

**PROCEEDINGS  
of the  
ATLANTIC STATES MARINE FISHERIES COMMISSION  
HORSESHOE CRAB MANAGEMENT BOARD**

**May 21, 2002  
Swissotel Washington, The Watergate  
Washington, D.C.**

Approved February 26, 2003

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## **ATTENDANCE**

### **Board Members**

Lou Flagg, ME DMR  
Dennis Abbott, proxy for Rep Blanchard  
John Nelson, NH Fish and Game  
Paul Diodati, MA DMF  
Bill Adler, MA Gov Appointee  
David Borden, RI DEM  
Ernie Beckwith, CT DEP  
Lance Stewart, CT Gov Appointee  
Gordon Colvin, NY DEC  
Pat Augustine, NY Gov Appointee  
Bruce Freeman, NJ DFW  
John Connell, NJ Gov. Appointee  
Charles Lesser, DE F&W  
Eric Schwab, MD DNR  
Pete Jensen, proxy for Sen Colburn  
Bill Goldsborough, MD Gov. Appointee  
Jack Travelstead, proxy for William Pruitt, VA MRC  
Catherine Davenport, VA Gov. Appointee  
Louis Daniel, NC DMF  
Melvin Shepard, proxy for Rep. David Redwine  
David Cupka, SC Gov. Appointee  
Susan Shipman, GA DNR  
Ken Haddad, FL FWC  
Bill Archambault, proxy for Jaime Geiger, USFWS  
Paul Perra, NMFS

### **Ex-Officio Members**

Stewart Michels, Technical Committee Chair

### **ASMFC Staff**

Carrie Selberg  
Vince O'Shea  
Mike Howard

### **Public**

Jim Berkson  
Tom Meyer  
Eric Stiles  
Caroline Kennedy

Tom Fote  
Steve Barndollar  
Ernest Bowden  
Sam Swift  
Kelly Place  
Homer Bryson  
Dave Martin  
Perry Plumart  
Gerald Winegrad  
Desmond Kahn  
Rob Winkel  
Robert Abel  
Jed Brown  
Brad Andres  
Carl Shuster

**ATLANTIC STATES MARINE FISHERIES  
COMMISSION**

**HORSESHOE CRAB MANAGEMENT BOARD**

**Swissotel Washington, The Watergate  
Washington, D.C.**

**May 21, 2002**

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The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Monticello Room of the Swissotel Washington, The Watergate, Washington, D.C., Tuesday, May 21, 2002, and was called to order at 8:00 a.m. by Chairman Charlie Lesser.

CHAIRMAN CHARLIE LESSER: Good morning, ladies and gentlemen. This is the Horseshoe Crab Management Board. I am Charlie Lesser, Chairman. I don't think there is any need for introductions. We all supposedly know each other. Is there anybody new to the proceedings who would care to introduce themselves?

MR. WILLIAM ARCHAMBAULT: I'm Bill Archambault with the Fish and Wildlife Service, and I'll be representing Dr. Geiger today.

CHAIRMAN LESSER: Thank you. Anyone else? Go ahead, Brad.

MR. BRAD ANDRES: Brad Andres with the U.S. Fish and Wildlife Service, coordinator of the Shorebird Technical Committee.

**Approval of Agenda**

CHAIRMAN LESSER: Anyone else? On the agenda, does everybody have a copy of it? Are there any additions or deletions or modifications anyone would like to make to the agenda at this time? Seeing none, we'll proceed as is.

**Approval of Proceedings from April 2001**

On the minutes of the last meeting of April 2001, are there any comments? Move, they're accepted.

MR. WILLIAM A. ADLER: Bill Adler moves they be accepted.

CHAIRMAN LESSER: Pat Augustine seconds. Any discussion? All those in favor; opposed; not voting. The aye's have it. At this time, we would like to entertain any public comment. Is there anyone from the public who would like to comment on the record? Yes, sir, speak your name, please.

**Public Comment**

MR. ERIC STILES: I'm Eric Stiles and I'm with the New Jersey Audubon Society. I guess I'm here to make friends this morning. I appreciate the opportunity to read my remarks this morning regarding horseshoe crabs and shorebirds.

I am speaking today on behalf of New Jersey Audubon Society and its 20,000 members. My comments are based on the following documented facts.

Nine species of shorebirds, including the New Jersey state threatened red knot, feed on horseshoe crab eggs on Delaware Bay beaches during their spring migration. The egg-rich diet is needed to gain sufficient weight to migrate north to their Arctic breeding grounds.

Shorebirds rely on a superabundance of reproductive age class horseshoe crabs to produce and excavate enough eggs for this weight gain.

There has been a 54 percent decline in the number of wintering red knots in Tierra del Fuego, South America, since 2000. In 2002 researchers counted 20,755 red knots. This is a 30 percent decline from 2001 and a 54 percent decline since 2000.

Similarly, many shorebird species have shown a significant decline on the Delaware Bay. The number of red knots counted on the Bay is decreasing by 17.9 percent per year. Horseshoe crab egg counts on the Delaware Bay show an alarming decline in the amount of horseshoe crab eggs available to foraging shorebirds.

This is consistent with Delaware survey trawl data, showing a 75 percent decline in horseshoe crabs in eleven years. That's from Stu Michels' master's thesis.

Studies show daily weight gains of red knots and semipalmated sandpipers have dropped precipitously. The disappearance of the horseshoe crab eggs is the culprit. In fact, many birds are leaving the Delaware Bay without enough fat reserves to reach the Arctic breeding grounds.

Harvesting is allowed to occur even though no stock assessment has been completed for this species. Therefore, we are harvesting in the absence of sound science.

Based on these findings, we humbly ask the commission to support to following measures and aggressively pursue funding to support the stock assessment being conducted by Dr. Berkson at VPI. It's my understanding that he will require at least \$100,000 in funding for 2002. We feel this work is critical to a sound fishery management plan for the horseshoe crab.

Second, we would ask that you consider aggressively pursuing continued funding for alternate bait research for eel and conch. Once a viable alternative is identified, we would encourage the commission to seek immediate sources of funding for its production and distribution.

And, lastly -- and this is where I get to make friends - - we would ask that you consider adopting an interim horseshoe crab harvest moratorium on the Delaware Bay population until a fisheries management plan is drafted.

In our opinion, the plan needs to be based on a scientifically rigorous stock assessment and should include sustenance of horseshoe crab spawning needed to support the shorebird migration. I greatly appreciate the opportunity to address this commission on this important matter and thank you for your time.

CHAIRMAN LESSER: Is there anyone else who wishes to make a comment? Seeing none, we'll proceed with the agenda. Technical Committee report, Stu Michels.

**Technical Committee Report**

MR. STEWART MICHELS: Thank you, Charlie. The Technical Committee met March 5th in Baltimore, Maryland. Greg Breese was nominated and unanimously elected vice chair. He will be taking over the chair duties after this board meeting.

The committee received an update on research initiatives from Dr. Jim Berkson. He gave a presentation on the benthic survey, which you all will be privileged to hear here shortly.

The Technical Committee was very impressed with the accomplishments of the pilot benthic trawl survey project, and the researchers are prepared to move forward with a survey pending some guidance from the stock assessment committee and, of course, funding.

The Technical Committee recommends that the survey remain a top priority. It's absolutely critical to our future stock assessment needs, and it may serve as an excellent monitoring tool until such time that a formal stock assessment can be completed.

Some researchers gave us an update on the aerial videography portion of the state challenge funds. The night aerial videography work would be used to augment the current Delaware Bay spawning survey.

They tested various camera and lens configurations and settled on a configuration that they thought would provide an area-based estimate of spawning activity. They're seeking funding for May. In talking to Dr. Berkson here, I think that they do have a little bit of funding to begin some field testing here in the next week or two.

Researchers from Virginia Tech have also completed some tagging work. This is in partnership with Biowhittaker, and the results indicated that bled crabs held for two weeks had an increased mortality of about 7.5 percent.

In addition, using some relative age criteria, it appeared that over three years of the study demographics indicated younger crabs in the area of Chincoteague and there tended to be fewer females off Ocean City. I guess Biowhittaker is going to fund a continuance of this work for the next three years, which is very encouraging.

Dr. Tim King with the U.S.G.S. gave us an update on his genetic work. That's also part of the challenge fund money. Dr. King still needs some samples from New York, North Carolina, South Carolina, as well

as the Yucatan.

The Technical Committee recognized the importance of this work for our stock assessment needs. Anything that any of the board members can do from those states, New York, North Carolina, South Carolina, to facilitate procurement of the samples would be greatly appreciated. Dr. King hopes to complete the work by the end of the year, although he may publish parts of that work before then.

