

PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

HORSESHOE CRAB MANAGEMENT BOARD

October 30, 2007
LOEWS ANNAPOLIS HOTEL
Annapolis, Maryland

TABLE OF CONTENTS

Call to Order	1
Approval of Agenda	1
Approval of Proceedings	1
Alternative Bait Developments.....	1
Biomedical Industry Harvest Update.....	2
Biomedical Industry Presentations	3
Update on Joint Meeting with the USFWS Shorebird Technical Committee.....	11
Update on Delaware Regulations	14
Update on New Jersey's Regulations	14
Election of Vice-Chairman	15
Adjourn.....	15

INDEX OF MOTIONS

1. **Approval of Agenda, by Consent** (Page 1).
2. **Approval of Proceedings of May 10, 2007, by Consent** (Page 1).

ATTENDANCE

Board Members

George Lapointe, ME (AA)	Howard King, MD (AA)
John Nelson, NH (AA)	Russell Dize, MD, proxy for Sen. Colburn (LA)
Rep. Dennis Abbott, NH (LA)	Bruno Vasta, MD (GA)
Ritchie White, NH (GA)	Jack Travelstead, VA, proxy for Steve Bowman (AA)
Bill Adler, MA (GA)	Kelly Place, VA, proxy for Sen. Chichester (LA)
Dan McKiernan, MA, proxy for Paul Diodati (AA)	Catherine Davenport, VA (GA)
Vito Calomo, MA, proxy for Rep. Verga (LA)	Jimmy Johnson, NC, proxy for Rep. Wainwright (LA)
Eric Smith, CT (AA)	John Frampton, SC (AA)
James Gilmore, NY (AA)	Robert Boyles, SC, Vice Chair (LA)
Pat Augustine, NY (GA)	Malcolm Rhodes, SC (GA)
Brian Culhane, NY, proxy for Sen. Johnson (LA)	Spud Woodward, GA, proxy for Susan Shipman (AA)
Peter Himchak, NJ, proxy for David Chanda (AA)	John Duren, GA (GA)
Erling Berg, NJ (GA)	Bill Sharp, FL, proxy for Gil McRae (AA)
Dick Herb, NJ, proxy for Asm. Fisher (LA)	April Price, FL (GA)
Roy Miller, DE, Chair, proxy for P. Emory (AA)	Steve Meyers, NMFS
Bernard Pankowski, DE, proxy for Sen. Venables (LA)	Jaime Geiger, US F&WS

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

Ex-Officio Members

James Cooper, AP Chair
Aaron Hurd, DE DFW, LE Representative
Larry Delancey, SC DNR, TC Vice Chair

ASMFC Staff

Vince O'Shea	Brad Spear
Bob Beal	Nicola Meserve

Guests

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Ballroom of the Loews Annapolis Hotel, Annapolis, Maryland, October 30, 2007, and was called to order at 8:10 o'clock a.m. by Chairman Roy Miller.

CALL TO ORDER

CHAIRMAN ROY MILLER: Ladies and gentlemen, I'd like to convene the Horseshoe Crab Board. I'm Roy Miller; I'm serving as chairman of the Horseshoe Crab Board. I'd like to welcome you to the Horseshoe Crab Board Meeting this morning. With me at the front, representing law enforcement is Aaron Hurd; Brad Spear, our plan coordinator with ASMFC. Next to him is Larry DeLancey, who will be representing the technical committee. To the right of him is Jim Cooper, representing the advisory panel.

The first thing I would like to do is ask if there are any corrections or additions to the minutes that were passed out from our previous Horseshoe Crab meeting; are there any correction or additions? Pete.

MR. PETER HIMCHAK: Mr. Chairman, there is one addition, which would fall under the other category about a symposium being planned in the spring of 2008, bi-state symposium for New Jersey and Delaware.

CHAIRMAN MILLER: In the spring of 2008; do you have those dates, Pete?

MR. HIMCHAK: Yes, I do, Roy. They're April 30th and May 1st.

CHAIRMAN MILLER: April 30th and May 1st. Do you know where?

MR. HIMCHAK: Lewes, Delaware.

APPROVAL OF AGENDA

CHAIRMAN MILLER: Lewes, Delaware, a familiar town. Thank you, Pete. Are there any other additions to today's agenda? I'll get back the proceedings from May 10th in just a second. Any other additions to today's agenda?

APPROVAL OF PROCEEDINGS

CHAIRMAN MILLER: Seeing none, are there any – once again I'll call for any additional corrections or

additions to the proceedings from May 10th? I need a motion to approve those.

MR. PATRICK AUGUSTINE: Thank you, Mr. Chairman, so move to accept those proceedings.

CHAIRMAN MILLER: Seconded by Bill Adler. Any disagreement with the approval of those? Seeing none, we will move on. The public comment phase – at this point in time I see comparatively few members in the audience back there. I am going to call upon Rick Robins who signed up for public comment. In keeping with the spirit of our revised procedures, at the beginning of the meeting we'll entertain comments for non-agenda items. If it's an agenda item that's previously gone out for public comment, then I have some discretion as to whether we'll entertain additional comments on an item of that fashion. Rick, did you want to say something at this point in time?

MR. RICK ROBINS: Mr. Chairman, I'll just wait.

CHAIRMAN MILLER: All right, thank you, Rick. Seeing no other hands in the back, Pete, you had a comment.

MR. HIMCHAK: Mr. Chairman, I was a little slow on this, but I thought on the agenda that Brad had requested a presentation on New Jersey regulations for 2008, which would follow immediately after Delaware's report.

ALTERNATIVE BAIT DEVELOPMENTS

CHAIRMAN MILLER: Thank you, Pete, we'll entertain that at that time. Any other agenda items? Seeing none, we will move on to Item 4, which is recent alternative bait developments, and I'll call on Brad Spear for that.

MR. BRADDOCK SPEAR: Thank you, Mr. Chairman. At the May meeting Gordon Colvin had requested that staff keep track of alternative bait developments, kind of looking at that as a possible long-term solution to the horseshoe crab management issue. The board has heard in the past of Dr. Nancy Targett's work out of the University of Delaware.

She has been working on this issue for a number of years and has made some progress. The most recent development is one of her master's students has developed a matrix that has shown some promise as an alternative bait catching eels. It's an FDA-approved matrix. It's inexpensive and I found out it's also edible, if you're interested.

The testing they set up was half of a horseshoe female horseshoe crab, just, you know, normal fishing, and compared that with grounding up a quarter of a crab, putting it in the matrix and putting it in a bait bag and fishing that in an eel trap. There was no comparable difference in catch between the eels.

It showed promise, but it still relies on the horseshoe crab itself or some portion of the horseshoe crab. The next key element is coming up with the synthetic attractant that will catch eels just the same, but I believe there is work going on in that aspect. When I hear more about that, I'll come back to the board.

CHAIRMAN MILLER: Thank you, Brad. I happen to know a little bit about that research myself, so I can add one thing. They have isolated eight different compounds, all of which can be synthesized, but they're not certain at this time; that is, Dr. Targett and her research team, as whether those compounds they've isolated represent the A-1 Steak Sauce and you still need the steak or, in other words, will those compounds alone do the job in terms of attracting.

