. Also of note is that the larger gulls are opportunistic predators on the shorebirds.

The last question was what the committee thought a moratorium would affect, what affect a moratorium would have on the shorebirds. The committee discussed that quite a bit.

And using the concept that there is a certain amount of new recruits into the spawning population that are occurring and there is a certain attrition due to natural causes and another attrition from the spawning population due to manmade causes, to the extent that reducing the manmade causes would increase the rate of recovery of the horseshoe crab spawning population, that would be an additional risk-averse measure that could be taken. So, any questions?

CHAIRMAN FREEMAN: Okay, that's a summary of the report. Are there questions? Bill Adler and then Rick.

MR. WILLIAM A. ADLER: Thank you, Mr. Chairman. Back there on when you went

through the red knot population you had stated there was one place where there was a reported decline. I don't know which is the Brazilian one or whatever. Then there was one that had stable and then there was the U.S. not known. Could you just go over that again. That was three. Am I correct?

MR. BREESE: Yes. As best as can be determined right now there are three wintering populations. There is one in the Southeastern United States, Florida-Georgia area, primarily that's known. There is one in Northern Brazil.

And then there is one at the tip of South America, Chile and Argentina. And that population that's down at the tip of South America is the one that has had the most winter surveys and is showing a rather dramatic decline.

MR. ADLER: Okay, so the one in South America is the one that you have listed as declined. Where is the stable one? Was that Brazil?

MR. BREESE: Northern Brazil appeared to be stable.

MR. ADLER: Okay, and what is the other one, the U.S. one?

MR. BREESE: Southeast U.S.

MR. ADLER: Southeast and it's unknown.

MR. BREESE: Yes.

MR. ADLER: Thank you.

CHAIRMAN FREEMAN: Rick.

MR. RICK ROBINS: Thank you, Mr. Chairman. Greg, as I recall, I had the good fortune of attending that meeting and as I recall there was some discussion about the bioenergetic requirements of the shorebirds and trying to develop a more accurate and up to date model as to getting a handle on how many eggs were required for that population.

And the take-away I got from that was that that work is still ongoing but that we really don't have an updated assessment of that bioenergetic requirements. Is that correct?

MR. BREESE: Yes, the states of Delaware and New Jersey have been funding a model of shorebird energetic requirements that is not finished yet. The last I heard was last week talking to the

state of Delaware and they indicated that it basically was ready to be built and what was needed was some additional funding to do that and that most of the parameters in it are known at this point or have been identified.

MR. ROBINS: Okay, and I guess I would bring to the board's attention that you covered the assumption they made in one of their most important findings, namely that was in response to the question that was posed by the board, what effect would a moratorium have on the bird population.

And the assumption that is made before they make the finding that it would be a risk-averse action that would increase the chances for red knot recovery is that harvest mortality is reducing the rate of horseshoe crab recovery which is essentially a question that was left for the horseshoe crab biologists to answer.

MR. BREESE: That's correct.

MR. ROBINS: Okay, thank you.

CHAIRMAN FREEMAN: Okay, before I call on the next individual I'm going to recognize, it puts me at a little difficult position technically. I represent, I'm the proxy. Marty McHugh. Marty is here.

We only get three members at the commission level so, so long as Marty asks the question I'll remain as chair. If there is any other actions taken by him I will step down and turn the chair over to Bob Beal so there is no conflict of interest. So as long as there is a question, Marty, go ahead.

MR. MARTIN J. McHUGH: Appreciate that, Mr. Chairman. At the beginning of your report, Greg, you stated that there were certain studies that the committee had briefly reviewed, certain surveys. Could you just, you know, go over that for a little bit more detail: what were they? Who did them?

MR. BREESE: Certainly. The first was the bay-wide spawner survey that has been going on for, what is it now, six years I think that is a volunteer survey that we've heard about in the past that measures the spawning index for the Delaware Bay.

The second was the trawl survey that Virginia Tech has been leading, the benthic trawl survey that is being hoped will be the basis for the population stock assessment at some point in time. And the third was the paper and press on the surplus production model

that you've also heard about a little bit today.

MR. McHUGH: And who was the author on that paper?

MR. BREESE: On the surplus production model?

MR. McHUGH: Yes.

MR. BREESE: That was -- help me. Brad -  
- Michelle Davis.

MR. McHUGH: So were they reviewed in detail or were they just briefly reviewed or how were they reviewed? I'm not familiar with how that technical committee functions.

MR. BREESE: They were briefly reviewed. The spawner survey and the trawl survey had been reviewed quickly by a sub-portion of the Horseshoe Crab Stock Assessment back in June at the request of the states. Is that correct? Yes.

Anyway, a quick conference call had been called together to review those reports in June. And a response to reviewing those, that quick review, had been produced by the Horseshoe Crab Technical Committee.

And so that paper, that response plus those two reports that the Horseshoe Crab Technical Committee had reviewed had been provided to the Shorebird Technical Committee to review as well.

MR. McHUGH: Just a general point to the committee or the management board, really, is that I'd like to echo Rick Robins' point at the very beginning of this meeting. And I think it's very disappointing that these reports were not allowed to be and these surveys were not allowed to be or were not on the agenda for today.

They were originally on the agenda and I think it would have shed some important light not only for the management board but for the public that's in attendance here today that's interested in this issue.

And my request would be that you know whatever reviews need to be conducted on these reports, whether it's Davis, whether it's the Virginia Tech survey, or whether it's the third survey which I can't, which slips my mind, Smith, get completed as quickly as possible because we need to have that and the management board needs to have that.

The commission needs to have that information so it can be reviewed. And, frankly, the public needs to see that information as well. So is there a timeframe for when that is all going to happen?

CHAIRMAN FREEMAN: Marty, you weren't here in the very beginning but Vince O'Shea indicated that would be done in the next six weeks, six to eight weeks. Vince, would you like to comment?

MR. McHUGH: I have a further question, Mr. Chairman. Was there any discussion at the technical committee with respect to the timeline to extinction for, potential timeline to extinction for these birds, particularly the red knot, obviously?

MR. BREESE: That was mentioned but it wasn't analyzed or assessed.

CHAIRMAN FREEMAN: Go back to Vince so far as the timeline.

EXECUTIVE DIRECTOR O'SHEA: Yes, thanks, Mr. Chairman. Just to make sure what I personally have been involved in. This is the Davis paper, Davis, Berkson, which is a model of how to assess the population.

It is not a stock assessment. And it's merely a methodology, a proposed methodology. Under the ASMFC process such a model would eventually be peer reviewed but only after it had been reviewed by the stock assessment subcommittee and then passed on with a recommendation to the technical committee.

This particular model has gone to both of those groups with, frankly, a mixed review. The authors of that model had concerns about the review that they got and objected to the fact they didn't have an opportunity to present their model in person.

We have agreed to give them another chance with their model to do that. And I had committed to Dr. Berkson that we would endeavor to get that exercise done within the next six weeks, pending his availability as well as the members of the subcommittee.

Now the other two models that were mentioned here I was not part of any discussion involving that, Mr. Chairman. And I guess the last point I would make is as of Friday afternoon or Friday morning Dr. Berkson as well as Dr. Hallerman from the Horseshoe Crab Project at Virginia Tech were satisfied with us

sticking to the ASMFC process regarding their model. Thank you.

CHAIRMAN FREEMAN: Thanks, Vince. My desire, Marty, would be to have that same group, the stock assessment and the technical committee, review Dave Smith's paper as well. There is another one, the Sweka paper as well. So we'll have all three of those in front of us as soon as possible.

MR. McHUGH: If I may, I appreciate Vince's commitment to this and moving this forward. I just would say that you know this is an extremely important situation that we have here developing, especially as for next spring.

There is a lot of people's livelihoods depending on this. There is a potential you know situation with a bird going extinct, a species going extinct. And so in the future I know that processes are important to maintain. I have to manage processes all the time at the Division of Fish and Wildlife for a lot of different species, both inland and marine.

But in some situations it might be good to get the information out, qualify it appropriately, especially when you have such time constraints that we're facing right now with the potential problems that we're facing with these, both of these species. But thanks for moving this quickly.

CHAIRMAN FREEMAN: Any other questions of the report? Okay, Greg, also will give the report of the technical committee.

#### **HSC TECHNICAL COMMITTEE REPORT**

MR. BREESE: Thank you. The Horseshoe Crab Technical Committee met a week after the Shorebird Technical Committee in Norfolk and had the advantage of being able to have the authors present some information about the models and results that we've been discussing a little bit.

But, again, it was a quick review so I'll go through those. And then they responded as well to some of the questions that the board had posed informally. The first one that was presented to them was the surplus production model.

And the committee noted that it indicates a relatively low biomass and a relatively high fishing mortality but with the cautions that absolute biomass for mortality are not of strengths of that type of a model.