Dave Smith gave us an update on the Delaware Bay spawning survey. Between 1999 and 2001, there's really no trend. In the survey, however, it's difficult to make any conclusions about the population based on such a short time series.

The survey continues to operate through the efforts of numerous volunteers. The state of Delaware is funding the Delaware Bay spawning coordinator this year and probably will do so next year.

The state of New Jersey continues to handle the data entry and the state of Maryland has provided some volunteers; and just so the board is aware, there's numerous other studies that are being conducted.

We have some size-specific fecundity work being done by a grad student in Delaware. There's a study looking at the effects of beach replenishment on horseshoe crabs. The U.S. Fish and Wildlife Service is doing an intensive tagging study looking at spawning beach fidelity.

There's some underwater acoustic work that's going to be done, looking at horseshoe crab movements and concentrations, and some shorebird energetics work, which is being funded by the states of New Jersey, Delaware, and the U.S. Fish and Wildlife Service.

In terms of other research needs, the technical committee discussed the importance of a coordinated horseshoe crab tagging program. There currently are several studies underway that would benefit from this coordination and the technical committee would like to revive the horseshoe crab tagging group, which would outline objectives and protocols for tagging horseshoe crabs along the coast.

Biomedical issues that we discussed, we would like to have the biomedical harvesting questionnaire,

which has been sent out at least twice prior to this, once again sent out to these companies. The biomedical companies have been very cooperative in providing information to the technical committee in this format. The technical committee, however, is concerned about accounting for mortality up to the point of bleeding.

The state of Maryland apparently has a reporting form that's been useful in this regard, and the technical committee member from Maryland will provide the rest of the members with this form to allow for better tracking of crabs that were rejected and the disposition of those crabs at each transfer point.

We also discussed the issue with the FDA and their permit requirement to return bled crabs to the waters from which they were taken.

As you may be aware, the FDA agreed last year that jurisdiction should lie with the states or with the commission. However, we never did receive anything formal in writing from the FDA, and Carrie and Peter Himchek are going to follow up on that and see if they can get something in writing.

We had an update on the status of the Shorebird Technical Committee from Brad Andres. Greg Breese is going to be taking over as chair and he already sits on this technical committee.

I am currently on that technical committee as the chair of the Horseshoe Crab Technical Committee and we wanted to get the board's direction on if it was wise to have me continue to serve as a liaison between the Horseshoe Crab Technical Committee and the Shorebird Technical Committee or to allow Greg to do this.

In terms of landings, reported coast-wide landings declined by about 66 percent relative to our reference period landings. We were very encouraged by this; and when we queried the technical committee members to find out what exactly was the cause of this, they indicated that there's no signs -- no one was aware of any bait shortages being encountered or any difficulties that horseshoe crab harvesters are having in obtaining crabs.

Everyone agreed that the bait bags were probably

largely responsible for this, the widespread use of bait bags along the coast, particularly in states such as Virginia.

We did note that New York had an overage in their quota, but New York, in their state plan, I think, now has in place the regulations to prevent any subsequent overages and they have agreed to reduce their landings by the necessary amount.

In reference to reporting requirements, the fishery management plan requires a characterization of our commercial catch, and one of the questions that arose was how useful is this. A lot of states are having a difficult time in characterizing their catch. It's difficult to intercept horseshoe crab landings often because they don't typically go through dealers. Many of the transactions are arranged between fishermen.

There doesn't seem to be a central clearinghouse, if you will, for these crabs. The plan calls for us to characterize these landed crabs by gender and by prosomal width.

We're not sure if it would also be a good idea to also collect weight data from individual crabs. After some discussion, we decided to turn the matter over to the stock assessment committee for guidance on how this information should be collected, give us some idea of how many samples or what proportion of our landings we should be subsampling, and what information should be included.

Finally, Carrie gave a summary of what needed to be done for Addendum III, the possibility of another addendum to deal with the law enforcement reporting requirements. The technical committee agreed that the current law enforcement reporting requirements were very time consuming and cumbersome and that we need to give this matter the attention that it deserves.

We thought that the law enforcement folks could make better use of their time if we had a much simpler report and not required individuals to log each hour that they spent on law enforcement issues regarding horseshoe crabs. That's it, Charlie.

CHAIRMAN LESSER: Thank you, Stu. Any questions for Stu from the members of the

board? Bruce.

MR. BRUCE FREEMAN: Thank you, Mr. Chairman. I had a couple questions. Stu, let me just go through these the way you went through them. On the horseshoe crab survival, the work that was done, the 7.5 percent mortality was what occurred in the bled crabs as opposed to those which were just held, is that correct?

MR. MICHELS: That's correct.

MR. FREEMAN: Okay. The spawning survey, the Delaware Bay spawning survey, we continue to hear, at times, reports from people referencing spawning surveys done prior to '99, and it's my understanding, Stu, that the committee that looked at this indicated that because of various inadequacies prior to that time, although there was a lot of effort expended, that data really could not be used, at least in any statistical sense, because of the way it was changed and collection over a period of time. So the base we're using with any scientific validity only extends back to '99; is that correct?

MR. MICHELS: That's correct.

MR. FREEMAN: Okay. A comment on the shorebird liaison. Personally, I think that's going to be an extremely important aspect of keeping appraised of the shorebird subcommittee. You indicated there were two options, you being liaison or someone else, but I just feel that position is extremely important, at least for the next several years and I don't know, Charlie, if you need any action taken or whether in fact that's an issue that you can resolve as chairman, but that certainly should occur.

CHAIRMAN LESSER: Protocol wise, I'm not sure whether an action is required. I personally would very much like to see Stu remain on as liaison because he kind of ground his teeth on this issue.

He's been carrying it through for us in Delaware ever since and we would like to continue in that forum. So, Vince, do you think that board action is necessary or should I just so move?

MR. FREEMAN: Well, I think you could do it as your prerogative as chairman. I just think it

needs to be done, and I'm somewhat ambivalent, but I just want to make sure that action is taken.

CHAIRMAN LESSER: Without objection, then, I will do so if it meets with everyone's approval. Seeing none, Stu, welcome aboard again.

MR. FREEMAN: And then I have one last question, Stu, on the landings. We were pleasantly surprised to see the reductions in 2001 that were considerably less than what was required in the plan. Is there any indication from any of the states that there's any loss of accuracy this year?

MR. MICHELS: I haven't heard any.

MR. FREEMAN: Okay, I haven't either and I'm just curious because the news is quite gratifying, and I'm assuming, at least in our experience, that the use of bait bags has had a tremendous impact of the reduction of the need for more crabs, and we attribute our reduction to this. It appears that's true of other states.

MR. MICHELS: Bruce, I've spoken to a couple fishermen in Delaware who have gone to using bait bags in the conch fishery, and they said it's made an incredible difference in the amount of bait they use. They can get at least three times as many baits from the same amount of crabs, and that's a minimal estimate.

CHAIRMAN LESSER: Just a footnote to add to Stu's. Some of the same fishermen that we've had contact with, there seems to be a socioeconomic thing at play here where the supply-and-demand theory has really kicked in.

When we had this rush of everybody into this fishery back in 2000 and '99, the price was escalated beyond what we ever thought it could be. It was 65 cents for males and like a dollar and a half for a female.

And everybody, whether they knew the horseshoe crabs or not, was collecting, everybody. Everybody wanted in. Now that the demand has kind of been met, the price has come down considerably where it's down to about 35 cents for a male and maybe 50 to 65 cents for a female, and the rush to get into this fishery is not there any longer.

So people that were collecting in excess in hopes of making a dollar are not in the fishery. We're seeing more now where the fishermen themselves are collecting what they need and that's it. So I think the supply-and-demand thing has played a lot into this one. Without that price factor in the market, the fishery has come back to a more reasonable level. Paul.

MR. PAUL PERRA: Paul Perra with the National Marine Fisheries Service. To Bruce's question, I had done recently a phone survey with a number of the technical committee members to follow up on some of the issues and the impact of the closed area that we put in off the mouth of Delaware Bay.

They attributed the dramatic drop in landings to the use of bait bags and in particularly the Mid-Atlantic area, the implementation of the closed area.

CHAIRMAN LESSER: Anyone else have comments? Jed.

MR. JED BROWN: Jed Brown, U.S. Fish and Wildlife Service. I have a question for Stu. I was wondering if the technical committee has ever looked at or made any recommendations about the just flip them campaign because we get asked questions on that, and I don't know if it's actually a good thing or a bad thing for the resource and for stomping on eggs or if it interferes with the birds and that type of thing.