I think that's the research area they're focusing on next. But, they have gone out to field trials, as Brad said, and the matrix is a big development. They got a huge boost from the DuPont Company that volunteered a research team to work with Dr. Targett. The advantage of the DuPont team is that they have a lot of not only laboratory research savvy but a lot of marketing experience to bring to bear on this particular research endeavor. Any questions or comments on that? Jaime.

DR. JAIME GEIGER: Thank you, Mr. Chairman. Could I ask has Dr. Targett submitted any proposal to ASMFC or any other proposal to continue funding for this kind of research?

CHAIRMAN MILLER: That's an appropriate question, Jaime, and the answer is, no, she has not requested funding from ASMFC. Her funding has been from the Delaware Department of Natural Resources, from internal funding sources, and for in-kind services donated by the DuPont Company. Perhaps if the funding sources dry up, then she will be looking for other research venues. Jaime.

DR. GEIGER: Thank you, Mr. Chairman. Again, we continue to get a lot of response from a variety of stakeholders, including the biomedical industry, the Audubon Society, and so on. We can certainly use their support in a variety of different forums, and I would hope that possibly Dr. Targett can consider a

proposal to enlist the support of a wide variety of stakeholders to continue this kind of research. Thank you.

BIOMEDICAL INDUSTRY HARVEST UPDATE

CHAIRMAN MILLER: Thank you, Jaime. Any other comments or questions? I'm going to call on Brad again for a biomedical industry harvest update.

MR. SPEAR: Also, at the last meeting Pete Himchak requested an update on at-sea culling in the biomedical industry harvest. This information is requested from the states in the annual compliance report process. I went back and in some of the states it's unreported, and I'll go through it state by state as just a brief summary.

South Carolina, by and large, the harvest of crabs for biomedical is hard harvest; therefore, there is no at-sea culling. They're essentially picking from the beach what they need. In Virginia it was unreported. In Maryland, I got qualitative information that most of the crabs that are culled are small, just juveniles.

The number of juveniles has increased over the past few years as the stock is increasing, but very few are injured or killed in the process. Also, Maryland's industry has committed to harvesting the sex ratio that they pull up and don't target females or the larger crabs. They bleed what they get.

New Jersey had the best reporting of the states. Only three of the eighteen days that were reported did not tally those numbers. Throughout those fifteen days that there was reporting of at-sea culling, there was a report of 26 crabs dead and 106 severely injured, so relatively minor numbers compared to the overall biomedical harvest.

In Massachusetts most of the crabs that go to the biomedical company are from the bait market and then bled and brought back to the bait market. But, of the crabs that are harvested just for biomedical use, less than 400 were seriously injured or killed, so, again, not a significant number of crabs dead.

CHAIRMAN MILLER: I'll quickly reference the letter that was just handed out from Cape Cod, Incorporated. You all have a copy of this letter. The author of this letter, Michael Dawson, has requested that this letter be provided to the board and that you have an opportunity to read it. So, having done so, does anyone have any comments or questions concerning this biomedical issue at this time? Jaime.

DR. GEIGER: Thank you, Mr. Chairman. I would just ask that the Massachusetts Division of Marine Resources, what do they monitor in specific reference to this fishery?

CHAIRMAN MILLER: I'm sorry, Jaime, the chairman was in a sidebar, and I missed what you said.

DR. GEIGER: Mr. Chairman, I noticed in this letter, at the end of the second paragraph, this fishery is closely monitored by the Massachusetts Division of Marine Fisheries; I'm asking the Massachusetts marine fisheries representatives what are they exactly monitoring in this fishery? Thank you.

MR. DAN McKIERNAN: We monitor the landings on a monthly basis through catch reports. We monitor the dealer landings through mandatory dealer reporting. That's done electronically. We monitor the size composition of the catch in the markets. We inventory the spawning beaches over time to present a comprehensive list of habitats that important to horseshoe crabs.

If there is anything that doesn't come to mind, maybe I'll pick it up later, but those are the basic elements. We do have an annual report that describes our efforts that I'd be happy to give to Jaime.

CHAIRMAN MILLER: Thank you, Dan. Jaime, does that answer your question adequately?

DR. GEIGER: Yes, Mr. Chairman. I just would ask is this report also provided to the technical committee as part of the routine analysis of data?

MR. McKIERNAN: I believe it is. Brad, can you help me with that?

MR. SPEAR: The plan review team receives it and the information gets transmitted to the technical committee that way.

CHAIRMAN MILLER: Any other questions? Vito.

MR. VITO CALOMO: One of our commissioners from the Commonwealth of Massachusetts also has a son that does some harvesting, and we monitor through there, too. He gives reports to us on our commission, so we know firsthand what's going on a lot of times because he's right in the field.

CHAIRMAN MILLER: Thank you, Vito. Any other questions or comments? I'm going to call on Brad

for some further updates in regard to the biomedical industry.

MR. SPEAR: There was another request at the last meeting from Dennis Abbott to have a couple representatives from the biomedical industry come in and address the board on their harvest practices; namely, where the crabs are harvested from and the disposition of those crabs once they're bled; are they going back to the waters and is there any interstate movement of the crabs. I have asked a few representatives from the industry to come, and also our advisory panel chair represents one of the companies, so we'll hear a few words from each of those.

CHAIRMAN MILLER: Alan, would you like to step forward to the microphone and please state your name for the record, sir. Thank you.

BIOMEDICAL INDUSTRY PRESENTATIONS

MR. ALLEN BURGENSEN: Good morning, ladies and gentlemen. My name is Allen Burgenson. I am the regulatory affairs manager for Lonza Walkersville in Walkersville, Maryland. Thank you for this opportunity to address the panel. I am here to discuss the biomedical uses of *Limulus polyphemus* and go through our collection process, as well as our disposition.

First, a short introduction, LAL is derived from the blood of the American horseshoe crab, as you already know. LAL currently is the only test available to detect endotoxin in parenteral or injectable pharmaceutical products. Endotoxin is ubiquitous in the environment. Pyrogen testing of parenteral medicine is required by United States law, as other international laws.

It's specified in the United States Pharmacopoeia, the European Pharmacopoeia, the Japanese Pharmacopoeia, et cetera, and hundreds of millions of doses are tested annually with LAL. So, what is tested? Anything that's given to you by injection is tested by LAL, things like vaccines, IV drugs, intravenous fluids, even medical devices such replacement joints, sutures, cardiac stents, radiology imaging fluids.

To tell you how serious endotoxin is in parenteral pharmaceuticals, the effects of endotoxin is fever, at the least; shock; vascular collapse; and/or death. My company, Lonza, is licensed by the Maryland Division of Natural Resources to obtain crabs. We

obtain our crabs from licensed fishermen, and those catches are recorded on official DNR forms.

The crabs are received, bled and returned to the fishermen according to Lonza written procedures, and the fishermen return the crabs to the areas where they were originally caught. All deaths or injuries are recorded on those forms. We also obtain some crabs from the Virginia fishermen if we can't get Maryland crabs.