Also, the caution that the data sets do not cover the

full lifecycle of the crab. Data only went through 2003, unfortunately; and, thus, it missed the Addendum III affects that might have been included, and it's inability to make use of data sets that have zero values or that were in some conflict.

And so that it was felt that some of the outputs didn't seem to be realistic and the committee suggested that it would be well worthwhile to further evaluate and try some modifications of the model.

They also were able to hear the tagging and recapture work from U.S.G.S. in the bay which indicated relatively low harvest rates and an increase in juvenile classes. And the committee was pretty encouraged by the utility, apparent utility of that effort.

And that came up later in the discussion about the stock assessment and where we are with that. They also got to hear a report on the age structure model and found that it was an intriguing model for identifying factors that affect the population relatively speaking.

One interesting thing about that model was that it includes an attempt to model egg disturbance by successive waves of spawning horseshoe crabs and use that in the model to predict loss of eggs. But it did not include any modeling that showed losses due to wind and wave action.

Egg survival and first-year survival appeared to be the major effects on the population. And it certainly points to a worthwhile avenue of research into the survival of young age classes in the population in helping to understand the population recovery.

The committee was also given an update on the peer review process for the stock assessment that is ongoing, the catch survey analysis, as it's called. And that generated quite a bit of discussion as well.

Some of the key issues that were discussed was that the catch survey analysis depends upon the trawl survey and was originally designed to be a coast-wide survey but so far it has not expanded to coast-wide.

And, as you heard, vagaries of funding and weather can confound our ability to do that, even within the somewhat expanded area that has been tried so far. So there was some concern about that.

Another big concern was that we still don't have a really good way to identify new recruits to the

spawning population so how much fuzziness in identifying new recruits versus older spawners has to be considered.

So there was a desire by the committee to spend some time evaluating the strategy for a stock assessment and the trawl survey, now that we have a few years under our belt of doing this trawl survey or having it performed, to assess what it's really showing us about the population and how practical it may be, and also to look at the cost effectiveness of including as a supplement a tagging study similar to what was done by U.S.G.S. so far which looked very encouraging as a method of identifying population size estimates.

The committee had already, a subset of the committee had already looked at the spawning survey and trawl survey reports for 2004 so they didn't spend a lot of time on that other than getting a bit of a briefing on what had occurred at the June meeting for those who were not on that conference call.

However, the committee wants to meet as soon as the 2005 data for both of those surveys is available and wants to look at that data and use that in part as they assess for the trawl survey as they assess the stock assessment.

The committee was also given a brief update on the endangered species listing process. And then the committee went on to the questions that the board had posed. One was how sufficient the egg supply was for the horseshoe crab population.

Well, the committee wanted to point out that so far we haven't gotten to a consensus on what a target population is so that it is a little difficult and problematic to try to determine whether the egg supply is sufficient or not and that the egg surveys were not deemed as very effective in managing horseshoe crab stock so that they haven't really been looked at with that in mind.

However, there were some other surveys that came to the committee's attention that did seem to have some bearing on how well the horseshoe crab population is doing, one being the spawner survey which shows a stable or slightly declining population, another being Delaware's 30-foot trawl survey which doesn't show a trend since 1998, indicating stability.

The Delaware 16-foot trawl survey is posting young of year and less than 160 millimeter carapace record highs over the last two years and shows a significant increase since 1998 and the U.S.G.S. tag and

recapture survey seemed to show a broader age structure, indicating more recruits coming into the population at some point in time.

The benthic trawl survey which gave some mixed results, showing some declines in some age classes in some areas, not all statistically significant.

The final question the board had posed was related to harvest regulations and if there was indication that there was a need to change regulations. The committee only looked at the horseshoe crab issue and broke the coast into two areas, two regions: Delaware Bay and outside of Delaware Bay.

And within Delaware Bay there didn't seem to be any indication that further restrictions were needed to sustain or expand the current population, again recognizing that there is not a target population that has been identified and did want to also note that any increase in egg abundance would lag behind the increases that may be seen in juveniles due to the long maturation rate of the horseshoe crab.

Outside Delaware Bay there was a lot less data to go on but there didn't seem to be any indications that further restrictions were needed; however, there was a note that the committee wanted to point out that restrictions in the Delaware Bay in the past have and could in the future affect populations outside Delaware Bay by increasing harvest pressure on those populations to satisfy the need that is not being met if the restrictions are too low.

The last couple things that the committee did was look at the bait and biomedical landings and Brad already reported on those. And also they were, they learned about the bait cups that have been used to good effect in Massachusetts, particularly apparently with crabs that have been bled first and then brought into the fishery for bait.

Apparently after a crab is bled it's insides are a lot looser; it's egg masses are a lot looser and they will leave through a mesh bag but they will be retained in the cup more effectively.

And so from what they heard it sounded like for bled crabs, in particular, the bait cups were good and allowed the fishermen to use only a tenth of a crab per trap. And that's it except for questions.

CHAIRMAN FREEMAN: Okay, that's the technical committee report. Are there questions? Bill Adler and then Rick Robins.

MR. ADLER: Thank you, Mr. Chairman, two. First of all, do you have or does the technical committee have some type of a number as to the biomass of the horseshoe crab, some number? I know it's all computer generated stuff but I mean do you have some type of a number that you know how many horseshoe crabs are out there? That's my first question.

MR. BREESE: As has been mentioned previously in this meeting, there is a couple different models that try to get at that and there is the benthic trawl survey. But all of them more given an index rather than a biomass. And all of them have somewhat different values for that. The committee didn't arrive at an accepted or a consensus biomass for the horseshoe crab population.

MR. ADLER: All right, so we really don't have a number that we can judge the take by the quotas against. We know what the quotas, you know, what was taken which is not much but we can't judge that against the total biomass.

The other question is, the technical committee is not concerned about the overeating of the eggs by the birds that could put the horseshoe crab resource in trouble from having their eggs eaten. Obviously everybody tries to save eggs for the stock but you're not concerned about that at all. Right?

MR. BREESE: If I understand you, you're saying that the committee is not concerned that the birds are eating so many eggs that they're causing the horseshoe crab population to be reduced?

MR. ADLER: Or, we don't know if it's reduced but causing, could cause a problem of horseshoe crabs reproducing. We're not worried about that?

MR. BREESE: No, all indications are that the birds are feeding on eggs that would not mature or would not hatch because they're up at the surface of the sand.

MR. ADLER: Okay, thank you.

MR. BREESE: You're welcome.

CHAIRMAN FREEMAN: Okay, Rick.

MR. ROBINS: Thank you, Mr. Chairman. I would point out that there is a note in here under the second question whereby the committee pointed out that it should be noted an increased egg abundance

due to apparent increases in juveniles reaching breeding age would lag due to the slow maturation rate of horseshoe crabs.

That's something that this board has dealt with from Day 1. But having said that I think it's worth pointing out that the presentation that was made by Dave Smith when they did their mark recapture study and they were doing the dredging to capture the crabs for the tagging, they found substantial cohorts of eight, nine and ten year old crabs.

And they also found widespread abundance throughout the bay capturing crabs in 94 percent of all trawl tows. And I think overall that's a relatively positive picture.

Furthermore in the Sweka analysis that was presented, and all three of these models I think are really going to further our understanding very considerably about where we are in terms of this resource and how to manage it but the Sweka model I think contained a silver lining.

They found that if you model the population out under different harvesting scenarios, and one of those scenarios is deferred harvest, that is harvesting after the spawning season, there was a slight increase in the population by harvesting after the spawning season.

So, I saw that as a silver lining and possibly an opportunity. They also, as they modeled this out, pointed out that there was very little difference between a zero harvest level and the current management regime. Thank you.

CHAIRMAN FREEMAN: Thank you. Any other questions? Marty.

MR. McHUGH: Yes, this is a follow up to Mr. Adler's questions. I guess in response to his questions, are we achieving the fishery management plan goals for horseshoe crabs with respect to sustainable yield? Do we know that yet?

MR. BREESE: Well, as the committee pointed out, we're really unable to address that question without having a target population. And since that hasn't really been defined, I mean, is it this year's population?

Is it 2004? Is it 2001? You know that's really difficult and needs to be grappled with before you're really going to be able to talk about sustained yield.

MR. McHUGH: Thank you.

CHAIRMAN FREEMAN: Jack.

MR. JACK TRAVELSTEAD: Greg, I'd like to get a sense from you as to how important these papers are that several people have mentioned, that the chairman has promised to send out for peer review.

Are these very important documents that will provide a lot of new information to the technical committee? Or can you put on a relative scale how important it is that we see this information?

MR. BREESE: There are different ways of assessing the population. It depends upon how much you agree with the assumptions and how accurate that you think they are. And I think that's what we're being asked to do is judge that. So it's a little hard to answer your question simply. They could potentially be.

CHAIRMAN FREEMAN: Jack, just a quick footnote. These are the first time that we've seen some realistic population estimates. And as indicated they do vary considerably.