MR. MICHELS: Yes, we've never dealt with that at the technical committee level on a state issue. What Jed's talking about is there's a research and development group in Delaware who encourages folks to go out on the beaches and flip horseshoe crabs that have been stranded on the beaches back over and release them back to the water.

As a state, we're a little bit uncomfortable with that in that we don't like to encourage a bunch of folks being out on the beaches when the shorebirds are around because it disturbs the shorebirds. They fly up and they don't get to feed as sufficiently as would be otherwise. We haven't dealt with that on the technical committee level.

MR. BROWN: It might be useful to address

that because we do get asked questions about whether this is an effective tool for revitalizing the flipped-over horseshoe crabs or not.

CHAIRMAN LESSER: There's two items that Stu brought up that I think the board should give consideration to. Is there any objection to the tagging subcommittee being reactivated, as Stu pointed out? All right, Stew, without objection then, you can proceed along with that one.

The other thing, is there any objection to resurrecting the biomedical survey to reascertain the aspects of that? That was one of the technical committee's requests? See any objection? Without none, Stu, proceed with that one.

That concludes the technical committee. The pilot benthic trawl survey report, Dr. Jim Berkson.

#### **Pilot Benthic Trawl Survey Report**

DR. JIM BERKSON: Good morning. I would like to thank you all for the opportunity to present this information to you today. I'm going to give you a brief presentation about the work we've done on this benthic trawl survey.

The organization for this talk, I'm going to first go over the need briefly, talk about the pilot study we did last year, talk about what we want to do in 2002, our plans for 2003 and beyond, and then a real brief illustration of the importance of this work.

So let's start out with the need. The Horseshoe Crab Technical Committee repeated today that the annual benthic trawl survey is the most important information need we currently have.

It is required to conduct a stock assessment and currently managers still lack the ability to manage this population based on science. We need to do a stock assessment. We need the benthic trawl survey in order to do that.

I'll tell you about the pilot study in 2001. This was funded by the states of New Jersey, Delaware, and Maryland, along with the National Fish and Wildlife Foundation through ASMFC.

Two goals in this process; one, to test the feasibility of a benthic trawl survey. Could we even put one together and do one that makes sense? And then,

two, if so, could we develop a protocol for an annual study?

I'm happy to say that we did test the feasibility and it's very feasible to do this survey. Secondly, we have put together a protocol that can be used next year and in subsequent years.

I'll give you a little bit of detail about how we did the survey and a little bit of the results. We've got a lot more information, but I'm trying to keep things very brief today. I'll be happy to give you more information if you come up to me and give me some contact information.

The survey area was from above Cape May, New Jersey, to below Ocean City, Maryland. It went from shore out twelve nautical miles. You can see the map there. The little dots and squares and triangles and diamonds represented places where we did the trawling. It was all randomized.

We divided the area into grids, one-minute latitude by one-minute longitude. Each grid fell into a treatment combination. We looked at inshore versus offshore and we looked at trough versus non-trough.

The fishermen told us that the crabs were much more abundant in the troughs, so we wanted to test for this because we had been hearing this for years and there really hadn't been any studies that we knew of that really looked at this.

Then each grid was sampled both during the day and at night. We wanted to look at the efficiency of day sampling versus night sampling. We did a total of 96 tows over 16 days. We used a 55-foot commercial trawler.

We used the gear typically used to catch horseshoe crabs. That's a Texas sweep modification of a flounder trawl. We did 15-minute tows and all the horseshoe crabs brought on or a subsample of them were measured, sexed, and checked for maturity level.

Using an analysis of variance, we checked all the horseshoe crabs. The depth was definitely significant. There were more horseshoe crabs inshore than offshore. In terms of topography, the

fishermen were right, which shouldn't surprise anyone.

They're more abundant in troughs than outside of troughs. Time of day was also significant. They were far more abundant or available to the gear at night than during the day. We have population estimates that we were able to get from this brief trawl survey for this study area, the mean population estimate that would be available to the gear.

That means they have to be the right size and they have to be out and available. The mean estimate is 11,400,000. The confidence interval goes from 5.9 million to 16.8 million, a wide confidence interval.

Given the uncertainty we have with this species and how little we understand their population dynamics, it may be prudent at this point to be looking at the lower confidence intervals as a precautionary. It's just something to keep in mind.

We also were able to set up a protocol for future trawl surveys. Sample size really requires on the time of day you're going to look at and the group, whether you're just looking at mature females or all horseshoe crabs, for instance.

But to obtain a coefficient of variation of 20 percent, we discovered that if you were going to do this during the day, you would need to do 81 stations. If you were going to do this at night, you would need only 53 stations.

So it's much more efficient to do this at night than during the day. We also were able to break this up into our four treatment groups, inshore versus offshore and trough versus non-trough.

So we know how many samples to take in each one of those four categories, and this is if we were doing the night sampling, this is how we would break it up to get our 53 total samples.

This is how we would go about doing the trawl survey in 2002 and beyond if we wanted to continue doing that same study area. Now, we could expand it.

If we wanted to do a bigger study area, the good news is the required sample size, for a given level of

precision, does not increase in proportion to the study area.

One example is if you increase the study area fourfold, the sample size required only goes from 53 to 55 stations. Now that assumes that the crabs are behaving and available in all of those other areas the same way as in the area we surveyed.

It assumes all the other assumptions hold, and so probably the first year we would want to do a little bit more than that just to make sure that the assumptions did in fact hold. But this is very encouraging about trying to do this survey.

It is possible to estimate costs. Primary cost is time where everything can be seen as a function of time. You need to look at your survey area, your number of stations, the time spent at each station, and the travel time between stations.

We did this given last year's survey. We knew the area, we knew the number of stations, we knew the time spent at each station, and the travel time between stations. We predicted that it would take 3,400 minutes to do the survey, and in fact it took 3,800 minutes.

So if you're trying to figure out how much fuel you're going to need, how much time you're going to need to charter a boat, and with the crew and travel time and lodging for your study people and all that kind of stuff, this can be estimated, and we estimated quite effectively.

Let me tell you about 2002 now and what we would like to do. This trawl survey can be conducted in 2002. It would provide a second point in the time series. You saw how we were able to get population estimates from last year's survey.

It's very hard to tell whether the population is increasing or decreasing based on one point. Two points would be a big plus.

Given the wide variances, we may not still know exactly whether the population is going up or down with just two points, but at least it would be moving us in the right direction where would be able to make that kind of decision.

We're estimating that the cost would be between 80

and \$100,000 for this coming year. The range is dependent on the indirect rate that would be negotiated between the funding agency and the university. So there is a range there.

No funding at this time has been identified. This remains the most important research need regarding horseshoe crab management. I'll point out many of the other studies that are currently being conducted were never prioritized.

If they had been prioritized, they would have been prioritized below the trawl survey, it's very likely. So other studies are taking place.

I'll tell you about 2003 and beyond. There is a congressional proposal from the Virginia congressional delegation to fund horseshoe crab population dynamics research that's currently been submitted.

This would be new funds, not reallocation. We're not taking money away from any current programs to do this. We've been asking for \$700,000 per year for five years. This would begin in fiscal year 2003 so that this does not help us for this year's trawl survey, but it would help us for the next five after that.

This money would cover four studies: one, this benthic trawl survey and being able to greatly expand the area of coverage; two, it's a telemetry study to better understand the crabs and their movement and where they are; the aerial videography study, which would supplement the spawning surveys.

Also, this would enable us to extend these spawning surveys beyond the areas where we have sufficient volunteer coverage. So you're looking at more than Delaware Bay could be covered with the aerial videography.

I'm happy to say that with the help of National Geographic, we will be testing the aerial videography survey. We will be doing a pilot study this weekend around Delaware Bay, where we'll have people on the ground and in the plane.

We'll be able to compare ground counts to aerial counts for the first time and see how well this will work. And then we're also talking about a large habitat shorebird/horseshoe crab study.

All of these studies would be coordinated with the technical committee, with the help of the technical committee. Obviously, if we could get support from ASMFC on this, it would be extremely helpful.

A quick illustration of the importance of this study. The 2001 pilot benthic trawl survey provides estimates of relative abundance. The reference period landings were 3 million horseshoe crabs coast-wide.

The preliminary coast-wide landings for 2001 that I've seen are about 1.01 million. The harvested adults each year have to be replaced by recruits to keep the population size constant. That's just basic biology.

If you've got something being taken out, they've got to be replaced with something. The mean estimate of newly mature horseshoe crab abundance that we got from our survey, just in the Delaware Bay area, is 1.07 million.