Here is a picture of one of our fishermen's boats. If you look on the deck of the boat, you can see some blue tubs. Here are those tubs inside of our facility. Now, they're carefully moving the crabs, inspecting them, moving them into tubs from which they will ultimately be distributed for bleeding. You will see that club says, "to bleed".

Now, that person walks up and folds the horseshoe crab, exposing its membrane and places it in the bleeding station. Here are all the crabs all lined up ready to go. The area is sanitized to prevent contamination of either the lysate or injury to the crab. Here we are collecting limulus blood.

Then after the bleeding is stopped, the crabs are carefully removed and placed in the bled – and you can see that toter is labeled "bled", and then the crabs are removed from the bleeding facility. The blood is then spun down, centrifuged to collect the cells. Here they are doing more centrifugation or preparing for centrifugation. Once the blood cells are recovered, water injection is added to the cells, and then they are saunacated to pop them.

So, with that said, here is our record for 2007. The top line is our harvest numbers per day. As you see on the bottom line, that is our numbers of crabs rejected on a daily basis. It's generally around 50 or so except for two blips. Earlier on in the season we had 156 dead, and then later on in the season we had 249 dead.

But if you look at those rejects by category, the number of total rejects, once again, was 156. The dead rejects the first time was 160, and that was based on – it was our first time using a new fisherman from Virginia. We corrected some of the procedures so we don't have that problem again. Then we had a problem with the weather on that second blip.

But, as you can see, the number of dead rejects is extremely small. If you look at the total number of rejects, it's usually under 50. But if you look at that reject rate on a percentage basis, you're generally

under 5 percent, usually around 3 percent, except for those two blips that I mentioned earlier where we had a 13 percent death rate and a 13.3 percent death rate.

So, if you look at our total harvest since 2004 – 2004 we had a short collection year where we harvested about 40,000 crabs, and that's because we shut down our bleeding facility in Chincoteague, Virginia, and opened a new facility in Salisbury, Maryland. After that our collection permit from the state of Maryland said that we were allowed to harvest 150,000 crabs per year.

Well, you can see the next two years, 2005 and 2006 – from here I can't read the numbers, but it's approximately 120,000, but our death rate is 561 in 2005 and 420 in 2006. Then this year we were allowed to harvest 185,000. We're almost there, but our death rate is still very low. If you look at our total reject rate – that includes injuries and deaths, and even if you throw in some of the small crabs – we're still below 5 percent.

This is a copy of the form that we use to harvest our crabs. It says the exact fishermen who caught the material – in this case it's Jeff Eusler – where he caught the crabs, the number of trawls he took, and he has signed off. Then on the top of this form it's our receipt, the number that we used in our process, the number rejected.

Then on the bottom of the form it's actually when the fisherman put the crabs back into approximately the same area where they were harvested, and the number of dead and number of injured found after that. As you can see, it's within 24 hours that we put those crabs back. This is the same form from one of our other fisherman. You can see it's a day later and approximately the same area where he got the crabs from.

This is the statement that we get from our Virginia fishermen. Virginia doesn't require the recordkeeping that Maryland does, and so we record how many we got from the fisherman and the number of rejects for size, minor injuries as well as dead. I'll entertain any questions if anybody has any.

CHAIRMAN MILLER: Any question? John.

MR. JOHN DUREN: Thank you very much for that report. My question is, is your company involved in research on alternate methods for doing this endotoxin test or could you give us an update on the status of any research on those alternate methods?

MR. BURGENSEN: Actually, we're working on a recombinant product for endotoxin testing. It's basically the same clotting cascade as was found in the blood of the *Limulus polyphemus*. We're working on introducing that, but it has to be accepted by industry before it will actually be – and also the problem is FDA licensure.

The pharmaceutical industry right now, because LAL is the only FDA-licensed test, that's what industry wants to use. So we have to get acceptance from the biomedical industry – that would be the biopharmaceutical and pharmaceutical industry to actually use that as an alternate test. The other test is obviously rabbit testing, which was in vogue before LAL, and right now there's just too many products to be tested by rabbits.

CHAIRMAN MILLER: Other questions? Dennis and then Pete.

REPRESENTATIVE DENNIS ABBOTT: Thank you, Mr. Chair, and thank you for the presentation. It was very interesting to me. As an aside, I find it very interesting for someone who is carrying a few stents in my heart that they were affected by the LAL that you've produced.

But, also, to a point, it may seem not too important, but as I was looking at that and the presentation even previously, I was picturing all the crabs in the rack as they were getting bled, and I was picturing a crab, let's say, like Vito Calomo in one of those racks and maybe Nichola in another rack, and they have different capacities of LAL.

I was just wondering how you determine the percentage of LAL that you remove from an individual creature. I mean, Vito would probably be one of the crabs that would be returned to the water in good condition where Nichola might be in critical or more than serious condition if you took the same volume. How do you determine the process of that?

MR. BURGENSEN: Okay, years ago I used to be one of those lighter crabs that would be injured but not anymore. The bleeding process is actually self-limiting. The crab will actually stop bleeding. So with smaller crabs, you'll get less amounts of blood and with larger crabs you'll get larger amounts of blood, but it just stops.

And what you saw in those pictures, those bottles contained blood from many crabs. We just move the bottle from crab to crab to crab or we put new crabs in and use another needle and remove the blood.

REPRESENTATIVE ABBOTT: A followup, but not to belabor the point, if you hung me up or Vito and you started bleeding us, eventually we would stop bleeding if we had nothing left. How do you determine a proper amount to take from the crab?

MR. BURGENSEN: Well, the crabs aren't exsanguinated. I mean, they're not totally bled out. Like I said, our process calls for the bleeding to stop when it stops. We don't force anymore blood out. There is no magic number that says we're going to get 15 milliliters from this crab and 20 milliliters from this crab. Generally, when the crab is done bleeding, it's done bleeding, and the smaller crabs will give you a less amount of blood and the larger crabs will give you more. But it's never enough to kill the crab or it's usually not.

REPRESENTATIVE ABBOTT: I thank you, but I'm still wondering about how much blood you take.

MR. BURGENSEN: It's less than 15 milliliters per crab.

CHAIRMAN MILLER: Jim, did you have something to add to that?

MR. JAMES COOPER: Yes, maybe I can add to that. I think the presentation was excellent, Allen. I appreciate that, I think that was good for the group. The horseshoe crab doesn't really have a circulatory system like we do, so that when the needle is inserted through the membrane, there is – basically, we're taking off some blood that has accumulated in that part of the crab, and it is, indeed, self-limiting and related to the size of the horseshoe crab.

After years and years of doing this, we know that's going to be about 15 percent of our blood volume, which is very similar to what would happen if you went to give blood. Of course, you would be kicking and screaming, but these guys don't say anything when you stick them. They don't say, "Ouch" or anything like that, and we don't give them cookies and tea when it's over.

But, having been associated with this from the very beginning – we started bleeding in Chincoteague in 1971 – I've never seen a specimen die in the rack. The mortality associated with the harvesting of the crab occurs during the collection and handling process. Unfortunately, their tail is a long, spindly device, occasionally if we're not handling them correctly, they inadvertently puncture each other, and that's where the injury comes about. So, it doesn't happen in the rack. That's a very innocuous process

for the crab as much as a blood donation is among humans.