And we would hope that we would get direction from the technical, the stock assessment and the technical committee as so far as, you know, do we believe that some of these have more weight than others and we get an idea of what that population is. I think that's going to be extremely important. Jack.

MR. TRAVELSTEAD: Let me just follow up. Right now the technical committee is saying that in their best judgment, based on what they know now, further restrictions on horseshoe crab harvest are not necessary. So, what is the likelihood that that advice will change once these papers are peer reviewed and made available?

MR. BREESE: First you're talking about two different technical committees so I think the Shorebird Technical Committee was saying that there was more risk-averse action that could be taken under the assumption that harvest or man-induced loss is reducing the trajectory of the horseshoe crab population. And that would better ensure that the birds have the best chance to survive.

The Horseshoe Crab Technical Committee wasn't trying to address the bird population. And they were saying that from what they could see it seemed that the population could either maintain itself and/or

expand under the current harvest.

MR. TRAVELSTEAD: Okay, so let me make sure I've got the logic right. The shorebird group said if you assume that further restrictions will help horseshoe crabs, then that might, there might be something you need to do to be risk-averse.

But the Horseshoe Crab Technical Committee has now said that that assumption doesn't hold up, that you don't need further restrictions or further restrictions on horseshoe crab harvest will not benefit the horseshoe crab resource.

MR. BREESE: Well, don't forget, we're talking about two different species here so the shorebird committee was looking at the shorebird population.

MR. TRAVELSTEAD: Right, I understand.

MR. BREESE: It's going through an alarming decline so they're looking at what other risk-averse actions could be taken. The Horseshoe Crab Technical Committee is not trying to address the shorebird population trends. It's looking at what the horseshoe crab population trend is doing.

MR. TRAVELSTEAD: But if further restrictions will not increase substantially the population of horseshoe crabs, then there would be no benefit to the shorebirds.

MR. BREESE: I didn't get -- you maybe need to restate that but it sounds like what you're saying is that you want to know if the Horseshoe Crab Technical Committee felt that any further restrictions would have no effect on the horseshoe crab population's increase. And they weren't saying that.

At least I didn't get that out of the meeting. They were simply saying that under the existing regulations the population appeared to be able to maintain itself or expand. But they didn't address the rate of that expansion or if under additional measures you could get an increased expansion.

MR. TRAVELSTEAD: Okay, except that one of the papers that we're not going to talk about because it hasn't been peer reviewed suggests that the population would not grow very much even under a total moratorium, I think about 6 percent over a 15 year period.

MR. BREESE: The two papers, the surplus

production and the age structure model both had graphs that indicated a difference under no harvest versus harvest so the slope was a bit different under those. But that's getting to a very fine level of detail and the committee wasn't prepared to react or comment on that at this time.

CHAIRMAN FREEMAN: Louis and then Marty.

DR. LOUIS DANIEL: Yes, following up a little bit on where Jack was going, it appears that you've got one model that the technical committee suggests shouldn't be used for biological reference points, then you've got the Davis paper that says bad things are happening.

And you've got the Delaware Bay tagging study that suggests things are looking good, and the one that the technical committee suggested was probably the best population estimate, the one showing good signs.

Well, then we go, that's from the Horseshoe Crab Technical Committee. But then we get to the Shorebird Technical Committee and there is discussion here that some evidence suggests that a portion of the population may have bypassed the Delaware Bay due to a lack of food resources that year.

And that's, I mean that seems sort of squirrely in terms of saying that they absolutely did because there was a lack of food resources when the trends in the egg abundance surveys in New Jersey don't show a, you know, are pretty stable.

So that seems to contradict a little bit there. So I guess the concern that I have, what I'm trying to look at here is it seems that our management plan has worked and we've reduced from the RPLs of about 78.5 percent.

But yet I don't see any evidence that suggests that any further reduction will result in a recovery of the red knot population. And I guess that's what I'm looking for is some assurance that if we did do a moratorium or did take some kind of an action that we would have a measurable way to show how that action improved the red knot population. And I don't think we can do that at this point. And I'm just wondering if you believe we can or have any comment on that.

MR. BREESE: The committee has discussed a number of factors that could be affecting the shorebird population and they're not all in

Delaware Bay. And so I guess welcome to the world of wildlife monitoring and management.

It's not easy to say yes we've got a quick, simple answer and this will solve all our problems. There are other factors and it's unclear how much it will affect, any one of those factors is affecting it. And they may be working in concert as well. That's why the committee worded it the way they did.

CHAIRMAN FREEMAN: Marty.

MR. McHUGH: Yes, well, I would like to respond to both Jack and your comments across the way there, my colleague. First of all, I think the studies, as to the original question, I guess Jack's question was are these important. They're obviously important.

If we don't have a target population yet and we can't figure out whether the fishery's management plan is being met for sustainable yield that has to be accomplished. So, if those studies inform that task, then obviously they're important.

So you know getting them done, getting them peer reviewed before we can talk about them I think is very important and I appreciate, as I said, Vince's moving forward on that. In terms of the statement that was made across the way there, I can't see the name because my glasses don't reach that far, but — Louis. Sorry, Louis.

We, if there is a moratorium that is proposed, and we can discuss this when we talk about motions, any moratorium would have to be proposed with some sort of a requirement that an index be set, either based on crab numbers or egg densities so that if a moratorium was put into place the fishery could be reopened at some point based on a recovery of either crabs or crab eggs. So that would have to be a part of the proposal. And I think we'll be discussing that, hopefully, if we have time.

CHAIRMAN FREEMAN: Okay, any other questions? Jaime.

DR. JAIME GEIGER: Yes, Mr. Chairman. I'm somewhat surprised. I thought that we had some estimates of horseshoe crab population abundances. And I do note that we have some members of the stock assessment subcommittee here. Again I would just like to understand fully, do we or do we not have some estimates of horseshoe crab abundance? Thank you.

MR. BREESE: Yes, there are, within different surveys. And most of them are being used as indices rather than a total biomass of a coast-wide population.

DR. GEIGER: We do have various estimates with various variances associated with population estimates of horseshoe crabs?

MR. BREESE: Correct.

DR. GEIGER: Thank you.

CHAIRMAN FREEMAN: Other questions. All right, I just want to draw your attention to two letters. These were handed out to each of you. These are letters from members of Congress. There were several Delaware Congressmen who wrote to Pres Pate as chairman of the commission expressing concerns over this issue.

Also there were several other Congressional members, four I believe, from New Jersey who wrote of their concerns. And these were handed out. I just want to bring those to your attention. They were sent out sometime ago.

They had been responded to but I'm not sure all board members had received copies so I asked that these be handed out. What I'd like to do, Roy indicated he'd like to offer some motions. I will step down and ask Bob Beal to chair the meeting only because we don't get four members.

MR. ROBERT E. BEAL: All right, thank you, Mr. Chairman. As Bruce indicated before he stepped down from his chairmanship he indicated that Roy Miller has a motion ready so we'll go ahead and start with Roy to get that on the table and then we can have the members of the board discuss that motion.

MR. MILLER: Thank you, Bob. I'd like to thank everyone present today for their patience. It has been a long day. I will be brief. I'm prepared to offer a motion after considerable consultation with and support from our colleagues with the New Jersey Department of Environmental Protection, Division of Fish and Wildlife.

I'd like to offer the following as a precautionary, risk-averse measure to benefit shorebirds, horseshoe crab populations and other marine organisms that benefit from abundant horseshoe crab resources.

I'd like to make the following motion in recognition

that the only short-term action that this board has the power to take to benefit possibly declining shorebird populations is to restrict horseshoe crab harvest.

Therefore, I'm going to offer a motion and Mr. Acting Chairman if I could request should this motion fail I have a subsequent motion and should that fail I have a third motion. (Laughter) If I could ask for your indulgence in that regard.

MR. BEAL: Very persistent but we'll see how it goes. (Laughter)

MR. MILLER: If you're ready I'll read the motion. Moved that the ASMFC Horseshoe Crab Board direct the Horseshoe Crab Plan Development Team to develop an addendum that would establish a non-medical harvest moratorium on horseshoe crabs for the Mid-Atlantic area, defined as New York through Virginia, for a period of two years.

At the end of the two-year period this board would reconsider the available information concerning horseshoe crab and shorebird populations and decide whether to extend the moratorium or lift it.

MR. BEAL: Is there a second to the motion on the board? Mr. Lapointe.

MR. GEORGE LAPOINTE: Second.

MR. BEAL: Okay, Mr. Lapointe seconded it. Roy, do you have any other comments on the motion or Mr. Lapointe as the seconder?

MR. MILLER: I think considering the large amount of information we heard today I would prefer to answer any questions rather than offer a great deal of additional information at this late stage of the day.

MR. BEAL: Fair enough. Comments from the board. We'll just work around the table. Eric Smith.

MR. ERIC SMITH: Thank you. Just without comment on the merits of the motion, when we start an addendum process we usually set out a goal, we don't set out what the final management measure is.