That means if last year 1.01 million were taken coast-wide, this mean estimate is that 1.07 were available to replace those, just in the Delaware Bay area alone, somewhat encouraging. But if we look at the conservative, lower confidence limit abundance estimate, given our uncertainty in this whole system, that's 259,000 newly mature horseshoe crabs in the study area.

Keep in mind during the peak years the harvest was 600,000 in Maryland and Delaware alone. So, obviously, we still have a lot of uncertainty as to what's going on with the population and what the sizes are, and one year's pilot trawl survey is not going to solve that.

I think this is a very good illustration of why this work needs to continue. I'm happy to say that these cost estimates are roughly about 10 percent of what I heard most people say prior to us doing this work.

I think people were expecting the cost estimates to be a million or more to do an annual trawl survey, and we've found a way to keep those much, much lower. So once again, I would like to thank you for your time, and I would be happy to answer any questions you may have.

CHAIRMAN LESSER: Pete, you have a question?

MR. W. PETE JENSEN: Yes, just a question of curiosity. Is there a hypothesis on why the crabs are more available during the night than day?

DR. BERKSON: Dr. Shuster is probably the best person to ask here, but my understanding is that it's because they tend to bury themselves deeper during the day and they're not available to the gear during the day.

CHAIRMAN LESSER: Bruce.

MR. FREEMAN: Thank you, Charlie. Jim, you talked about the aerial counts. If I recall some of the original work you did, I guess last year, there were some difficulties with the aerial counts, particularly at night. Has that now been resolved? Are there ways of getting around that?

DR. BERKSON: We currently have a much better understanding of how we would like to do the aerial counts. We've tested a lot of different gears, a lot of different cameras, a lot of different night scopes.

We have a much better sense of what will work and what won't work. This weekend we're taking our best guess as to the equipment, the most appropriate equipment actually in a plane and flying over. We'll have a much better idea as to how feasible this is at the end of this weekend. We think it's a workable process.

MR. FREEMAN: And one other question concerning the trawl survey. Was there any relationship between juveniles and adults in your survey relative to distance from shore? Was it primarily your getting -- well, I'm just curious what you're getting adults as opposed to juveniles proportion.

DR. BERKSON: We do have that information. I don't have it on the top of my head, so I will look it up and get that information to you.

MR. FREEMAN: Good, thank you.

CHAIRMAN LESSER: Eric.

MR. ERIC SCHWAAB: What would be the point at which we would have to know whether we had funding or not to move forward for 2002?

DR. BERKSON: Well, we would expect this survey to take place in September or October, just like we did last year so they're comparable; and to have everything in place for the university and our people on board and everything, obviously the sooner the better. I would think we have about another month to six weeks before we sort of have a date where it's not going to happen.

CHAIRMAN LESSER: Lance.

DR. LANCE STEWART: I wonder if you've had any comparative data on the incidence of burial horseshoe crabs and the availability or the reliability of aerial counts; some sort of estimate on how much they do submerge in the sediment and a correction on your physical indices and especially the night/day behavioral variation seems to be a --

DR. BERKSON: We don't have that information as of yet. One of the key things we're trying to do with the aerial survey is not count actual numbers because that would be too difficult if you think about five crabs on top of each other in a little mound.

You're not going to be able to get that from an airplane. What you are going to be able to get is the area of coverage, and so we would use the area of coverage from the aerial survey as a relative index to population spawning. If we can connect that with the ground counts, then we can actually turn that into some numbers.

DR. STEWART: I was thinking in terms of verifying the ground count as an added index of buried horseshoe crabs that aren't available to the trawl survey so that your estimates could be amplified.

DR. BERKSON: I think that's a very good idea and we would look into that.

CHAIRMAN LESSER: David.

MR. DAVID V.D. BORDEN: Thank you, Mr. Chairman, a couple of questions. One, that gear used in the pilot project, it's Texas trawl gear, is that correct?

DR. BERKSON: It's a modified flounder gear that's colloquially called the Texas sweep.

MR. BORDEN: Okay, but do you have a description of it -- I mean, not to provide me at this point. I would just be kind of curious, just from the perspective of if states wanted to use their existing trawl vessels, and it would be desirable to have states do that, I would think, and use the same net and then start doing stratified random towing within state waters.

There may be a possibility to expand it to some other areas. As a follow up to that, the study area went out to 12 miles, as I understand it? From the fishermen that you spoke to, how dense are the crabs seaward of that boundary, any idea?

DR. BERKSON: My understanding is the further offshore you get, the lower the densities.

MR. BORDEN: Okay, but there are crabs that are seaward of that, as I think we all know. The next question is in terms of the study area, what percentage of the overall geographic range of the resource does it comprise?

DR. BERKSON: Well, you know, I don't have percentage off the top of my head. Obviously, if you're looking at Cape May down to Ocean City, it's relatively small compared to Maine to Florida.

In terms of the densest distributions of crabs, largest numbers, I think you're getting a lot of it right there. That's why we want to expand the trawl survey. I don't think we can be happy looking at coast-wide management with just the trawl survey of this area.

MR. BORDEN: And I guess the last point is on the funding that's been requested, would that funding go to the state of Virginia or would it go to another organization if it's appropriated by congress?

DR. BERKSON: That money would go to the National Marine Fisheries Service, is my understanding, and then that would come to Virginia

Tech through the National Marine Fisheries Service.

MR. BORDEN: Okay, thank you.

CHAIRMAN LESSER: Pete, you had your hand up.

MR. JENSEN: A follow on to David's line of thought. The population estimate that you came up with, 11 million, is zero to three, Maine to Florida, right?

DR. BERKSON: Pardon me, I'm sorry?

MR. JENSEN: The population estimate is zero to twelve, Maine to Florida?

DR. BERKSON: No, it's just for the study area that was on that map.

MR. JENSEN: Okay, so it's 11 million only in that area. It doesn't account for any estuary populations like Delaware Bay and Chesapeake Bay; all of those are outside the survey?

DR. BERKSON: It doesn't count for the Bay and it doesn't count for north or south of the study area or further out to sea.

MR. JENSEN: Or seaward of that and that was my next question. We were handed out a diagram of a sled mechanism for continental shelf measurement on horseshoe crabs. How is that going to be part of the research program for that twelve to the continental shelf area?

DR. BERKSON: That was not my handout. I believe that came from Dr. Shuster, and we have not talked about incorporating that into the trawl survey at this point.

MR. JENSEN: It seems rather relevant to me to getting population estimates.

DR. BERKSON: Well, we are committed to coordinating this with everyone involved in the horseshoe crab research and management process so that this can be the most effective study possible for improving management.

CHAIRMAN LESSER: Any other questions

of Dr. Berkson? Susan.

MS. SUSAN SHIPMAN: I'm down here in the South Atlantic. Thanks, Charlie. I wanted to ask Jim, I guess, what the status of their proposal is with their delegation, with the congressional delegation. Where does that stand and where is it in the pipeline, so to speak, before any of the appropriations committees?

DR. BERKSON: My understanding is that it has been submitted by Senators Warner and Allen to the Senate subcommittee that deals with these appropriations, and it's been submitted by Congressman Belcher to the House subcommittee that deals with these appropriations.

That is before those subcommittees now, so if ASMFC and/or the individual states could provide support for this proposal, that would greatly help us.

MS. SHIPMAN: Charlie, if I may, this is a very worthwhile endeavor. It would certainly help management of this species along, and I would certainly encourage us to go on record, even if it's through a letter or whatever is appropriate, that the commission or this board or whomever, whatever appropriate body, does support this proposal and would encourage congress to fund it. It will certainly get us a long way, I think, towards horseshoe crab management on the east coast. I certainly will contact our delegation and encourage them to render support for it and I would hope everyone would.

CHAIRMAN LESSER: To Susan's comments, that is one question we would like to put to the board, the appropriate way to support Dr. Berkson's efforts. Would a letter from the commission to -- who would be the best recipient?

DR. BERKSON: My understand is that Congressman Frank Wolf, who heads the House subcommittee, and Senator Ernest Hollings, who heads the Senate subcommittee, those would be the two key people to receive that letter.

CHAIRMAN LESSER: Gordon.

MR. GORDON C. COLVIN: Two points, Charlie. One is that I think in order to facilitate

support, it would be useful for a memorandum or a letter to come from the board chair to the state commissioners outlining the need and the process. That will enable us to work within our states to explore the potential for securing support. The other question I wanted to raise was whether there were specific recommendations coming forward from the staff or others of our support here with respect to funding for the proposed work for this year?