CHAIRMAN MILLER: Thank you, a quick followup, Dennis.

REPRESENTATIVE ABBOTT: Thank you, yes. Between the two comments, I appreciate both of them, and your comment really gives me a much better understanding of the process.

CHAIRMAN MILLER: I had a number of hands. I think I had down Pete and then Jaime and then Bill Adler, Eric, and then Pat. I would like to point that we're going to hear from another speaker, Benjie Swan, on this same general topic. Any of those want to hold their comments until the second speaker has an opportunity? Pat, do you want bring yours up now and Pete as well? I recognize Pete first and then I'll get you, Pat.

MR. HIMCHAK: Okay, I just had a quick question for the gentleman from Lonza. Recognizing that this LAL has probably been keeping me alive for many years and the value of it, but does the corporation itself, do you have any budgeted funds for programs related to horseshoe crab information, education, possibly habitat enrichment, stock assessment – is there anything in the corporation that addresses the health or the research on the horseshoe crab research?

MR. BURGENSEN: For the longest time we did have an association with Dr. Jim Berkson of Virginia Tech. I'm not sure if that association has continued, but we do have an education program. It was called "Just Flip Them" where we teach kids, when they see horseshoe crabs on the beach that are flipped over, to flip them and allow them to get back to the water. We also have a lot of community outreach where we discuss the capture of horseshoe crabs and the value of the product. We do that at industry meetings around the world.

MR. AUGUSTINE: Thank you, Mr. Chairman. When you say you remove the cells, is that like taking platelets from humans? That's one question. The question if those cells are gone, what does it take in terms of time to replace those cells in that horseshoe crab once they've been put back in the wild? What is the recovery time?

MR. BURGENSEN: I can take the first part, Jim, if you want to take the second. Okay, we take whole blood just as we would from you, and then it's spun down and the hemolyn or the plasma, in your case, is discarded, and we only keep the cells themselves, the

circulating amoebocytes, which is then lyzed or popped to get the cell components that make up our product. As for the regeneration time, that I'm not sure of.

MR. COOPER: Actually, that's not really well known. The government branch of the FDA kept horseshoe crabs in captivity for a number of years in a sea tank in Bethesda, Maryland, and actually did some looks at some evaluation of something equivalent to a blood count where you're looking at the proportion of amoebocytes – by the way, the horseshoe crab only has one circulating blood cell; whereas, mammals have white and red and, of course, platelets.

So the amoebocyte is the only formed element. In captivity, not in nature, but in captivity these creatures seemed to have complete recovery of the cell count within four to six weeks, which is very similar to mammals. Of course, humans have the spleen to quickly replace red cells and a few other components, because that's a storehouse, and there really isn't a similar type of organ system in the horseshoe crab. But, horseshoe crabs are tough, resilient creatures. They have survived from antiquity and it's because of their enormous capacity for survival that we have them today.

CHAIRMAN MILLER: Thank you. I think I'm going to call on Benjie Swan next.

MS. BENJIE SWAN: I'm Benjie Swan, and I was invited to talk to you specifically about the capture and release sites of the collected horseshoe crabs that we used. My company is Limuli Laboratories. It is one of the few as well as one of the smallest producers of Limulus Amoebocyte Lysate.

We're located on Delaware Bay. We're on the westerly side of Delaware Bay across from the tourist beaches of the Atlantic Ocean. We're approximately two miles south of a popular birding spot, which is Reed's Beach. We're across the bay from Delaware, from Kitts Hummock and Bowers Beach, if that gives you any idea of where we are. We're on the southern tip of New Jersey.

The site is known as King Crab Landing because of its long history in connection with horseshoe crabs. The beach provides ideal spawning habitat for the adults and also good nursery habitat for the young juveniles. We collect crabs a few different ways. In the beginning of the season we collect horseshoe crabs by hand, and we collect them from the Delaware Bay Creek. That is usually done about 15

miles northwest of the laboratory. I don't know if anyone is familiar with Fortasque, New Jersey, but the creeks that we collect from are up in that area.

The remaining months we collect horseshoe crabs by trawling, by fishing vessels pulling a net along the ocean bottom in deeper waters. New Jersey vessels go off the coast of New Jersey in the Atlantic Ocean from Sea Isle down to Cape May. That would be in state waters which begin two miles off the coast.

We also fishing vessels also trawl in the Carl Shuster, Jr. Horseshoe Crab Reserve, which begins three miles offshore. The crabs collected are all released at King Crab Landing, which is the site of the laboratory. They're bled either the day that the crabs are collected or the next day, and they're released very shortly after blood collection. We release all the crabs right at King Crab Landing.

The other way that we do collect our horseshoe crabs is we do – when the Maryland Bait Market is opened, we do go down and purchase horseshoe crabs from the Maryland Bait Market. Ocean City Trawler goes out off from Ocean City, Maryland, and collects the animals one to three miles offshore.

The animals used to be placed back in the water at King Crab Landing, Delaware Bay waters, but recently they've been – rather than putting them back into the water, they've been given to New Jersey horseshoe crab permit holders to use for eel and conch bait. We release and collect all our crabs from the area that encompasses the Delaware Bay population, which extends from the shores of Delaware Bay, both in Delaware and New Jersey, and out into the Atlantic Ocean, into the deep waters.

The Carl Shuster, Jr. Horseshoe Crab Reserve that was put in place to protect the Delaware Bay horseshoe crab population, actually the lines of demarcation run from Ocean City, New Jersey, south to Ocean City, Maryland. This is the area that we collect and release all our crabs. I've worked on the Delaware Bay Shore for many years. I think this season was my 23rd, maybe, in collecting and manufacturing the product.

I've done extensive tagging. I published my tagging work in estuaries in 2005, and I have copies of my paper if anyone would like a copy. We tagged 30,000 horseshoe crabs over a 17-year span of time. We tracked their mingling and disbursement of the released crabs. Most of the crabs were released at King Crab Landing. We found the horseshoe crabs

on both shores of the bay, both in Delaware and New Jersey.

We found them in deeper waters off the Atlantic coast, off the state of New Jersey. We found them off the Maryland coast as well. Specifically, we tagged through the Maryland Department of Natural Resources. We've specifically tagged about 800 horseshoe crabs one to three miles off the coast of Ocean City, Maryland.

We've tracked their movements and recoveries were made up and down the spawning beaches of Delaware Bay, Kitts Hummock, Pickering, High's Beach, Fortescue, Gandy's Beach, all the beaches along the Delaware Bay Estuary. We've also done tagging of the crabs that come out of the Carl N. Shuster, Jr., Horseshoe Crab Reserves.

That's one of the requirements of the permit is to tag 15 percent of the animals that we collect from that area. We've done that and we've tracked their movements. And, again, the horseshoe crabs move in and out of the bay and mingle with the overall Delaware Bay population. My comments really are specific about the areas that we capture and release, and I thought that was really the information you needed. So, if you have any questions, I'd be happy to answer them.