And I just wonder if Roy has some thoughts on the alternatives that ought to be considered in the addendum. I mean this has one alternative and if that's what we decide to do then it's pretty simple. You go out to public hearing with one proposal and it's a thumbs-up, thumbs-down, not normally what

we do.

And I take you back to weakfish in August where people seemed to have their idea on what to do but then when we framed the proposal for the addendum we had some options, ways to accomplish the goal that we wanted to accomplish. That's a cautionary note on the way this is formed. It's not outright opposition but it does seem rather limiting. Thanks.

MR. BEAL: Thank you. Mr. Lapointe.

MR. LAPOINTE: I seconded the motion for a couple reasons. One, I think the addendum process gives us time to get those infamous or famous papers reviewed and so we'll have that information available to us before we make a final decision.

I don't share Eric's concern about the single issue because that's the issue that, you know, I mean rather than clouding up the addendum with other options it gets directly at the question before us and that is should there be a moratorium or not.

I mean the other option could be doing nothing. We could turn it down and then you get another option. So, I think this is a good way of moving forward.

MR. BEAL: Thank you. Mr. Colvin.

MR. GORDON C. COLVIN: I have some questions for the maker of the motion.

MR. BEAL: Go ahead.

MR. COLVIN: Roy, could you help me understand the basis for the geographic scope of your motion. What scientific information studies or advice that we've received suggests that the inclusion of the specific geographic region to the extent of Virginia through New York is necessary to meet the purposes of your motion as compared to the Delaware Bay states themselves?

MR. MILLER: If I may, Mr. Chairman.

MR. BEAL: Please.

MR. MILLER: I appreciate your question, Gordon. I would say that it's basically a consideration of the opportunity for harvest from adjacent jurisdictions to Delaware Bay.

In other words, if the moratorium were proposed only for the Delaware Bay jurisdictions then adjoining jurisdictions might have an opportunity to harvest

those same horseshoe crabs that contribute to the Delaware Bay population, thus, possibly negating the benefits of the proposed moratorium within Delaware Bay.

Now, we very roughly considered the possible extended range of crabs that contribute to the Delaware Bay population to go from New York to Virginia. But I would defer to perhaps the technical committee or others to critique the inclusion of those geographic boundaries.

MR. COLVIN: May I follow up, Mr. Chairman?

MR. BEAL: Please do.

MR. COLVIN: Well, I would just point out, for instance, and maybe this is a “share the pain” observation, but a substantial part of New York’s harvest comes from its north shore which is a water body shared with another state that is not part of the motion, and that another substantial part of the harvest comes from the eastern end of Long Island, from the Peconic Estuary and Block Island Sound.

And I find it more likely that horseshoe crab resources in that area would be shared among the Southern New England states and New York than with the Mid-Atlantic states and New York. So, I have some difficulty in the absence of, frankly, clear scientific evidence that supports the motion to — and I’m only speaking at the northern end of the motion’s extent.

I suspect similar questions could be raised at the southern end. If we don’t have scientific information that backs up that assumption, I’m wondering why we aren’t looking for a coast-wide moratorium as opposed to a five-state moratorium.

MR. BEAL: Mr. King.

MR. KING: Yes, thank you, Mr. Chairman. Well, Maryland is certainly interested in the plight of the red knots. And we would certainly consider some additional restrictions. We would lean more towards preserving the horseshoe crab during the spawning season for the red knots and for the migratory shorebirds.

I’ve heard nothing previous and nothing today that in my mind would warrant a total moratorium. My problem I have with this motion is that you could get to the end of the addendum process and it would be a pass-fail and you could end up with no incremental

improvement so for that reason I don’t think I can support this motion.

MR. BEAL: Thank you. Mr. Travelstead.

MR. TRAVELSTEAD: I think the last two speakers hit the nail on the head and certainly Virginia is in the same position as New York with respect to this motion. And so we cannot support it.

But I think Howard brings up an excellent point, that if we proceed with this at the end of the process we may end up with nothing. And you know we really have not heard any scientific support today in support of this motion.

Who knows what the yet to be peer reviewed papers will tell us. But I think offering any motion today is really premature. You know I think we would be much better off and have a much clearer picture if we would wait until those documents are peer reviewed and then sit down at the table and begin to have some serious discussions based on that information.

And that’s not to say that Virginia will not support some additional measures on horseshoe crabs but certainly we cannot support a total moratorium at this point.

MR. BEAL: I’m just going to keep moving around the table. Bill Adler.

MR. ADLER: Thank you, Mr. Chairman. First of all it’s not on the agenda here that we were going to discuss some type of an addendum. But I heard absolutely nothing in the reports today that would call for this type of an action.

I was listening to the best available science, the technical committee saying no need, the idea of states are able to do something on their own without the ASMFC having to do an addendum, anyway.

But I didn’t hear any legitimate reason for doing something like a moratorium or even more restrictions when we’re dealing with such a small amount that would be saved and that the fishing quotas have already cut, if you can look at the technical reports here, they’ve cut it 78 percent, something like that.

And we’re going to try to go for 100 when it was already said that it won’t really do anything in the big picture at all. And if the 78 percent reduction or whatever that number is close to that, reduction in the take of the horseshoe crab didn’t help the red knots,

another 3-6-10 percent isn't going to help them either.

So, I am disappointed that we didn't have this on the agenda to begin with. I can't support this addendum at all at this time. I think that Jack's point of getting some more information because what I heard today there is no reason for this at all. But, I'm willing to have people come back with some more information that I can evaluate. Thank you.

MR. BEAL: Thank you, moving around, Erling Berg, did you have a comment?

MR. BERG: Thank you, Mr. Chairman. I see one problem here with the restricting this to just the Mid-Atlantic, mainly the Delaware Bay area. The fishermen that use these crabs for bait are still going to need them.

All this is going to do is just shift the effort into other areas that are not within that New York to Virginia area. And I'm afraid it's going to increase the cost of bait substantially for these people and it just doesn't seem fair to do it that way. Thank you.

MR. BEAL: Thank you. Moving around, Marty McHugh.

MR. McHUGH: I agree with Jack and Howard. I think it would be a good idea if we could wait to go through these studies that have yet been brought to full light in front of this management board and the commission as a whole.

However, we're facing a spring, upcoming spring, where we have to make a decision at least in the Delaware Bay about what we're going to do but hopefully coast-wide. And I hope this management board realizes the situation that we're in.

It's not lightly that a commissioner of a department of environmental protection sends his emissary down here to request something like a moratorium, a consideration of a moratorium. And you know I'm not sure if this commission has seen it yet but there is a lot of information on the decline of the red knot.

I know you've been wrestling with this issue for years. The scientists that have been involved in this and they have been from not just the United States but across the world, and renowned, I might add, have been pursuing the science on the red knots and the connection to horseshoe crabs for years.

I would say that the science is extensive. It's

rigorous. It's supported by extensive peer review. It follows the birds all the way from South America all the way to the Arctic through Delaware Bay.

It reviews their movements throughout Delaware Bay, all the way down to what they poop, what is in their waste to figure out what they're eating. And this is an international group of renowned scientists that we have working on this.

And, by the way, I categorically deny that any of my staff, whether it be in the marine fisheries side or the endangered species side, is either withholding information or manipulating information as was alleged here today.

I have great confidence in the ability of all of my staff at the division of fish and wildlife and I categorically deny any of those allegations. They are professionals and they are working hard to try to figure out what the situation is.

I will also refer to a letter which if it hasn't been handed out to you it's something that has been sent to the chairman of this Horseshoe Crab Management Board, Bruce Freeman, which is a letter that was written November 1<sup>st</sup> and by the scientists that have been involved in these studies, including my staff but also Humphrey Sitters, Alan Baker, Richard Morrison, Daniel Hernandez, Brian Harrington, Mark Peck, Patricia Gonzales, Philip Atkinson, Nigel Clark, Clive Mint and Karen Bennett from Delaware and also Kevin Kalasz from Delaware Division of Fish and Wildlife.

These are the scientists that represent the international weighting group, the Royal Ontario Museum, the Canadian Wildlife Service, Richard Stockton College, Ontario Royal Ontario Museum, British Trust for Ornithology, the Victoria Wader Study Group and of course Delaware and New Jersey.

And I'm not going to read the whole letter because it's late in the day. But I will say, I will paraphrase a couple of parts of the letter and read one part of the letter if I may, Mr. Chairman. And this is important so I'd appreciate your courtesy on this.

"We write as a group of biologists that have just completed a status review of the Rufus subspecies of red knot commissioned by the U.S. Fish and Wildlife Service arising from concern about the precarious state of its population."

They go on to document what they have found

throughout South America and in through Delaware Bay. They do say that since 1990 there has been a 20-fold decline in the density of eggs available to shorebirds and this insufficiency of eggs is jeopardizing the birds' ability to gain adequate resources for their flight and successful breeding.