CHAIRMAN LESSER: Would staff like to comment to Gordon's question?

MS. CARRIE SELBERG: I'm sorry, Gordon, I don't understand your question. Am I aware of funding that's coming forward for this year?

MR. COLVIN: No, that's not my question. My question was I heard, I think, from both the technical committee, and the report we just got, that there's a need for funding on the order of \$100,000 for work this year, and that funding is not identified.

My question is, is there a recommendation from the staff or the technical committee about where that funding may come from?

MS. SELBERG: The plan review team and the technical committee have both supported the work, have indicated that there should be funding, but have not identified where that funding could come from for this year.

MR. COLVIN: Mr. Chairman, is it worth spending a few minutes this morning discussing that issue, and I'm not sure whether others may have suggestions. I wonder whether any of the states have given thought to the application of some of the state wildlife grant funds that are becoming available to us now for support of this nature.

And, for instance, as we have done in the past with things like striped bass, a multi-state support program based on the use of that Fish and Wildlife Service grant funds might help us. I throw that out fully aware that I can't commit that money for New York state, but I can certainly commit the state to consider it if there's a desire to see a multi-state effort.

CHAIRMAN LESSER: Comments to Gordon's comments? Eric.

MR. SCHWAAB: I think from Maryland's perspective, that's exactly where we would look to get a portion of the funding to support that. I don't know if, Gordon, you have in mind whether there's a multi-state component of that.

I know that state-specific funding would be a place that we would look to come up with a share. I would like to hear more about the multi-state.

MR. COLVIN: Well, what we've done in the past, in very broad terms, is that the commission has served as a vehicle whereby a group of states, in this case as many as fifteen states, could provide funding from their grant to the commission, who would then pick up the entire grant management as a single entity.

It would require a little bit of work to put it all together, but it could be done and it would not be particularly expensive for any of the individual states under that kind of a scenario.

CHAIRMAN LESSER: Other comments to Gordon's idea? Could we get an indication of how many people might want to pursue this avenue -- Maryland, New York, New Jersey, Delaware, New Hampshire. I'll generate a letter, Gordon, to the states requesting their participation and some of the ideas that Dr. Berkson has expressed to us and the need for it. John.

MR. JOHN I. NELSON: Charlie, it would probably be appropriate also if there's a number of private groups that have an interest in this, then we might want to send a letter to them explaining what we're trying to do and encouraging them to participate in that effort.

CHAIRMAN LESSER: Good idea. Any other comments on the funding? Susan.

MS. SHIPMAN: Just a question. On the trawl survey for this year, Jim, can you clarify for me, is that to repeat it in that same area or is it to expand it? I'm sorry, I missed that earlier.

DR. BERKSON: The proposal we currently have is to repeat it in a more statistically efficient manner but using the same study area. If funds were

available, we certainly could talk about expanding it and adding additional area. We would be happy to just repeat it.

MS. SHIPMAN: I think that might be worthwhile. I would certainly be amenable to pursuing with our non-game program use of some funding, but I'm not sure they will want to fund a trawl survey up in the mid-Atlantic or New Hampshire, for that matter, John.

CHAIRMAN LESSER: Bruce.

MR. FREEMAN: Charlie, if we are done discussing the funding for this year, it seems to me appropriate that there should be an action taken by this board to bring forth to the full commission a letter in support of the federal legislation.

CHAIRMAN LESSER: That's what my next comment was going to be if there's no objection.

MR. FREEMAN: I don't want to cut off the discussion relative to 2002 funding. I think that's extremely important. But it seemed to me that was kind of toning down; and if that's true, then I would make a motion that this board bring forth to the full commission the request to support the federal legislation. Jim, do you have a bill number for that?

DR. BERKSON: No, I can provide details. It's basically an appropriations request for horseshoe crab population dynamics research for the National Marine Fisheries Service.

MR. FREEMAN: All right. Well, whatever the appropriate bill number is, then request the commission support that in a letter. Now, I do that -- and also I believe, Charlie, it would be extremely important for each individual state to do what it can as well.

As indicated, South Carolina is a key appropriations member and I'm certain that -- I don't know if David's here or not, but they may be very influential in convincing the chairman to raise this issue at the committees.

CHAIRMAN LESSER: Bruce made a motion. Is there a second to the motion? Dave Borden seconded. Any discussion on that motion?

Carrie, could you repeat the motion? I got bits and pieces of it.

MS. SELBERG: I have bits and pieces, too. They don't make a complete thought. Move that the board bring forth to the full commission a request to support in a letter federal legislation, and then we need a little more details with the federal legislation.

CHAIRMAN LESSER: Horseshoe crab research. Does that capture it for everybody? Further discussion? Jed.

MR. BROWN: Would this group have the opportunity to review that letter before it went forward?

CHAIRMAN LESSER: Probably not. We couldn't have a conference call or anything on it. Staff would probably draft it.

MR. BROWN: Just like an e-mail or --

CHAIRMAN LESSER: You could be e-mailed a copy, I'm sure.

MS. SELBERG: How about just for those board members who are interested, let me know and I'll make sure that you have an opportunity to see that so that I don't have to get it to everybody.

CHAIRMAN LESSER: Bruce.

MR. FREEMAN: To that point, I think these motions in the past have essentially given the executive director the charge to do that; and whatever language is appropriate, the staff can come up with that. It's been successful in the past.

CHAIRMAN LESSER: Right, we have faith in the new director. Any other comments? Any opposition to that request? Seeing none, the motion passes.

I guess that completes Dr. Berkson's presentation. We can move onto the next item, the plan review team report. Carrie.

#### **Plan Review Team Reports**

MS. SELBERG: On the briefing CD, the plan review team included both a state compliance report and an FMP review. I'm going to start by talking about the state compliance report and then I

will talk about the FMP review.

The state compliance report, all reports are due by February 1st. All of the state reports that we received are on the briefing CD. I also have copies here today for those of you who would like hard copies.

All jurisdictions did submit an annual report. The PRT has reviewed each of those and in the state compliance report there is a chart on each state. I'm not going to step through each chart, in the interests of time.

For those of you who are interested, those are in the state compliance report. After reviewing each of the reports and the many compliance measures, the PRT does not recommend finding any states out of compliance.

We have a couple of things we would like to note. New York did exceed their quota in 2000 and 2001, and their overage will be deducted from their 2002 quota. New York has some new reporting requirements being implemented, which the plan review team does believe will help this problem from occurring in the future.

As Stu mentioned in his technical committee report, many states are not characterizing their fishery as required by the FMP and are instead substituting trawl survey data.

The plan review team and the technical committee have discussed this issue with the states who are doing this, and they've referred it to the stock assessment subcommittee to make sure that we are collecting the most appropriate information for future stock assessments.

I'm not going to read them all, but all these states have requested *de minimis* status and it's Maine, New Hampshire, Pennsylvania, D.C. Potomac River Fisheries Commission, North Carolina, South Carolina, Georgia, and Florida.

Each state which requested *de minimis* status does qualify for *de minimis* status, and the plan review team does recommend granting *de minimis* status for those states.

I'm going to go ahead and move on to the FMP

review. The FMP review includes many topics which have already been discussed today, so I'm not going to review those.

There are a lot of things that the technical committee report included, that Jim Berkson talked about, and that Brad Andres will talk about in a little bit in his Shorebird Technical Committee report.

All those issues which have been covered in other presentations today, I'm not going to talk about. I'm just going to focus on the recommendations from the plan review team out of the FMP review.

There are four recommendations coming out of the FMP review. The first one is dealing with live trade.

The Florida annual report outlines increasing marine life collection taking place in their state.

At this time, the plan review team does not believe that the landings from this marine life collection to be a problem, but we do ask that states include any of this activity in their annual state compliance reports in the future so that the plan review team can monitor the situation.

The second recommendation is funding for research and monitoring activities. As you could see from the previous discussion, the plan review team strongly recommends that the benthic trawl survey should be funded for 2002 or as soon as possible to provide the necessary information for future stock assessments.

We do have a recommendation supporting this initiative that's going on in Congress right now. The plan review team also recommends that the horseshoe crab tagging subcommittee that the technical committee has recommended be revised, that that be done, and the resurvey of the biomedical companies.

The third recommendation has to do with habitat delineations. The plan review team recommends that states continue to improve habitat delineation in their states, including categorization of spawning importance on different beaches.

Several states have continued this work beyond their initial work, and that's providing really valuable results. Other states have decided not to continue this work and the plan review team just encourages states to do this.