CHAIRMAN MILLER: Thank you, Benjie. Are there any questions specifically for Benji, recognizing that we are going to give Jim Cooper another opportunity to speak as well. Ritchie.

MR. G. RITCHIE WHITE: Thank you, Mr. Chairman. What percent return have you gotten on the tags?

MS. SWAN: A little less than 10 percent.

CHAIRMAN MILLER: Any other questions for Benjie? Arnold, please come to the mike.

MR. ARNOLD LEO: Arnold Leo, consultant for commercial fisheries, Town of East Hampton. Benjie, thanks for that interesting presentation. My question is when you collect by hand in the estuary shores, is this prior or after the horseshoe crabs have laid their eggs?

MS. SWAN: In the state of New Jersey, I believe it was in 2003, everyone that collect horseshoe crabs – that included the bait collectors as well – we were all limited to collect horseshoe crabs a thousand feet from the Delaware Bay Shore up into the creeks. So,

we're collecting on the creek banks and then the isolated sandy beaches that are along the creek. That area was determined to be marginal spawning habitat for the horseshoe crabs.

So we're collecting in that area. We used to collect in May and June. The state of New Jersey closed the month of May to harvest of all kinds, so I actually begin harvesting the animals in the creeks after June 8th.

CHAIRMAN MILLER: Anything further for Benjie before we move on to Jim? Seeing nothing, I'll call on Jim for additional comments.

MR. COOPER: I have just a few comments. The previous two speakers I think have well described the collection and bleeding process. I'd like to interject that every stakeholder in the Atlantic Horseshoe Crab industry and business and so forth, we owe a real debt of thanks to Benjie Swan and her mentor in this business, the late Jim Finn, who unselfishly of their time and interest of conservation and the preservation of the horseshoe crab began to collect this data on their own.

All of us benefit from the basic information about habitat and migration issues and range of movement of these crabs, and we wouldn't be nearly as well informed with their work over the past two decades. Now, I will move on to talking a little bit about the Charles River Laboratory in Charleston, South Carolina. I have to qualify my remarks. I am no longer an employee of that company.

I did find it in 1987 and it was sold to the Charles River in 1994. I continue as an interested observer and continue to work with the advisory panel because of my interest in conservation as well as appropriate use in the biomedical industry. I have asked if I could speak on my own recognition and represent them, and I do have their approval.

I'll tell you a little bit about the collection process and our strategy in managing the horseshoe crab. In South Carolina we recognized in the early nineties that we had a potentially fragile horseshoe crab population. It seemed to be primarily concentrated in about three areas of habitat, and we thought that any exploitation in numbers could have a rather rapid and severe impact on that.

We worked with the Division of Natural Resources in South Carolina to limit the use of the horseshoe crab in non-returnable or non-sustaining use of the crab. The strategy here has been for this biomedical

company to use horseshoe crabs locally; that is, they are taken from Boos Bay, a beautiful reserve about 45 miles north of Charleston, and also from sounds and estuaries about 60 to 75 miles southwest of Charleston.

Of course, that means that there is no movement of crabs interstate. They are collected on the night before being used and then being returned the same day of bleeding. There really is no culling at sea. There is simply a catch and return. Our strategy was to invest in the livelihood of the fishermen in the state, the crabbers.

We think that the reason that our numbers of horseshoe crabs are increasing, as we look at data from the Division of Natural Resources and others, is that we bring value to the crab. They used to be destroyed as a nuisance because of being caught in the nets and this sort of thing. We pay them well. We get them to buy into the renewing of the resource. They're only allowed to participate in selling to the company if they demonstrate good collection habits as well as return habits.

I could let our South Carolina representative speak if he wants to add to this. The fishermen are responsible for collecting their own crabs and returning them, and they're not allowed to participate if they don't meet our objectives of good handling the crabs. Then DNR will occasionally monitor these fellows to, again, on their own determine if they're returning them to the sites that they claim that they're returning them to. So, rather than belabor this, I'll end at this point in time and take questions if necessary.

CHAIRMAN MILLER: I had a number of hands up before. First on my list was Jaime and then Bill Adler, Eric. Do the three of you still have a question? Jaime.

DR. GEIGER: Thank you, Mr. Chairman. On the previous presentations, I was just curious, once horseshoe crabs are collected by their particular laboratory, how long are they held in the laboratory before being released to the wild?

MR. BURGENSEN: We usually keep the crabs under 24 hours, and that's what is recorded on the official DNR forms.

MR. COOPER: In South Carolina, I would estimate that the time for return is in range of 12 to 18 hours, maximum.

MS. SWAN: Our horseshoe crabs probably more like the 12 to 18 hours. If they're hand collected, it depends when the high tide is. If the high tide is midnight, we bleed them the first thing in the morning and then we will release them probably by lunchtime. If they're trawl collected, if they come in by nine or ten in the morning, we'll bleed them that day and they will be out by four or five. If they're collected later in the afternoon, we will keep until the first thing in the morning and then they will be released around lunchtime.

MR. ERIC SMITH: Well, I may need to apologize because I may have missed this in the interchange of the three presentations. The question that came up after the first speaker, it sounded like the solution to Dennis' question was a delayed mortality study, and I just didn't get the sense whether industry or in some cases I guess FDA had monitored early on the condition of holding crabs in the lab.

But, if it's in there, I missed it, and I apologize, but I don't recall that I heard it. In other words, once the crabs were bled, have they ever been held, FDA or otherwise, to see whether they suffer any ill effect other than just being released within 24 hours?

CHAIRMAN MILLER: I'll call on any of our three speakers; any of you care to address that or perhaps someone else in our audience? Benjie.

MS. SWAN: I'm not exactly sure of your question, but as Dr. Cooper pointed out, a crab has never died on the rack. We only use healthy horseshoe crabs. The ones that we really reject are rejected most of the time before they even come into the laboratory. They're collected and then some of them are culled at sea. Then they're brought to the laboratory, and they're unloaded.

Then each of those crabs is inspected. We clean every crab off to bring it into the laboratory. Any crabs that are injured slightly, even, we reject, and we wouldn't bring into the laboratory. Because of the extensive tagging that I've done, I have observed their behavior after bleeding. Believe it or not, some of them in the return tanks, the male will attach to the female in the return tank before we even get them out to the beach.

I've released horseshoe crabs on a morning tide, and I've found those horseshoe crabs on the night tide actively spawning. Also, I've gotten calls where I've released an animal from King Crab Landing, and it was found like maybe three miles south at another beach spawning. Because we're choosing the healthy

animals, they behave naturally after they're bled. That's my findings.

CHAIRMAN MILLER: Eric, that answer was what you were looking? Allen, did you want to add to that?

MR. BURGENSEN: I would like echo Benjie's comments. At Lonza we do the exact same thing. All slightly injured crabs are culled out, so they're not bled. Another interesting that we've found – one of our practices is to mark the crab after it has been bled. We do that by punching a hole in the right side for an odd year and in the left side for the even year. We've had crabs come back that have our hole punch, so the crabs do come back year after year after year.

CHAIRMAN MILLER: Are there any further questions or comments? Dennis first and then Ritchie.