I will commend you this letter and that everyone should have this on this management board. But I want to read the last part of the letter. "We support current demographic studies instigated by the ASMFC to determine what level of harvest is sustainable and consistent with the twin aims of restoring a healthy crab population and sufficient eggs for shorebirds.

"However, as these studies are not yet conclusive, it is our view that the precautionary principles should be applied to ensure that horseshoe crab population recovers as rapidly as possible.

"The precautionary principle would indicate that the harvest should be minimized or suspended altogether. It is emphasized that the views expressed in this letter are those of the signatories and they do not reflect" They're saying they do not reflect necessarily the views of their employers.

So I'm giving you an out, Roy, and Pat Emory at Delaware. But they do reflect the view of this employer here. I, as you know, I am the director of the division of fish and wildlife. My charge as a director, as some of you are also charged with, is to manage fish and wildlife, both inland and marine fisheries.

My charge is to protect and manage those species first and then provide access either through fishing, hunting or watching or whatever. So in considering all of the information that we've had, I have no other choice at this point but then to at least try to push the most conservative method to protect these birds and to try to maintain some sort of fishery in the future for horseshoe crab harvesters and for conchers and eelers.

The state of Delaware has worked very hard with us to come up with a bay-wide solution. And we have gone out and first to come up with a bay-wide approach that we have in place right now.

Unfortunately, based on the latest data that we have from Tierra del Fuego this spring, it's not working. And potentially we have information, potentially, that these birds are on an extinction path in five years.

I have no choice but to act on this information. That is why the commissioner of environmental protect, Brad Campbell, has sent that letter to you. That is why these folks who have been spending many, many years on this project have sent this letter to you.

And I think that I would urge everyone to consider this information. If you haven't seen it, you need to see it. And I support this motion. I appreciate Delaware making it. Thank you.

MR. BEAL: Thank you, Marty. I've got a list of four more speakers here. After those four speakers — and I'll read them, read my list in a minute — we'll go into alternating pro and con for this motion and then we'll, you know, see how much more debate we need on this motion. The list that I have right now in this order will be Ed Goldman, Gordon Colvin, Pat Augustine and then John Nelson. Ed.

MR. EDWARD GOLDMAN: Thank you, Mr. Chairman. Marty basically said some of what I wanted to say so I'll try and be quick. Time is of the essence. I would love to wait but I'm not sure we can wait. And we talked about starting.

I think we need to start an addendum process now. And if it doesn't include a full moratorium I think we need to at least look at some other options because we don't have the luxury of time in this issue because there is a problem with the birds. Thank you.

MR. BEAL: Mr. Colvin.

MR. COLVIN: Thank you. A couple of things. First, we're prepared I think our department is prepared to fully support application of the judgment that our sister agencies in New Jersey and Delaware have made with respect to the need to act now in light of the status of red knot.

And even in advance of further development of the scientific advice as we've discussed. And I appreciate their perception on that and we share their concern and are willing to do so.

The issue isn't whether or not we support going ahead now. The issue is this geographic boundary, the question that I raised before. And I thank Erling Berg for bringing up the point that he did because it reminds me of a little bit of history.

We had the same issue arise in the implementation of our last addendum when the current Delaware Bay caps were lowered. And the same concerns were

expressed about the potential for Delaware Bay horseshoe crab stock, if you will, to be harvested and landed in the region outside of the bay.

You know certainly New York acted at that time and I believe other states in the region acted to voluntarily reduce and we've maintained a reduction of over 50 percent in our cap since then in part to assure that that doesn't happen.

And we've also paid close attention to the origin of our landings. And we do not believe that the crabs that are being landed are likely to be of Delaware Bay origin. And I think that addresses the point that Roy raised in response to my earlier question. And we're certainly prepared to maintain that level of vigilance.

We are going to maintain our current cap. We are not going back to the allowable harvest level in the plan, despite the pressures that might arise in the event of further restrictions in Delaware Bay.

In addition, New York is preparing changes to its regulations that will enable us to institute place-based restrictions on harvest in the event that we are able to document any interactions between the horseshoe crab harvest and migrating shorebirds, including red knots and other species whose abundance is declining.

That's where we are. That's where we intend to go. And we think that that is sufficient. Let me offer a suggestion and one that should this motion pass might help to address the issue of the other states in the Mid-Atlantic region and perhaps even in an expanded region of potential Delaware Bay crab interest and that is that an option could be added to such an addendum, should such an addendum go forward, to create essentially a two-harvest zone or a two-zone area within the addendum, one that focuses on the core area of Delaware Bay and another that focuses on the balance of the region in which horseshoe crabs or Delaware Bay origin may be distributed and adopts appropriate management strategies in each of those two areas to reduce harvest as close to zero as possible of Delaware Bay origin crabs. Thank you.

MR. BEAL: Thank you. Mr. Augustine, I think you passed on your opportunity? Mr. Nelson.

MR. NELSON: Well, thank you, Mr. Chairman. I was trying to see if there was something that could be dealt with in a perhaps more timely fashion based on the sense of urgency by our sister

states that have brought forth this appeal.

And Gordon probably addressed a way of dealing with it. My sense is that an addendum certainly is going to take some time to do. And you know as you say you go through the public process and you never know really, quite frankly, what is going to happen.

And if the intent is to deal with the Delaware Bay area, I thought my sense was that the two states, Delaware and New Jersey, probably could control any harvest or prohibit any harvest in those areas.

If I'm wrong on that I'd certainly stand to be corrected. But it would seem to me that they could unilaterally take that action. They're not restricted by the plan, the current plan to not do that.

And therefore, you're looking at probably well over 200,000 crabs that would not be taken from that area based on, I'm looking at their quotas. And I would think that that would be an immediate approach to dealing with their problem.

And then as we flesh out any addendum, if we are moving forward with an addendum, additional activity or issues could be dealt with for the wider geographic area. So whether or not this moves ahead I would suggest that Delaware and New Jersey look at any prohibition on harvest in that area as unilateral actions which they are capable of doing right now.

MR. BEAL: All right, thank you, Mr. Nelson. I've seen a couple hands pop up around the table and we're going to, as I mentioned earlier we're going to alternate speakers for the motion; speakers against the motion.

Then we'll at some point determine that any more debate probably won't be productive or change anyone's mind so we'll cut it off and vote on the motion and we'll go to the audience before that. The first hand I saw was Rick Robins.

MR. ROBINS: Thank you very much, Mr. Chairman. I haven't heard anything today that would indicate that a moratorium would result in any meaningful benefits, either to the horseshoe crab population or to shorebirds.

Specifically I think the question of the day is one of horseshoe crab population dynamics. It's one of harvest mortality, rates of removal, rates of exploitation. At what level do you perceive those to be? It's also a question of risk tolerance.

This board has historically demonstrated a very low risk tolerance and I think it is to be commended for that. This is a multi-user resource. The risk tolerances should be low.

Having said that as far as being risk-averse we got the landings today and they show a decrease almost on the scale of an order of magnitude, from 3 million down to 645,000 since the reference period landings. That's a staggering reduction in landings.

We already have in place an ultraconservative plan. I think you've heard through the technical committee findings that there is evidence of upstream production and productivity in recruitment to the stock that is around the corner for the horseshoe crab resource.

And I think that's evidence that the plan that's in place now is already sufficiently risk averse and helping. Mortality has been estimated at 3 percent by Dave Smith's work. Perhaps you don't agree with three. Maybe it's four or five but it's in that ballpark. And that's far lower than natural stranding mortality.

That was referenced in the original ASMFC plan in 1998. There was an estimate of natural mortality of 10 percent during spawning. So we are now on an order of harvesting that's that low.

And it creates so much in terms of benefits for the different user groups that it seems to me it would be inappropriate to take this type of what I perceive to be a political remedy that is not supported by the best available science.

I think we need a scientific solution. And I think, again, if you look at the Sweka analysis there are some alternatives out there that would be viable to help provide some remedy for the shorebirds. Thank you, Mr. Chairman.

MR. BEAL: Thank you, Rick. I would characterize your comments as against the motion. Roy, you had your hand up. Will you be speaking in favor?

MR. MILLER: Mr. Chairman, I'd like to withdraw the motion, if I may.

MR. BEAL: Yes.

MR. MILLER: Instead I would like to request that staff put up the third motion that I had previously outlined and offer it as a substitute for the withdrawn motion, if I may.

MR. BEAL: Mr. Lapointe, are you comfortable with withdrawing this motion as seconder?

MR. LAPOINTE: Sure.

MR. BEAL: All right, he says, "Sure." (Laughter) Very willing.

MR. MILLER: And, Mr. Chairman, if I may I'll briefly give you a little rationale.

MR. BEAL: Hang on one minute, Roy. Vince wanted to make a comment, please.

EXECUTIVE DIRECTOR O'SHEA: I think that you want to be clear here. You're withdrawing your motion and you're now going to make a new motion.

MR. MILLER: That is correct.