The final recommendation has to do with law enforcement reporting. In Addendum I some law enforcement reporting requirements were set up, and this year the Law Enforcement Committee raised concerns with these reporting requirements.

It requires each state to submit a detailed form similar to the one which is used for striped bass, which asks for information on the number of hours spent on horseshoe crab enforcement as well as other detailed information.

The state law enforcement programs don't routinely collect this information as it is outlined in the report; and in order to do so, it would increase time and money spent on horseshoe crab reporting, but not necessarily regulation enforcement.

The Law Enforcement Committee questioned how this information was going to be used and the value of it. The plan review team reviewed their concerns and recommendations, and the plan review team recommends that this law enforcement reporting be changed.

The original intent of the requirement was to ensure that horseshoe crab regulations were being enforced in all the states and that the ASMFC was made aware of any problems with enforcement.

The plan review team suggests replacing this detailed form which is currently used with a general description of law enforcement violations, any regulations that law enforcement is finding unenforceable, as well as a general description of how horseshoe crab regulations are enforced in the state and have that information be included in each state's annual state compliance report.

The plan review team has come up with suggested Addendum III language. It's a very short addendum. If the board chooses to move forward with this, this is the language that the plan review team suggests that you use, three sections.

The first section is simply a general introduction about horseshoe crab management and Addendum I. The second section is a statement of the problem, which just outlines the problems with the current law enforcement reporting requirements, as I've just done

for you.

And number three is the law enforcement reporting requirement changes, and I'll just go ahead and read to you what this adjusted Addendum III language would be.

Addendum III requires all states to include a law enforcement section in their annual report to the ASMFC due on February 1 of each year.

This section should have a general description of law enforcement issues, including the following: significant law enforcement violation, any regulation that law enforcement personnel are finding unenforceable, as well as a general description of how the horseshoe crab regulations are enforced in the jurisdiction.

This would replace all law enforcement reports as outlined in Addendum I. I do want to note that the plan review team has been working with the Law Enforcement Committee and our new law enforcement staff, Mike Howard, on this issue, and several of the Law Enforcement Committee members have reviewed this suggested language and the plan review team report and are comfortable with this and believe it addresses their concerns.

CHAIRMAN LESSER: Okay, Carrie brought up several things we want to make sure the board concurs with. On the Addendum III, we would entertain a motion to allow Carrie to proceed with this. Gordon.

MR. COLVIN: Well, Mr. Chairman, I'm not comfortable making a motion quite yet, and I wanted to explore the issue a little bit more generically. Yesterday something similar came up with lobsters.

It might well come up other times this week with other fisheries, and I'm beginning to wonder whether what we really need is a more standardized, across-the-board approach to law enforcement reporting as components of our annual reports to ASMFC.

I frankly would almost rather approach it that way and perhaps take some interim action as law enforcement has recommended on horseshoe crabs, pending that kind of a broader, across-the-board

evaluation of reporting generally on enforcement compliance.

Let me add that I believe that enforcement compliance-based reporting is extremely important. I think historically we probably underestimated or undermanaged the enforcement component of our management programs.

They are just as important as the regulations we implement, and we need to know and we need to have assurance among ourselves that enforcement is occurring and is achieving the compliance outcomes that we all expect, and I think that's what we need to focus on generically.

CHAIRMAN LESSER: Mr. Howard.

MR. MIKE HOWARD: Mike Howard. I'm the law enforcement coordinator for the ASMFC LEC. I couldn't agree with Mr. Colvin more, that we need to provide useful information to the board to ensure us that the plans are being enforced, that data that you receive can be read and understood.

What the LEC is doing currently and will be exploring is the standardization of these reporting forms on all FMPs, trying to evolve out of the FMP reporting like striped bass, which gives you 500,000 fishermen checked, 65 citations, 12,500 man hours, 650 boat hours, which means absolutely nothing to this committee in real enforcement terms.

We are looking to standardize that; and as we move forward with that standardization process, I'm sure that the FMP boards will be included and see if this information is in fact reporting that we are enforcing the laws, any problems with FMPs, either at the state level or at the ASMFC level, or less enforceable than others, and also success stories where the public is receiving these laws in a useful and a good way and something that's very useful to the committee versus these numbers that we've been throwing out in disjointed reporting. So, Mr. Colvin, I agree with you completely on that.

CHAIRMAN LESSER: Susan.

MS. SHIPMAN: As do I. I think Gordon has a real good suggestion, and I think there's probably an interim fix that we can do that's not

unlike what we did in eel.

You'll recall in the eel plan, the board, by I think consensus or agreement, agreed to shift the implementation of the young of the year survey by year. We really didn't go into the plan. It was just sort of an agreement, actually, of the board around the table.

We took a vote, we agreed to do that, and I think for this coming year we could agree in an interim to adopt these measures as a substitute, if you will, for the law enforcement components of the compliance report.

I think we can do it without an addendum and then approach the issue Gordon raises, which I think is a much better approach.

CHAIRMAN LESSER: Any other comments on the interim approach? Susan, you say that would take board action to agree?

MS. SHIPMAN: Yes, and if you would like a motion, I would move that the board adopt the plan review team's recommended component for law enforcement reporting for the compliance report for 2002.

MR. COLVIN: Second.

CHAIRMAN LESSER: Gordon seconded. Discussion? I guess we're supposed to call for a conference, but I don't think we'll have one. Those in favor, signify by saying aye; opposed. The aye's have it.

Any other questions for Carrie? The other one is the approval of the reports for the compliance and the *de minimis* status. I would entertain a motion to that effect. Mr. Adler moves; second, David Borden. Move to accept the PRT report on the state compliance and the request for *de minimis* status. Any comments? Mr. Adler.

MR. ADLER: Thank you, Mr. Chairman. I just wanted to ask Jack Travelstead on compliance reports or the reports from Virginia. Jack, I just wanted to ask what happened in Virginia on these figures? Remember what we went through with all the horseshoe crabs that we needed and then how

little -- what happened down there?

MR. JACK TRAVELSTEAD: Well, the main thing that happened was bait bags.

MR. ADLER: That made that much of a difference?

MR. TRAVELSTEAD: It made a tremendous difference, yes.

MR. ADLER: Wow!

MR. TRAVELSTEAD: The other part of it was, obviously, crabs were purchased from other states across land to make up the difference. I think bait bags had more to do with it than anything. We do have regulations in place, as you know, that require bait bags in any conch pot, regardless of where they're fished.

MR. ADLER: All right, I mean, what I was looking at here was the 152,495 number and then the landings were just 18,000. That was significant.

MR. TRAVELSTEAD: The other thing that happened is the conch pot fishery itself sort of took a dive last year. There was a lot of windy weather in the spring and a lot of people did not participate in that fishery. They stayed inshore and did other things.

That's probably going to change this year, so you're going to see landings go back up.

MR. ADLER: Thank you very much.

CHAIRMAN LESSER: Any other comments? All those in favor of the motion, please signify by saying aye; those opposed, The motion carries. Shorebird technical committee, finally. Gordon.

MR. COLVIN: Maybe not. I want to come back to something. I heard again in the report we just heard a recommendation that funding be found for the trawl survey continuation for 2002.

I don't think this board has yet identified a strategy to deal with that recommendation, Mr. Chairman, and I guess I would want to make very clear; are we unequivocally receiving recommendations from our

technical committee and our plan review team that we find funding for that work for 2002?

MS. SELBERG: Yes.

MR. COLVIN: Good. That said, then I would like to suggest that we task the staff with putting together some kind of a proposal and communication to the board along the lines of our earlier discussion, with some options for funding that could include the state wildlife grant fund option that I discussed earlier, direct state funding, and funding support from external partners.

Let me just mention that one of the difficulties with the state -- there's a couple of difficulties with the state wildlife grant funds that I referred to earlier.

One is that in many of the states those funds are going to be primarily managed by their wildlife divisions, which will be more difficult for some of the marine divisions to access in some states than others.

Another is that for implementation projects such as this, it's a 50/50 state/federal match. I would urge that our staff work with the staff of the Fish and Wildlife Service to identify what options there might be for states.

There's no question that this work would fully qualify and be squarely within the sideboards of the intent of that legislation, in my mind.

There are also options whereby states could provide funding directly in support of this and also options where we could reach out to some of the other partners and interested parties for additional support as well.

It ought to be relatively easy to put together \$100,000 among fifteen states, three federal agencies, and all of the other partners. But we won't do it unless we get the staff, I think, to take a lead in trying to pull something together, and that's what I'm recommending.

I don't know that we need a motion, but I would like to hear further from staff on the issue unless New Jersey wants to volunteer the whole shot.