REPRESENTATIVE ABBOTT: Thank you, Mr. Chair. Again, I thank the two presenters; and having met Benjie Swan some years ago when she attended a meeting, my first meeting with Benjie was in Arlington when we met there some years ago when she brought one of her children. I know she has been involved in this business for a long time. I think during that time, if my memory serves me correctly, she managed to raise six children or is still raising six children during this time.

Pete Himchak asked some questions and also Jaime Geiger, and my perceptions may be right or wrong, but I think we're seeing this morning – well, let me go backwards a little bit. Surely, this board has had many issues with horseshoe crabs, both biologically and socially and whatever; also as it relates to birds and whatever.

We have a big company come in and tell you what they're doing; and when Pete Himchak asked, you know, what do you do on the good side of things, and they said they tell kids to flip them. That's corporate America. A small company like Benjie, again my perception, she does tagging and does positive things.

I think maybe a take-home message is that Lonza should look at what they can do to help the crab population or other things that would positively take us in a good direction. Again, I'm left somewhat with the feeling that from one side it's what can you do for me, and the other side is what can I do for you? So, again, my perception, but I would like to see whatever can be done by the companies to help

us as we try to protect and ensure a good population of horseshoe crabs. Thank you, Mr. Chair.

MR. R. WHITE: Thank you, Mr. Chairman. I guess this question would be for the technical committee. Is a 10 percent return on tagging what we would expect, the first question. And then it sounded like Benjie was required to do tagging as part of her permit; and if that's case and there's more information we need to obtain from horseshoe crabs, should we not be requiring additional tagging from these other permit holders?

CHAIRMAN MILLER: Larry, would you like to address that?

MR. LARRY DeLANCEY: Sure. Several years ago – I think it was 1999 – the technical committee put together a program for the biomedical folks to tag, and they tagged a bunch of crabs that year. It has been very useful information in South Carolina. Some of those tags are still showing up almost ten years later. That was a one-time program that we've talked about doing again.

Is something that we could certainly do in the future. Every bit of information is useful, certainly. A 10 percent return rate I would consider excellent. We're used to tagging shrimp, and have had good returns and then also not so good ones, like zero or 1 percent. It varies quite a bit. Fish, it might be better.

MR. R. WHITE: A followup, Mr. Chairman. If the board felt that additional tagging would be beneficial, would the process start here or would that be something that each state would have to implement as far as requiring tagging as part of a permit?

CHAIRMAN MILLER: As the result of a sidebar with Brad, part of Benjie's operation fishes in federal waters. It's my understanding that would be part of her federal permit; whereas, fishing within state waters would probably be up to the purview of the individual states. I would assume, Ritchie, that whatever requirements are imposed with regard to tagging, mark and release would be imposed at the state level.

MR. R. WHITE: A follow up; I should know this but I don't. In setting the allocation for the biomedical, don't we do that on the board level; and if so, then couldn't we attach tagging requirements to that?

CHAIRMAN MILLER: I'm going to call on Brad to address that question, Ritchie.

MR. SPEAR: Currently there is no board-determined quota or harvest limit for biomedical. It's something that we monitor and look at against a mortality threshold that was adopted by the board with the original FMP back in '98. That's just something we do through the annual process.

MR. HIMCHAK: Thank you, Mr. Chairman. Going back down memory lane, it was the recommendation of the technical committee to have the biomedical companies tag either 2,000 horseshoe crabs or 500 based on the size of the operation of the company. We required that for a year.

Unfortunately, we were setting up a tagging subcommittee at the same time we were developing a coast-wide tagging reporting system at the same time. We hadn't clearly defined the objectives of the tagging program on horseshoe crabs or even what tag to use. It was short-lived requirement on the companies.

But, the tagging of horseshoe crabs, as Benjie has demonstrated, has become quite refined and quite standard over the succeeding years. I just see it as a tremendous opportunity. If you're out there collecting crabs and you're utilizing them and you're benefiting financially from them, then some reinvestment should be made into the resource, whether it be through – there could be some contribution to the stock assessment on horseshoe crabs.

CHAIRMAN MILLER: I'm not sure how much authority the board can exert in requiring the biomedical companies to engage in a tagging program, but, certainly, if any of them are interested, I strongly encourage them to get in touch with Brad or with perhaps individual members of the technical committee. The TC or Brad will be happy to work with them in helping design a program.

DR. GEIGER: Mr. Chairman, has the technical committee had the opportunity to design what would be an appropriate and robust statistical sampling program that would reduce the uncertainty related to populations of horseshoe crabs?

CHAIRMAN MILLER: Larry, would you be prepared to answer that?

MR. DeLANCEY: I don't think we have yet. It's sort of there on the mid-term agenda to talk more about tagging and looking at things we could do with it. It would certainly depend on funding for meetings and that sort of thing, but it could be certainly looked

at. There is a tagging subcommittee as Pete mentioned, so that's one of the things we could look at.

CHAIRMAN MILLER: Do you have a followup, Jaime?

DR. GEIGER: Thank you, Mr. Chairman. I think that would be a desirable first step, certainly, to have that input from the technical committee. Again, given all the uncertainty that we see both in horseshoe crabs and migratory shorebirds, certainly, try to design the appropriate sampling regime to get that robust and statistically valid data would be a very good first step. Once we do have that design and those approximate costs, then I think it would be appropriate to look at ways on how we could best fund that. Thank you, Mr. Chairman.

MR. SMITH: Mr. Chairman, I've benefited greatly from the interchange this morning. It's been very informative, but I would ask that we move on so that we can conclude our business. Thank you.

MR. AUGUSTINE: Very quickly, could we ask, Mr. Chairman, the technical committee to give us a report at our next meeting, if possible, as to how you've developed a protocol or what your suggestion might be a tagging program, if that would be in order, Mr. Chairman.

CHAIRMAN MILLER: Brad is nodding his head that that's doable. Any objection from the rest of the board? If not, we'll so charge the technical committee. As it was pointed out, time is slipping away from us, so I would like to move on to Agenda Item 6. I wanted thank Allen and Benjie and Jim for that very informative talk. I learned a great deal, and I appreciate your coming and taking your time to be with us today.

UPDATE ON JOINT MEETING WITH THE USFWS SHOREBIRD TECHNICAL COMMITTEE

But moving on, I would like to hear a report on the update of the joint meeting with the U.S. Fish and Wildlife Service Shorebird Technical Committee, and I am going to call on Larry DeLancey of the TC for that report.

MR. DeLANCEY: Thank you, Roy. I just want to, on behalf of the committees, acknowledge the support of ASMFC and the U.S. Fish and Wildlife Service for sponsoring those two committees and this particular meeting. Roy was actually able to attend

for one day, and we appreciated his presence at the meeting.

We first heard on horseshoe crab monitoring, kind of an update. Stew Michels from Delaware gave that. Most of the sampling surveys for Delaware Bay are completed now and the data is being worked up. There is some preliminary data out there. The Virginia Tech Trawl Survey, as you all probably know, is offshore of Delaware Bay, and that should be wrapping up right about now, I would guess.