EXECUTIVE DIRECTOR O'SHEA: You're not proposing a substitute which would be proposing to take a vote, et cetera.

MR. MILLER: I'm withdrawing.

EXECUTIVE DIRECTOR O'SHEA: It's as if the original motion did not exist.

MR. MILLER: Exactly.

EXECUTIVE DIRECTOR O'SHEA: That's your intent.

MR. MILLER: Yes, sir.

EXECUTIVE DIRECTOR O'SHEA: Thank you, Mr. Chairman.

MR. BEAL: Okay, Roy, are you ready to read your motion?

MR. MILLER: Yes, I am.

MR. BEAL: All right, thank you.

MR. MILLER: And the reason I'm doing this, it's my perception that the original motion was unlikely to pass; therefore, I would like to offer this motion. **Moved that the ASMFC Horseshoe Crab Board direct the Horseshoe Crab Plan Development Team to prepare an addendum that would include the following options:**

**1. a two-year moratorium on harvest of horseshoe crabs from the states of New Jersey and Delaware with an exemption for existing biomedical needs; ideally such a moratorium could be coupled with some form of compensation package for affected commercial users of this resource; any biomedical harvest that cannot be returned alive to the general area of capture shall be made available to the bait industry;**

**Option 2, a harvest closure on horseshoe crabs during the period January 1 through June 7<sup>th</sup>; beginning June 8<sup>th</sup> the harvest would be subject to existing quotas; the sex ratio of harvested horseshoe crabs shall be at least two males for each female; the harvest closure period shall apply to the following areas: Sub-Option 1 under Option 2, Delaware and New Jersey; Sub-Option 2, the states of Delaware, New Jersey, Maryland and Virginia; Sub-Option 3, all states from New York through North Carolina;**

**Option 3, a coast-wide moratorium on harvest of horseshoe crab from beaches; all existing limits shall apply; Option 4, some combination of Options 2 and 3 above; and then, finally, Option 5 would be status quo.**

MR. BEAL: Thank you. Is there a second to that motion?

MR. McHUGH: New Jersey seconds.

MR. BEAL: Marty McHugh seconded the motion. Discussion on this motion. You're ready to go though, Joe. You don't need that? Okay. Ritchie, did you have your hand up? Ritchie White, please.

MR. WHITE: A question for Roy. Where would the compensation come from?

MR. MILLER: Honestly, that has not been fleshed out yet, Ritchie. That's why I put that in there as a non-compliance item. I said, used the term, "could be coupled with some form of compensation."

MR. McHUGH: Mr. Chairman.

MR. BEAL: Mr. McHugh.

MR. McHUGH: I'd like to respond to that, too, if I could, and help out my colleague from Delaware. One of the places we might go to look would be the LAL industry. We hear, we heard a little report today from the biomedical industry.

Obviously, the crab bleeding process is critical to public health. There are some larger industries that are involved in that manufacturing of LAL up the line. They are paying a very small price for the use of these crabs, some of which are not making it back to the ecosystem.

And I would propose that we urge the manufacturers and the drug companies that are involved in this who are probably reaping some profits on a public resource that is important not only to the public health but to the harvesters that are represented here today and to the species themselves, especially the red knot and the rest of the shorebirds, have them come to the table and urge them to help us with a compensation package here. And I thought that might be, and we had discussion on exploring that with them.

MR. BEAL: We have a technical issue with the length of Roy's motion but we're trying to get as much of that on the screen as we can so that people know what they're dealing with. Mr. Lapointe.

MR. LAPOINTE: Thank you, Mr. Chairman. I support the motion but I do not support the discussion about compensation. And I'm going to make a motion to amend to strike the sentence that starts with "ideally". I think the idea of discussing compensation is great for the affected states but to build a precedent of that into an ASMFC action I think is the wrong place for this commission to be.

So it would be to **strike that sentence that starts, the sentence that's -- I can't even see it -- "Ideally such a moratorium could be coupled with some form of compensation package for the affected commercial users of this resource."**

MR. BEAL: George, before I ask for a second let me ask Roy and Marty if they're comfortable removing that. And if they're not then we'll go the route of a motion.

MR. LAPOINTE: That's fine.

MR. MILLER: I'll go first, Marty, if that's okay. We would be comfortable in removing that particular wording from the motion.

MR. BEAL: Okay, and the seconder, Marty McHugh.

MR. McHUGH: We would be also comfortable in removing that. But let it be known that we will explore all options possible for

compensating impacted harvesters.

MR. BEAL: But you are comfortable taking it out.

MR. McHUGH: Right.

MR. BEAL: Fair enough. So that sentence will be removed and then the motion is modified.

MR. LAPOINTE: Thank you.

MR. BEAL: Rick Robins.

MR. ROBINS: Thank you, Mr. Chairman. It seems to me that the states of Delaware and New Jersey if they wanted to pursue a moratorium on their harvest are free to do so. The plan doesn't restrict them from adopting more restrictive measures than what is already in place under the addendum.

I think that we basically have two options before us today in terms of the possible moratorium or the delayed harvest. And a delayed harvest would result in a very small improvement in the stock according to simulation modeling.

Similarly, a moratorium would result in a very small benefit to the stock. So you've got two options, both of which if you map them out in terms of cost benefit have very relatively low benefits and that's unfortunate but it's just what we're dealing with in terms of this resource and it's production capabilities.

And at the same time one of the options has relatively acceptable social costs. The other has very high economic costs. You heard earlier from one of the speakers that the industry is an \$11 to \$15 million a year industry.

And it seems to me that if you have two alternatives, both of which offer similar ecological benefits and one of them carries with it a tremendously high social cost, it wouldn't be appropriate to move forward. I think specifically it runs afoul of the standards.

The ASMFC in Section 6 Standards points out that the ASMFC recognizes an effective fishery management plan must be carefully designed in order to fully reflect the varying values and other considerations that are important to the various interest groups involved in coastal fisheries.

Social and economic impacts and benefits must be taken into account. That's not obviously the most important thing today. The most important thing is

conservation. But having said that, as you look at these two options, one of them is clearly favorable over the other. And I think specifically the option to have a moratorium is totally inconsistent with the scientific findings that we've heard today.

And whereas our plans have to be consistent with the best available science, I think it's fundamentally incongruent with the purpose of the plan and I think it ought to be taken out. And, Mr. Chairman, I would offer a motion to amend to delete Item 1.

MR. BEAL: Is there a second to the motion to delete Item 1?

MR. ADLER: I'll second.

MR. BEAL: Mr. Adler. All right, now we're going to discuss the motion to amend which will remove Item 1 from the previous motion. Any comments on this motion? Any comments on this motion? Mr. McHugh.

MR. McHUGH: Thank you, Mr. Chairman. Before I comment on the motion I do want to respond to and I guess this is in response to the motion as well. Delaware and New Jersey can enact its own restrictions and has in the past.

And you know our fishermen in Delaware Bay, on both sides of the bay, have suffered the impacts of that and I would argue disproportionately to the coast. And so that is why we are also here today proposing jointly with Delaware these motions.

I would also say that it spurred on this, our actions in Delaware Bay, treating it as an ecosystem, two states working together, has spurred on this commission to take on this issue and try to address it. So I think that's good. And we will be looking at our own options within Delaware Bay, no matter what this commission you know moves forward on or not.

I also would argue that unfortunately in response to the question on this motion and the others that we don't have the information to inform a vote on this is because the process is too slow to keep up with the need for us to deal with this on a more expedited basis.

And it's unfortunate that those papers were not presented here today. I think they would have informed a lot of the board members around this table.

We are proposing these motions on the best available

science that we have in our possession, whether it be the work that I referred to and the assessment that is being submitted to the U.S. Fish and Wildlife Service on the status of the red knot. And I would oppose this motion to take out the two-year moratorium.

MR. BEAL: Okay, we're at the time where we should be wrapping up this meeting and I don't get the sense that we're there (Laughter) so I think we're going to have to limit our comments to be brief, be to the point. Let's try to move this forward quickly. I'll work my way around the table starting with Vince O'Shea, please.

EXECUTIVE DIRECTOR O'SHEA: Yes, thanks, Mr. Chairman. I had one question I meant to get in here before motions started flying but the motion, the main motion that's up there, could we get a read from staff about whether or not those actions are allowed within the addendum process within the management plan as sort of a first issue to look at, just to validate, please.

MR. BEAL: Vince, is it okay if while we're looking that up we go to some other comments and we'll come back to that? Dr. Pierce, I think you had your hand up.

DR. DAVID PIERCE: Yes, I appreciate Marty's concerns. He has done an excellent job presenting his case regarding the need to move forward with some rather aggressive actions within the Delaware Bay area.

For that reason I would oppose striking Number 1. However, and another reason why I would oppose striking Number 1 is that by doing so and keeping Number 3 in I could easily see us ending up with a coast-wide moratorium as an option instead of focusing on the area that needs the attention, it seems, and that's the Delaware Bay area.