CHAIRMAN LESSER: Go ahead, Bruce.

MR. FREEMAN: We had the money last year, but I don't think it's there this year. Gordon, my understanding of the agreement we had of Charlie writing a letter to the various states would include some of the alternatives you suggested.

Now that was my understanding of our discussion previously. If in fact that's incorrect, I think that letter from Charlie would be the way to focus bringing this together in a cooperative manner, simply because it's a mechanism to do so as the chair of the board. I think it would be an appropriate way rather than have two separate activities going on simultaneously.

CHAIRMAN LESSER: I would suggest that Carrie and I both put our heads together and draft a letter and probably write it under the auspices of this commission. I could co-sign it or something like that to urge states to contribute and then whatever avenue they could have more access to. Eric.

MR. SCHWAAB: I just wanted to clarify the geographic scope of the activities for 2002. I heard two different options. One is continuation of the area that was surveyed in 2001. The other was for a relatively minimal increase.

We can expand that, I thought I heard fourfold in geographic area, and I heard some suggestion from board members that to do so might be valuable and that other states could justify participation, and I would suggest that we go in that expanded direction if at all possible, if what I'm hearing is accurate.

CHAIRMAN LESSER: Jim, do you want to expand a little bit on the proposed area for the \$100,000?

DR. BERKSON: Sure. For the amounts that I've given you, that we've estimated, that would be using the same area that we used last year. In theory, if everything works the same with the crabs, trough to non-trough, inshore to offshore, all of those things hold, you could increase fourfold the area and only increase the number of stations slightly.

But the first year we would try to expand the area, we would want to do a more detailed sampling, a larger

sampling scheme, in those new areas to insure that those assumptions still hold. We have not priced that out at all yet and we really haven't budgeted that.

So this is something I think I would want to talk over with the stock assessment committee and look at in a little bit more depth to see how much larger they think the area should increase at the current time.

At this point in time, I would really recommend continuing with the same area because I think it's the simplest, and we have a price tag on it, and then planning to increase that dramatically in 2003 if the congressional funding comes through. That just may be easier.

CHAIRMAN LESSER: Bruce.

MR. FREEMAN: It may be useful to have several alternatives. One, Jim, is to continue with the work you did last year at the known price, and then expand it and have another level that we could go to if the money is forthcoming.

There may be the appeal to states outside that central location to become involved, and their funding could be justified if they were geographically involved.

So if we could come up with a budget of let's say doubling or tripling the area, as opposed to a core, which would be to repeat, then it would give the states the opportunity to see what kind of funding they could generate and perhaps we could repeat what we did last year, but then expand beyond that.

DR. BERKSON: I would be happy to put together a couple of options like that.

CHAIRMAN LESSER: Pete.

MR. JENSEN: I have a question of timing. I don't know when the commitment has to be made to get all this organized, but certainly as states try to go after some of the CARA money, that's going to require proposals, administrative process, so it would seem to me a timing issue is raised here as to when you decide what you want to go after.

CHAIRMAN LESSER: I think we can point that out in the letter, as Jim stated, that we have to do something relatively soon for the 2002. Carrie.

MS. SELBERG: I just want to review what staff guidance I think I have received and make sure it's correct. I think I have three tasks. The first is to work with Charlie to put a letter together to the states about the importance of supporting congressional funding, which would be 2003 and beyond.

The second is working with Vince O'Shea on the letter from the Atlantic States Marine Fisheries Commission directly to congress about supporting congressional funding for 2003 and beyond.

The third is working on funding for 2002, putting together some options and working with states who are interested in direct funding and coming up with possibilities of ways that we can get 2002 funded. I understand that those are my tasks to move forward.

CHAIRMAN LESSER: Is that agreeable with the board? Carrie, you're very perceptive. We have to wrap up with the Shorebird Technical Committee, please.

#### **Shorebird Technical Committee Report**

MR. ANDRES: Okay, thank you, Mr. Chair. What I would like to do is follow up on what Jaime Geiger reported to you at last year's meeting, and basically we were really in the first stages of getting that committee formed and operating.

You now have in front of you a terms of reference for that committee, as well as an outline of the assessment report that we are undertaking, and I would like to then just spend a few minutes here stepping through the highlights of those two documents.

I'm sure you're all aware the purpose of this committee was to provide technical advice to the board relative to how management decisions affect shorebirds. That's certainly not new, I think, to anyone.

One thing I will point out that we aren't truly an ASMFC committee. We're really being funded by the Fish and Wildlife Service and this was -- I think the intent of the board is that there would be a little bit of autonomy, yet we would certainly report and answer to you.

So the immediate task we have is to review the

population status of shorebirds that use Delaware Bay and to determine the strength of dependency on horseshoe crab eggs as a food resource, and central to that is the red knot.

We've already discussed a little bit of membership on that committee and again putting this together. I have worked with Stu and other folks on the Horseshoe Crab Technical Committee to make sure we had it well balanced, and you can see we have representation of Delaware and New Jersey state agencies, fisheries folks.

Stu, I'm glad to hear, will stay on. That would certainly be, I think, our encouragement to make that solid tie to the Horseshoe Crab Technical Committee.

There is also the Fish and Wildlife Service, NMFS, universities, NGO's are represented by Rutgers, Manomet, New Jersey Audubon, and the National Resource Defense Council.

Then the feds, we have Patuxent Wildlife Research Center as well as Fish and Wildlife Service, and Carrie also attends the meetings and is involved in the process as an observer, as well as Dr. Allen Baker from the University of Toronto.

The Fish and Wildlife Service, and me specifically, serves as the coordinator in this role and is not a voting member. I guess I won't dwell too much on the process. Again, it's in the terms of reference.

If you have any specific questions after reviewing that, feel free to contact me or Carrie. We do have, as you can see, we've tried to budget our operations to get these NGO and university folks to the meetings as well as performing a peer review of this assessment report that I'll get to in a second.

So, again, the immediate task is to try to assemble all the information we have on status of shorebirds and their reliance on horseshoe crab eggs. I'm sure you're all aware we've had pieces come in and out.

I think the real need is to get all the pieces of information in one place and treated in a comprehensive manner, and I think the committee is in total agreement with that charge and responsibility.

Our time table to get this assessment done by April, and with increased interest in the red knot and possible declines in some survey data from South America, that we will probably try to speed that up, and some of it's just a matter of funding.

If we can get money to contract out sections of this report, that will speed it along. I'm working with the National Fish and Wildlife Foundation to increase that ability. I will mention that the state of Delaware and the state of New Jersey are contributing substantially financially to this effort.

Again, similar to the stock assessment, an important component of this review is a thorough peer review. There will be seven peer reviewers from various biological aspects, including a statistical design and analysis and also horseshoe crab folks, as well as other shorebird experts on energetics and their biology to serve on this peer review panel.

One thing that we will -- I think our approach that we will take will be what we might call concordance of evidence. It will differ a little bit from the stock assessment for horseshoe crabs in that we'll try to look at all these datasets at one time in combination, and certainly the authors will point out problems with any individual dataset.

The approach is to try to look at them as comprehensively as possible to get a good feeling and understanding of what is going on with these populations and their interactions with their food resources.

Beyond this immediate task, we in some ways have a sunset clause written into our technical committee. I think it was the feeling of the committee we don't want to just have meetings to meet, but if there are definite things that we need to address that are put forward from this board or from the shorebird community or whoever, that we will need to address them.

But once this task is done, we may revisit our terms of reference and kind of decide what those next challenges might be. And, again, we're not going to be meeting once a year or twice a year just to see each other. We definitely want to be task oriented.

The next meeting we have is set for July 25th in New

Jersey to review the progress and to make sure we have that biological assessment report outlined as complete as possible that you have in your hands and making sure that we have all the authors of the sections identified. So I think with that, Mr. Chair, I'll open it for questions.

CHAIRMAN LESSER: We have a very few minutes left. Are there any questions for the shorebird committee? Everybody is satisfied. Gerry.

#### **Public Comment**

MR. GERALD W. WINEGRAD: My name is Gerald Winegrad. I represent the American Bird Conservancy; and rather than comment on the public part, I thought I would make sure that you could get through your business.

What I want to is compliment all of you, Charlie Lesser and the state of Delaware, Maryland, New Jersey, Virginia, all the states that have worked on the horseshoe crab issue, not only for the shorebirds, but for the crab itself and the whole ecosystem that depends on this amazing creature.

I think we've come a long way since I first met with staffers who are long gone now from the Atlantic States Marine Fisheries Commission six years ago this month to try to get something going in terms of a Maine to Florida regulatory approach and management approach on the horseshoe crab.