Just some recent observations as to 2006 – the numbers of spawners have declined on Delaware beaches, but they had increased in New Jersey, so overall there really wasn't much of a trend in that for all of Delaware Bay. Egg densities remain relatively low in New Jersey. There were some improving numbers in 2007, just on preliminary estimates, for Delaware, but that's only three years of data on that.

Quickly, just some regulatory notes, and anyone can correct me if I'm wrong in any of this, but Delaware has set 100,000 male horseshoe crabs for the bay fishery for 2008. New Jersey still has a complete moratorium at least until the fall of '08. Then ASMFC Amendment 4 sunsets September 30th of 2008. Many of the primary red knot researchers were there, and we heard lots talks from those folks. It was good to have them contributing. They seemed willing to supply their data for use in however we proceed in the future.

Just some bottom line stuff; Tierra del Fuego winter bird counts have been stable over the last two years, but they expect a decline soon because over a thousand birds died probably because of red tide in Paraguay in the spring of '07, before they migrated up through Delaware. There has been good weight gain in the last two years on the birds passing through Delaware Bay, prior to their breeding migration.

Like I said, data on various surveys are now available and there has been a dramatic decline by at least two-thirds in bird numbers since 2000. On a regulatory note, the red knot is being considered for endangered listing in Canada. It's a province-by-province process up there.

We then devoted the rest of the meeting to developing an adaptive resource management program for horseshoe crabs and the birds for Delaware Bay. This was first mentioned in the 2004 Horseshoe Crab Stock Assessment, which is really a trends' analysis done by Jim Berkson. That was the

first time I heard the term, but it is becoming more popular.

The feds are certainly interested in using it for a variety of resource issues. There is an adaptive management primer on the Department of Interior Website. Just go on there and click “adaptive management”. There are case studies, there is a technical guide, and I found it quite useful because I know virtually nothing about it.

Jim Nichols of USGS is an expert. He gave us an introduction. The entire meeting was facilitated by Frank Dootz of the University of Virginia. He did a great job as well. What the committees did basically was fleshed out a proposed adaptive management program for horseshoe crabs and red knot shorebirds in the Delaware Bay.

We selected a management objective, which you have to do with this type of program. It basically reflects the desire to have a sustainable horseshoe crab harvest and also adequate eggs for migrating red knots. There were several models talked about as a conceptual model. Actually Brad and some of the other folks, Mike Millard and others came up with a summer workshop.

Then a modeling subcommittee was formed and through members and other attendees with model experience, we feel very good about this. They will be working on coming up with some predictive models which hopefully in the near future we’ll be able to use, and you guys will be able to set annual harvest limits and use those models. The models can change over time. You weight them differently. Certainly, you guys will receive an update on all this activity probably by the next board meeting, I would think. That’s all I have.

CHAIRMAN MILLER: Let me just throw in my two cents worth in this regard. I did have an opportunity to sit in on the initial day for this particular workshop. It was my first opportunity to see the members of the Shorebird Technical Committee interact directly in the same meeting with some members of the Horseshoe Crab Technical Committee. I feel it was a good working relationship and a good foundation for future working relationships. Now, having said that, are there any questions or comments from the audience in regard to this meeting a couple of weeks ago? Pete.

MR. HIMCHAK: Roy, one quick question. I’m very happy that this meeting took place, and you have a modeling subcommittee. I don’t know how many

times it will need to meet to come up with some biometrics on whether or not there are enough horseshoe crab eggs available to the shorebirds, but who has the financial burden, or will the ASMFC continue to support all these joint meetings as this thing plays out? It is going to be a rather lengthy process, I believe.

CHAIRMAN MILLER: I’m not going to attempt to answer that, and maybe I can call on Brad or perhaps Bob.

MR. SPEAR: Pete, there are a couple of meetings budgeted for in the 2008 action plan. The board will have a chance to look at that and discuss that later on this week. There are not enough meetings in there to probably fill the full requirements for those committees to meet. That was discussed at the meeting as well, and there are a number of people exploring alternative sources of funding.

One very promising source has come up. In fact, there may be money for a post-doc at USGS to kind of help move this process along and help facilitate the modeling efforts of the two committees. I believe travel and some meeting costs will be built into that as well.

MR. JACK TRAVELSTEAD: Mr. DeLancey mentioned some egg density information just very briefly when he spoke. I recall back in 2003, I guess it was the shorebird people and horseshoe crab committee met, there was an agreement or decision made to develop a new protocol for measuring egg density in Delaware Bay. I believe that was done, but I don’t recall ever seeing the results of that new protocol, and I’m just wondering if – maybe I’ve missed it – if that information could be made available to the management board at some point.

MR. DeLANCEY: Yes, I think it could; I don’t see why not. Like I said, they seemed to be pretty forthcoming on their information, so we’ll certainly make that request.

MR. COOPER: Thank you, Mr. Chairman. Brad, is the assumption that the results of the modeling will be applicable for the coast-wide fishery so it can be used anywhere or is going to be more regional?

MR. SPEAR: The modeling is regional in focus, focusing on crabs that spend some part of their life in the Delaware Bay, so they call it the Delaware Bay population. One of the first tasks is to define that population.

CHAIRMAN MILLER: All right, I'm going to call on the audience now. I saw Rick Robins' hand first.

MR. RICK ROBINS: Thank you and good morning, Mr. Chairman and commissioners. On behalf of the Chesapeake Bay Packing and Bernie's Conchs, I'd like to take this opportunity to express our strong support for the adaptive resource modeling that's currently being undertaken at the direction of this board to manage this resource.

I'd also like to raise an important procedural concern. Prior to the first scheduled joint meeting of the Horseshoe Crab Technical Committee and Shorebird Technical Committee, which was held from 16 through 18 October of this year, I was informed by ASMFC staff in clear language that the stakeholder public would not be allowed to make any public comment at the joint meeting, submit proposals or position papers to the joint committees or otherwise participate publicly in the meetings.

Based on this information from ASMFC staff, I did not send anyone to the meeting to represent our positions or interests. In fact, however, members of the stakeholder public, including representatives from environmental groups, were allowed to participate in the committees' discussions.

It's not clear how such a modification to the ground rules occurred; however, as a result, the first meeting did not benefit from the breadth of stakeholder input or values that are important to the management of this complex resource. Based on problems experienced at previous technical committee meetings related to this fishery, I would encourage the board to allow limited public input into the process in a structured manner so as to prevent the public input from disrupting the important role and work of the technical committees.

Furthermore, I would specifically request that the chair work with commission staff to ensure that the ground rules, however they're defined, for public input and the opportunity for public input are clearly communicated and made available to the public. Despite these specific concerns regarding stakeholder input, I remain sincerely supportive of the approach.

I think the process will move us towards a more data-driven management model, and I support that. I think the success of it is going to be determined by the sufficient oversight being brought by this board. In a broader sense, I think this board should be encouraged by the 2006 survey results that have been made public this past spring. Again, I would like to

express my support for the modeling process. Thank you.

CHAIRMAN MILLER: Rick, as chairman I was unaware of your concerns or any dialogue that you had had with the TC in this. I think what I can pledge to do is request that the technical committee chair, Mike Millard, discuss any future participation by, shall we say, NGOs in future endeavors concerning the adaptive management process and attempt to factor in at least limited representation from the full NGO community.