So if Number 1 is taken out then I'm going to have to make a motion afterwards to take out Number 3 as well because that will just put the spotlight on the coast, the whole coast and not where it belongs.

And one reason why I would certainly not support a coast-wide moratorium is that at least in Massachusetts where the landings have been getting lower all the time through regulation and other reasons I would be very hesitant to tell the industry in Massachusetts despite their best efforts to try to come up with a way to reduce the dependency on horseshoe crabs by coming up with the bait bags, the artificial bait, that we're going to stop the fishery entirely.

To me that would be a disservice to the industry that is working very hard to deal with these very important questions about horseshoe crab harvest and, of course, the reliance of birds on the horseshoe crab eggs. So, I would oppose this motion to amend.

MR. BEAL: All right, thank you. Folks around the table are going to have to probably talk pretty loud. I think there is another meeting going on in the back room so the audience is going to get tuned out pretty quick here. Mark Gibson has had his hand up for quite a while.

DR. MARK GIBSON: Thanks. I oppose the motion to amend to remove Item 1. I think the states of Delaware and New Jersey have made a good faith effort here to back away from the very rigid and geographically broad motion that was going to fail, the initial one.

Like Martin McHugh I am administrator at a fish and wildlife agency that has broader responsibilities than just marine fisheries. And when those sort of broader issues come to the fore I have to think more broadly. And I'm prepared to support the original motion, un-amended.

MR. BEAL: Thank you. Mr. Colvin had his hand up and then Mr. Travelstead.

MR. COLVIN: Mark said it.

MR. BEAL: Pardon me.

MR. COLVIN: Mark said it.

MR. BEAL: Great. Mr. Travelstead.

MR. TRAVELSTEAD: Well, I'd like to speak in support of the motion to amend. I think it's abundantly clear that New Jersey and Delaware are going to take the action that they think they need to take.

And the focus of the addendum should be on those measures that have more of a coast-wide nature. By including Number 1 you're merely diluting the effect of the others. It's clear that Items 2 through 5, or 2 through 4, are risk averse measures. They're important. And I think that's where the focus of an addendum should be.

By the time we get this thing out to public hearing New Jersey and Delaware will have acted, I would assume. As excited as they are about doing this I

would guess that those measures would already be in place.

So, you know, why muddy the waters? Let's clean up the addendum so that it focuses public comment on expanding beyond Delaware and New Jersey.

MR. BEAL: Robert Boyles.

MR. ROBERT H. BOYLES, JR.: Yes, sir, thank you, Mr. Chairman. A question for clarification to the makers of the motion, is it their intention that the Option 3 would be bait fishery as well as biomedical harvest?

MR. BEAL: Mr. Miller.

MR. MILLER: No, again, biomedical harvest would be exempt.

MR. BEAL: Okay, thank you. Any other comments on the motion to amend from around the table? All right, seeing none — and we need to respond to Vince's question from earlier regarding the adaptive management content of the Horseshoe Crab Management Plan.

Brad and I have looked through the plan and it does appear that harvest restrictions are, can be modified under the adaptive management process through an addendum. Roy Miller.

MR. MILLER: I have just one final comment before we vote and that is the reason we urged inclusion of Option 1 within this particular motion is, just as I stated a few years ago when we discussed the now instituted restrictions on horseshoe crab harvest in the Delaware Bay region, I stated at that time that ASMFC approval would lend considerable support to our efforts should we have to undergo any legal challenges.

Let me reiterate that same sentiment. ASMFC support would again strengthen any actions taken by Delaware and New Jersey unilaterally on their own. Thank you.

MR. BEAL: Thank you, Roy. Are the folks around the table ready to vote on this motion? All right, then we'll have a 30-second caucus. Anyone need to continue their caucus? All right, let's go ahead and vote.

Those in favor of the motion to amend, please raise your right hand; those in favor of the motion to amend, please raise your right hand; opposed, like

sign; null votes; one null vote; any abstentions. All right, back to the main motion. The motion fails for lack of a majority. Back to the main motion. Mr. Duren.

MR. JOHN DUREN: Regarding the main motion, Mr. Chairman, I can appreciate this issue is very sensitive, particularly to the Delaware Region. And I care a lot about birds and have for many years.

I have personally identified in the field more than 80 percent of the birds known to North America. I also care a lot about marine creatures. I know more about birds than I do about marine creatures, at least I can identify them better.

I care a lot about science and the scientific process. And I think that science in haste is usually not, doesn't yield a good product. I care a lot about our process. My state, Georgia, has no significant harvest of horseshoe crabs and we would, this action proposed would have no affect on us except that possibly it might displace some effort to our region.

But from everything we have heard today we have no justification for taking any action regarding an amendment to the fishery management plan. I see the only logical call we can make is for a request of the technical committee to answer some of these important questions, like what should be the target level and for that reason I move we table this amendment.

MR. BEAL: Table the motion?

MR. DUREN: Yes, I move we table the main motion.

MR. TRAVELSTEAD: Second.

MR. BEAL: All right, we have a motion to table and a second. Vince. I'm sorry, Jack Travelstead seconded that motion.

EXECUTIVE DIRECTOR O'SHEA: Okay, terminology I think is important here. The motion to table is for the duration of the meeting which is not debatable which would mean that the motion would come up again within the meeting.

This meeting is scheduled to end 15 minutes ago or 10 minutes ago. If the intent is to postpone action on this to a subsequent date then the issue is, is the intent to postpone it to a specific date or is the intent to postpone it indefinitely?

And if the intent is to kill this motion by postponing it indefinitely that would be the effect. If it is to postpone it until, say, perhaps the February meeting or until after the stock assessment information comes through, that would be the other thing that would need to be articulated.

MR. DUREN: Thank you, Vince. And I appreciate that clarification. My intent was not to kill it indefinitely. I think it's a very important issue that deserves our consideration when we have more information, so if I may I would amend the motion to postpone it until our February meeting.

MR. BEAL: All right, the motion is to postpone the main motion until February 2006. Mr. Travelstead, are you still comfortable being the seconder for that motion? Mr. Travelstead has seconded that motion.

This motion is only, the only part of this motion that is debatable is the time of when it will be reconsidered by this management board. Any comment on the February 2006 portion of this motion? Jaime Geiger.

DR. GEIGER: Yes, Mr. Chairman. Can you determine or answer for me what additional information we can expect to receive, either from the technical committee or from the Shorebird Technical Committee by or before the February meeting? Thank you.

MR. BEAL: As Vince mentioned, we're going to try to work some of these papers, the Davis Berkson paper, in particular, through the stock assessment committee and the technical committee.

This paper will not have gone through a formal external ASMFC peer review by the February meeting but it will have gone through some of the, I mean it will have gone through our technical process. Mr. Lapointe.

MR. LAPOINTE: The postponement until February might as well be a postponement until August or next November meeting because if you want, I think the intent of the motion was to have something in place for next spring.

And if we do an addendum in, we consider the addendum in February and then go out we'll miss that season. I mean the other alternative we have is emergency action under the ISFMP charter.

But folks should be aware that starting an addendum

in February won't address the issue for next spring. And I think that was stated as one of the critical timelines.

MR. BEAL: Thank you. Any other comment on the timing of this postponement? Mr. Travelstead.

MR. TRAVELSTEAD: Well, just again to point out that, you know, New Jersey and Delaware can proceed tomorrow morning to do whatever they think they need to do. So there is still action that can be taken, even if we table to February, and any other state for that matter.

MR. BEAL: Marty, are you going to comment on the timing of the postponement, not the content of or the affect of the postponement?

MR. MCHUGH: The timing and the impact of the postponement. Mr. Lapointe's point is well taken. And I oppose the motion. We will be taking our own actions, as Mr. Travelstead has said, as soon as we can together in Delaware Bay with Delaware. And I would urge John from Georgia that we care about science to and you should review the science on this. Take the time to do it. We oppose the motion.

MR. BEAL: All right, I think the debate on this has degraded past the timing issue. Do we need, do states need to caucus on this motion? All right, seeing no need to caucus those in favor of the motion to postpone until February please raise your right hand.

Okay, there is a caucus. We'll wait 20 seconds. Okay, folks are ready. Those in favor of the motion to postpone please raise your right hand; those opposed to the motion, like sign; null votes; abstentions. The motion fails.

Back to the main motion again. Is there any need for any further debate on the main motion? I think we have had pretty extensive debate on this. Dr. Pierce.

DR. PIERCE: I would move to amend the motion to strike Numbers 3 and Number 4. Number 3 is the coast-wide moratorium. I have already indicated that I don't see the merits of that. I don't believe a convincing case has been made for a coast-wide moratorium.

MR. BEAL: Let's see if we get a second on that and then we can talk, David.

MR. WHITE: Second.

MR. BEAL: Ritchie White seconds that motion.

DR. PIERCE: All right, very quickly. It has been seconded so it's not needed.