So it's just very heartening to hear how far we've come. We've finally started the stock assessment surveys, which were long ago needed, as well as the shorebird committee and also the regulatory approach that's been taken in terms of trying to produce a sound management plan for this resource. So thank you all.

The American Bird Conservancy supported and ran a bait bag promotion where through the cooperation of the states we were able to get the list, with a few exceptions, where some states wanted to mail them directly from North Carolina and Massachusetts.

I want to thank particularly Jack Travelstead with the Virginia Marine Resource Commission for an endorsement letter as well as Rick Robins with Chesapeake Bay Packing.

He actually provided us over 1,200 bait bags, and the gentleman in Delaware who runs ERDG that you mentioned, who promotes these bags. He had a sheltered workshop and actually had them hog ringed and mailed out.

So were able, as best we could, to get a sample bait bag in the hands of every conch fisherman who fishes with a conch pot from North Carolina to Massachusetts, with the exception of Virginia because they already require them in Virginia.

Each fisherman that wanted 25 free bait bags, we also mailed those out. So we distributed over 1,600 bait bags to conch fishermen, and some of you received the packets, I think, with endorsement letters from Rick Robins as well as the Virginia Marine Resource Commission, et cetera, and the scientific research that was done.

And just the other day from a reference from Pete Himchek in New Jersey, a waterman's wife called me in New Jersey. He was out fishing and he wouldn't try the bait bags. She said, "You know how watermen are, he just won't change, but can you please send us a packet.

"We need 25 or 50 so I can give them and have him try these", and we were able to put him in contact with a gentleman, Glen Gaubry in Delaware.

My final two points. This is the height of the horseshoe crab/shorebird phenomenon in Delaware Bay. It's the second largest concentration of shorebirds in the entire North American continent outside of the Copper River Delta in Alaska.

While you're here, for those of you that don't live in New Jersey or Delaware, you really ought to go over and see that phenomenon. It's incredible. Not only are the crabs interesting to see and what goes on, but also the shorebirds.

There's teams of folks coming over there, not just researchers, but it generates well over \$15 million a year in revenue in New Jersey alone. We'll be there, Perry Plumart of the National Audubon, Thursday morning.

In fact, the secretary of DNRACK of Delaware, Mr. Depasquale, is going out with us for a while, and

we're just going birding really, and so you ought to take advantage of it. It's happening now. You just go to Dover. It's not that far from here and go right to the coast.

Finally, two issues. One, I compliment you again. We need to get the funding; and if the states could come forward, just five states at \$20,000 each; where Maryland, New Jersey, and Delaware put the money in the kitty and got a NFWF grant to begin the stock assessment last year.

We really need to get that money soon to begin that stock assessment. And, secondly, your endorsement of the congressional thing is well placed because that will assure funding for not only that, but the other research over five years.

And my final point is despite the efforts of this group, the Horseshoe Crab Management Board and the Atlantic States Marine Fisheries Commission, and you personally within your states, and cutting down on the take of the crabs, there's still some warning signals that we have to be aware of.

We're hearing from New Jersey folks and researchers that the red knot population has declined, where they study it in Tierra del Fuego, by 54 percent over the last two years, and the New Jersey Marine Fishery Commission recommended a moratorium on the take of females for six weeks. That has not been implemented. So there's still some red flags perching up once in a while despite your good work. So thank you.

CHAIRMAN LESSER: Thank you. Is there any other comment? Perry, make them briefly. We're in overtime now.

MR. PERRY PLUMART: Thank you, Mr. Chairman. I too would like to thank you very much for the letter that you're going to be considering to raise the money for this year's survey. It's something that National Audubon strongly supports.

And also I appreciate that you're going to be looking into the congressional funding. I have to say, having spent the last several weeks talking to appropriators, the sooner you can do that, the more effect it will have. Those decisions are being made now. The House is going to vote Thursday on \$30 billion

worth of emergency funding for the war, for homeland security, and for New York City. Money is going to be very tight this year. The stronger you can make that recommendation and sooner, literally if you can get it out in the next week, the more effective it will be and the more probability there will be that that funding will actually get there.

I too would like to emphasize what my colleagues Gerald Winegrad and Eric Stiles have said. There are still significant warning signs out there that while we've made a lot of progress, we haven't done enough.

We've been taking animals that take ten years to reach sexual maturity, that pregnant females have been targeted, that the presentation by Dr. Berkson showed that at a conservative estimate we're still overfishing by four times just to maintain the horseshoe crab population itself, which, of course, is not enough for the migratory shorebirds.

So thank you for your actions today and I hope that we can continue to advance on the progress we've made. Thank you, Mr. Chairman.

CHAIRMAN LESSER: Thank you, gentlemen. Any donations coming forth from Audubon or American Bird would also be appreciated.

MR. PLUMART: I'm happy to go hand in hand with you, Mr. Chairman, to Capitol Hill.

CHAIRMAN LESSER: David Borden.

MR. BORDEN: Thank you, Mr. Chairman. I would just like to follow up on your lead right there and encourage the NGO organizations to actually start a fund-raising program to match the appropriations that we're talking about.

From my experience dealing with Congress and state budget personnel, they're much more inclined to support an appropriation if in fact they know they are going to be outside groups and organizations that are trying to provide matching funds. So I would urge Audubon and all the rest of the NGO's to do that.

CHAIRMAN LESSER: Paul.

MR. PERRA: We have an issue under

Other Business. Are we under Other Business now?

**Election of Vice-chair**

CHAIRMAN LESSER: Not quite yet, one important item. This is my last meeting. I'm retiring from state service; it's time. So we need a vice chairman to step immediately into the chairman's position. I'll open the floor for nominations for vice chair. From New Hampshire.

MR. DENNIS ABBOTT: Thank you, Charlie. I would like to place in nomination from the state of Maryland, Mr. William Goldsborough.

CHAIRMAN LESSER: Bill Goldsborough. There's a second. Any others? Pat.

MR. AUGUSTINE: Thank you, Mr. Chairman. Move to close nominations and cast one vote.

CHAIRMAN LESSER: Why did I anticipate that? All those in favor of Bill Goldsborough serving as vice chairman of the Horseshoe Crab Management Board, please signify by saying aye. Without opposition, Bill, welcome aboard. Other Business now. Paul.

**Other Business**

MR. PERRA: I have two items. One is just to let the states in the New England area know NMFS provided funding to Mr. Garvey to expand the bait bagging program, and we'll be contacting fishermen in your state, I think up through the Massachusetts area, for the bait bags. So you may get calls. Just tell them to talk to Glenn Garvey in Delaware.

The other is that we put through the closed area, and then the National Marine Fisheries Service went on to other things and we had two other items on the back burner for horseshoe crab management.

One was an improved federal reporting system and the other was a no transfer at sea. I met with the technical committee and discussed with them these two items. I asked them a question, are you getting the fisheries-dependent data now that you need to manage the fishery and to track your landings?

And with the improvements in all of the state programs, the technical committee felt that there's no need to move forward with a federal permit. That

would just be double reporting requiring for the fishermen.

Also, I discussed with them the no transfer at sea and no one seemed to think it's a problem right now. So, with that, we've put those two items back on the back burner and have tabled them unless there's some real pressing issue, and then we'll resurface them.

CHAIRMAN LESSER: Mr. Adler.

MR. ADLER: Thank you, Mr. Chairman. Did we finally bring to closure a year or so ago with the biomedical company that wanted -- was it Mrs. Snow or something?

MR. PERRA: Yes, you had recommended that no more than 10,000 horseshoe crabs be harvested a year out of the closed area. That one New Jersey company was granted a permit, but late in the season, and actually got in there and tagged some horseshoe crabs but did not harvest any for bleeding.

They intend to request again this year and we will look at that again. When we issued the permit, we were looking at a three-year process. But the paperwork will have to be renewed, so we will be looking at a request again to do that, and we'll try to process it more expeditiously this time.

MR. ADLER: Okay, thank you.

CHAIRMAN LESSER: We're on overtime. Is there anything really pertinent you have to say? Lew.

MR. LEWIS FLAGG: Thank you, Mr. Chairman, just a brief note. On our report for this year, we were supposed to do a spawning stock survey for horseshoe crabs and unbeknownst to me staff had received some funding last year to do it, and it was completed.

I have a report and I will submit that to the staff for distribution to the board and the technical committee.

CHAIRMAN LESSER: Thank you. Motion to adjourn? Done.

(Whereupon, the meeting adjourned at 9:40)

a.m., May 21, 2002.)