We apologize if there was a misunderstanding and an error omission on our part in regard to this previous workshop. Any further questions concerning the workshop that was held in West Virginia? Jaime Geiger.

DR. GEIGER: Thank you, Mr. Chairman. I just want to point out that the use of these, what I'm calling, structured decision-making techniques and adaptive management techniques are a new process that the Fish and Wildlife Service is implementing nationwide. The process has been very beneficial in resolving complex and controversial issues.

It allows everybody to focus on sound science, but also to clearly identify what the values are of the individual stakeholders. The process itself is being used in several different instances, at least in the Northeast Region as well as other parts of the country. It's been proven to be very productive, and it does help in resolving very complex issues, but it does require inclusion of all stakeholders in the process. And, again, it's our intention to be sure that we are indeed inclusive. Thank you, Mr. Chairman.

CHAIRMAN MILLER: Thank you, Jaime. Peter, something related to this item?

MR. HIMCHAK: Yes, this is a procedural issue again. ASMFC technical committees are so well structured, and I was wondering if – I mean, can we go to a website to find out how the Shorebird Technical Committee is structure, who is a so-called representative of whom, and who is there as a technical advisor? You know, what is the makeup of the Shorebird Technical Committee is what I'm looking for?

CHAIRMAN MILLER: I'll call on Brad and Jaime may want to chime in on this as well. Let's just keep in mind we're rapidly approaching 9:30, and we have a couple of other short announcements to go yet.

MR. SPEAR: The committee underwent a few changes recently, and I don't have the current breakdown of the committee, and it's not available on the web, I don't think at this point, but I'll have a full listing for the next board meeting.

UPDATE ON DELAWARE REGULATIONS

CHAIRMAN MILLER: Thank you to all and thank you, Larry, for that update. I wanted to brief the board very quickly on the status of Delaware's regulatory process and our legal process. I can do that quite rapidly. As you will recall, Delaware initially imposed a total harvest moratorium at the direction of Delaware's Department Secretary.

This harvest moratorium remained in effect for approximately half a year. It was challenged in court by some industry interests. The superior court judge decided last June 8th to overturn Delaware's horseshoe crab harvest moratorium. In so doing, that left Delaware with a dilemma of either being declared out of compliance with ASMFC, which was unacceptable, or imposing emergency regulations, considering that had we not done so, the fishery would have been in jeopardy of federal action to close that fishery.

So, emergency regulations were imposed, and those emergency regulations implemented the guidelines of Addendum IV for the Horseshoe Crab Management Plan; namely, the 100,000 male harvest scenario after June 8th of each year; no harvest prior to June 8th. Subsequent to that, when those emergency regulations sunset, we started the normal regulatory process, and that regulation was approved and signed by the Department Secretary.

So, Delaware's status at the moment is that the harvest for 2007 shall not exceed 100,000 males. The entire quota has not been taken yet. There is still an opportunity for horseshoe crab dredgers to fulfill the remainder of the harvest, which is approximately 40 percent of the allowable harvest is still yet to be taken, as well as 100,000 males to be harvested in 2008 in accordance with the ASMFC plan. That's the brief status of the Delaware process. I will call on Pete Himchak for a brief up date on New Jersey's status with regard to that same quota issue and harvest.

UPDATE ON NEW JERSEY'S REGULATIONS

MR. HIMCHAK: Thank you, Mr. Chairman, I'll be very brief. The process started in July of 2007 when our Endangered Non-Game Species Advisory Committee met. It is an advisory committee to the Division of Fish and Wildlife of New Jersey. They sent a letter to our Marine Fisheries Council requesting the Marine Fisheries Council's support for the continuation of a moratorium on horseshoe crabs in 2008 and thereafter until the biometrics are developed which will establish that we are meeting the needs of the shorebirds through surface egg counts.

Our Marine Fisheries Council met September 6th, and they were nearly unanimous in opposing the continuance of the moratorium. Nonetheless, the department has proceeded to develop a proposal for a continuance of the moratorium indefinitely. It will be in the New Jersey Register December 3rd for adoption May 17th, 2008.

Recognizing that our Marine Fisheries Council has a veto power over regulatory proposals, it will make the January meeting of the Marine Fisheries Council very interesting. I will report to the board in February as to where this proposal is headed for 2008. Our current regulations expire December 31st, so at the very least we would have to adopt the 100,000 male-only horseshoe crab quota for 2008. Thank you.

CHAIRMAN MILLER: Are there any questions from the board concerning either the Delaware situation or the New Jersey situation? Pat Augustine.

MR. AUGUSTINE: Thank you, Mr. Chairman. I think it's very noble for both states to continue along with their protection of the horseshoe crabs in their specific areas. We continue to face the problem in New York of a tremendous number of horseshoe crabs being transported out to supply the bait needs for your states.

I think in the future you'd better look very closely at depleting one area in order to protect another area. I guess what I'm saying is we think we need to look at a bigger picture and fair and equitable treatment for all states on this creature that is long-lived. Our bait industry is flourishing.

New York State has not and will not go over our quota, but our fishermen are taking advantage of an opportunity. In my mind, it's making money, but at

the same time it's depleting our stock of these creatures. So, I think you folks should take into consideration what effect that's having on the rest of the population. Thank you.

ELECTION OF VICE-CHAIRMAN

CHAIRMAN MILLER: Any quick, additional comments on either of those states' plans? Seeing none, we have more item of business. I believe that my tour of duty as chair of this particular board is drawing to a close. In recognition that Robert Boyles is our vice-chair of this particular committee, we probably should seriously consider today nominating a vice-chair to serve with Robert in the future of this board. John Nelson.

MR. JOHN I. NELSON, JR.: Thank you, Mr. Chairman. It just strikes that perhaps Spud Woodward would be a great vice-chair.

CHAIRMAN MILLER: John is nominating Spud Woodward from Georgia. Pat.

MR. AUGUSTINE: Thank you, Mr. Chairman. I would second that and move to close nominations and cast one vote for Spud Woodward. (Applause)

CHAIRMAN MILLER: Thank you, Pat, and thank you, Spud, and also thank you, Robert. As you know, Robert will be ascending to the chairmanship of the commission, so it's anticipated that his tour of duty on the Horseshoe Crab Board will be at most a year, and then Spud will take over after that, just so everyone understands the process that we're going to go through.

With that, I would just like to say thank you for supporting me this past couple of years as chairman of this particular board. It's been a learning experience. Going to court a couple of times in that two-year period also was a learning experience. It's been personally enriching and I wish the rest of the board every success. I look forward to moving back among you and participating in board endeavors. Thank you. (Applause)

MR. AUGUSTINE: Roy, we want to thank you for an excellent job of being chairman. You've taken the group through some pretty treacherous waters, and I think you did it very admirably, and you've set a high standard. Thank, Roy.

ADJOURN

CHAIRMAN MILLER: Thank you. If there is no further business and seeing none, we're adjourned.

(Whereupon, the meeting was adjourned at 9:35 o'clock a.m., October 30, 2007)