MR. BEAL: Yes, hang on one second. Vince.

EXECUTIVE DIRECTOR O'SHEA: Yes, just give us, could we just get a second. I mean, can we get us the time to get the motion up on the board so we have it correctly. Thank you.

DR. PIERCE: That's it. Move to amend the motion to strike Number 2, and Number 3, Number 3 obviously says a combination. Number 4. I'm sorry, Number 3 and 4. Did I say 2 and 3? If I did I apologize. It's 3 and 4. Number 4 is a combination of 2 and 3 so if we strike 3 then 4 is not needed.

And, again, a coast-wide moratorium really isn't defensible. The problem is, as very well described by Marty and others, in the Delaware Bay area and the adjacent states. So that is the reason for my motion to amend, Mr. Chairman.

MR. BEAL: Thank you. Any other comment on the motion to amend? All right, seeing none. Rick Robins.

MR. ROBINS: Thank you very much, Mr. Chairman. I will be brief. I think just to be clear this is a moratorium. Item 3 is a moratorium on the harvest of crabs from beaches so it's basically not a coast-wide moratorium on harvesting, obviously, but just on hand harvesting, to be clear.

And I don't know if there would be any support for making that and amending that to be in Delaware and New Jersey only but that's just a thought.

MR. BEAL: Gordon Colvin.

MR. COLVIN: The difficulty I'm having now, because we seem to be rushing, is that I'm not sure that our deliberations are focusing on what we started with here. And what is happening is that this motion is exposing a flaw in the logic of the main motion as compared to the purposes of the maker, and rightly so. But the difficulty now becomes time and our deliberative process.

Dr. Pierce's motion points out rightly that a coast-

wide moratorium on the harvest from beaches goes far beyond the original premise of protecting Delaware Bay, the Delaware Bay population of horseshoe crabs because on the other beaches those aren't Delaware Bay crabs from Florida to Maine. They're just not.

And perhaps in that context his motion has merit. But now let's go look at Options Number 2. The same thing can be said for some of those options. Closures during the spawning period are really only necessary, arguably, in Delaware Bay.

Closures that might affect Delaware Bay crabs outside Delaware Bay wouldn't be necessarily limited to January 1 through June 7<sup>th</sup>. They might more likely occur in the fall, for instance. So unfortunately what's happening now is that we're seeing that there are flaws in the underlying logic of this motion.

And I'm now concerned about, you know, whether I can vote for anything other than the first of the options based on that logic. And I don't like being there. I would prefer to be in a position where I, as I indicated earlier, where we can support action that focuses on Delaware Bay horseshoe crabs. And unfortunately it's beginning to look like this motion doesn't do that except for Option 1.

MR. BEAL: Thank you, Mr. Colvin. Keep in mind what we're doing here. We're providing direction to the plan development team to put together a document. That document is going to come back before this group.

If there are options in it at that time that you want to pull out or did not, were not developed by the plan development team as you thought they were, you're going to have another crack at this.

So what we're doing is giving direction for development of a document. So just keep that in mind as we go along. We don't have to, you know, I think people are getting, they're trying to presuppose the outcome and I think we need to see the document first. Eric Smith.

MR. SMITH: Thank you, Mr. Chairman. And I don't say "acting" because every time you've sat in that chair you do a great job so I'm going to make you a chairman. (Laughter) The fact is you just identified something that my colleague to my left here and I were talking about and you brought it to the forefront.

The way our addendum process goes we will see the draft addendum in February and we will see the final addendum after hearings in May. And if we adopt it then it won't do any good in the time period that we're talking about.

So, I have to really wonder even though the red knot issue in Delaware Bay is not in dispute as far as I'm concerned. New Jersey and Delaware have made their compelling case on that. But I'm not sure this addendum does anything for it. And the course has already been clear, as Mr. McHugh has pointed out.

They have to act on their broad fish and wildlife responsibilities. And I suspect Delaware will, too. So it raises the question of what else does this actually do except maybe give a little bit of institutional support for the gory details of the state rulemaking process that they're going to have to go through.

I'm not sure I like the idea of using the commission process for that but I know it has happened before and it's just, I guess my principal comment is timing of this process doesn't help at all for the fishery in '06 because it will come, essentially, too late.

MR. BEAL: Thank you, Eric. Given what Eric said, are there any other comments on the motion to amend which would strike Items 3 and 4 from the main motion? Mr. Colvin.

MR. COLVIN: Mr. Chairman, I'd like to offer a substitute motion to the motion to amend.

MR. BEAL: Go ahead, please.

MR. COLVIN: I would like to **move to strike Items 2 through 5 of the main motion and substitute a new Option 2 and that would read: restrictions on harvest of horseshoe crabs outside of Delaware Bay as necessary to prevent harvest of horseshoe crabs of Delaware Bay origin.**

Now, I offer this as a substitute consistent with the comments I've made previously. And I recognize that it doesn't include specifics. And at this hour we're not going to be able to put specifics in.

And I think we would need to count on the plan development team in consultation with the technical committee to develop some specific sub-options that would get at the intent of the proposed Option 2. Thank you, Mr. Chairman.

MR. BEAL: Thank you. Is there a seconder

to the substitute motion?

MR. LAPOINTE: Second.

MR. BEAL: Mr. Lapointe. All right, we're getting ourselves into a lot of layers of parliamentary process here so we're going to have to pick through this kind of slowly or hopefully quickly but deliberately.

Any debate on the motion that Gordon just made? Seeing none at the table what will happen now is we will vote on this one. If it were to pass it will become the new motion to amend. So, let's go ahead and vote on the motion to substitute.

Is there a need for a caucus? Seeing no need to caucus, those in favor of the motion to substitute please raise your right hand; those opposed, like sign; null votes, n-u-l-l; abstentions. Seeing none -- hey look at that we passed a motion. (Laughter)

So the motion carries. All right, now that becomes the new motion to amend so we will have to essentially vote on the same motion again but now it becomes the motion to amend the main motion. So if this passes the main motion is modified accordingly. Yes, Eric.

MR. SMITH: Does it become the motion to amend Dr. Pierce's?

MR. BEAL: No, it amends the main motion. Okay, a need for a caucus on the new motion to amend? Seeing none, those in favor of the motion to amend, please raise your right hand; those opposed, like sign; null votes, n-u-l-l; seeing none, abstentions; one null vote. All right, we're on a roll. We passed two motions.

Now, Julie, if you could modify the main motion, striking 2 through 5 and adding the new Number 2, please. All right, as we get that up is there any need to comment on the new main motion? Obviously you know it is still being perfected on the board but if there is a lot of debate needed we can -- Joe, you will need that read into the record? Okay.

All right, I'll start reading. I think it's pretty close to complete. **Moved that the ASMFC Horseshoe Crab Board direct the Horseshoe Crab Plan Development Team to prepare an addendum that would include the following options:**

**Number 1, a two-year moratorium on harvest of horseshoe crabs from the states of New Jersey and**

**Delaware with an exemption for existing biomedical needs. Any biomedical needs that could not be returned alive to the general area of capture shall be made available to the bait industry;**

**Number 2, restrictions on harvest of horseshoe crabs outside of Delaware Bay as necessary to prevent harvest of horseshoe crabs of Delaware Bay origin.**

Okay, are we ready to vote on the main motion? Okay, a couple of hands. Mr. Travelstead.

MR. TRAVELSTEAD: I am concerned about the word "prevent" in Item Number 2. And it just seems to suggest a moratorium. And I'm wondering if the maker of the motion would be willing to **change the word "prevent" to "restrict"** or.

MR. BEAL: Mr. Colvin, a question for the maker of the motion. And this is to your perfection. The word, a concern has been brought up about the word "prevent" harvest of Delaware Bay crabs or origin and Jack Travelstead has suggested changing it to "restrict" versus prevent. Are you comfortable with that change?

MR. COLVIN: Got your thesaurus open, Jack? I'm not sure. I guess we can agree to it.

MR. BEAL: Reluctant acceptance by the maker. Who seconded that motion? George, you were the seconder of Gordon's original substitute motion. Are you comfortable with the new word? All right, that's a favorable sign from Mr. Lapointe. Rick, did you have your hand up or is it the same comment?

MR. ROBINS: The same comment, sir. It was the concern about the language was it could be translated as a moratorium for Virginia and Maryland, theoretically. Thank you.

MR. BEAL: Fair enough. Any other comment on the main motion? All right, need for a caucus on the main motion? A lot of heads shaking no. All right, we're ready to vote on the main motion. Those in favor, please raise your right hand; those in opposition, same sign; any null votes, n-u-l-l; one null vote; abstentions.

All right, the motion carries. So the plan development team will work on that and bring a draft back in February. Any other business to come before

the Horseshoe Crab Management Board today? The board stands adjourned.

(Whereupon, the Horseshoe Crab Management Board meeting adjourned on Tuesday, November 1, 2005, at 6:45 o'clock, p.m.)

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