

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

**August 26, 2003
DoubleTree Hotel Crystal City
Arlington, Virginia**

Approved December 16, 2003

ATTENDANCE

Board Members

Lew Flagg, Maine DMR
Bill Alder, Massachusetts Gov. Apte.
Eric Smith, Connecticut DMR
Byron Young, New York DEC
Pat Augustine, New York Gov. Apte.
Brian Culhane, proxy for Senator Johnson (NY)
Jack Travelstead, Virginia MRC
Bruce Freeman, Chair, New Jersey DFG&W
Roy Miller, Delaware DFW
Vito Calomo, proxy for Rep. Vergas (MA)
John Nelson, New Hampshire DMF
G. Ritchie White, New Hampshire Gov. Apte.

Howard King, Maryland DNR
David Cupka, South Carolina Gov. Apte.
Spud Woodward, Georgia DNR
Kathy Barco, Florida Gov. Apte.
Tom Meyer, NMFS
Paul Diodati, Massachusetts DMF
Bill Cole, US F&WS
Jerry Carvahlo, proxy for Rep. Naughton (RI)
Louis Daniel, North Carolina DMF
Cathy Davenport, Virginia Gov. Apte.
Tom Fote, New Jersey Gov. Apte.
David Borden, Rhode Island DEM

Ex-Officio Members

Gregory Breese, US F&WS, TC Chair

Aaron Hurd, Delaware DFW Enforcement, LEC
Representative

ASMFC Staff

Bob Beal
Carrie Selberg

Brad Spear
Vince O'Shea

Guests

Gerald Winegrad, American Bird Conservancy
David Smith, USGS
Perry Plumart, National Audubon Society
Steve Doctor, Maryland DNR

Paul Piavis, Maryland DNR
Tim Dillingham, American Littoral Society
Bill Goldsborough, Maryland Gov. Apte.

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

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INDEX OF MOTIONS

1. Move to approve with changes as noted and approved by the board for public comment. Motion by Mr. Augustine; second by Mr. Cupka. Motion carried. (Page 11)

**ATLANTIC STATES MARINE FISHERIES
COMMISSION**

HORSESHOE CRAB MANAGEMENT BOARD

**Doubletree Hotel Crystal City
Arlington, Virginia**

August 26, 2003

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Washington Room of the Doubletree Hotel, Arlington, Virginia, August 26, 2003, and was called to order at 1:10 o'clock p.m. by Chairman Bruce Freeman.

WELCOME AND INTRODUCTIONS

CHAIRMAN BRUCE FREEMAN: If members would take their seats, we would like to begin the meeting. This is the Horseshoe Crab Management Board. My name is Bruce Freeman, for those of you who don't me. I chair the board at the present time. To my left is Brad Spear, who is the staffer assigned to this committee.

All of you should have received the agenda for the meeting today. The item of interest is Addendum III to the plan. All of you should have received this. We would like to take action today to approve this for public comment.

Brad will go through the items in the plan, take any comments from the board and make any necessary modifications, and then hopefully vote on this to have it available for public comment.

BOARD CONSENT

As I indicated, we do have an agenda. It's something you should have seen. The only addition I would have under Other Business is Dave Smith, who has been involved in the cooperative tagging program, has a short presentation. We'll go over that later in the meeting, and Dave also has a handout. I think you'll find that quite interesting.

Also members of the board should have received the minutes from the February 26 meeting. They were sent out on the CD. Are there any comments or changes to those minutes? If not, I will accept a motion to approve those.

MR. JOHN I. NELSON: So moved.

CHAIRMAN FREEMAN: Moved by Mr. Nelson and second by Mr. Adler. Bill Adler. I thought you were seconding the motion.

MR. WILLIAM A. ADLER: I will, but --

CHAIRMAN FREEMAN: Okay, go ahead.

MR. ADLER: -- I was looking for the motion about developing an addendum, and I didn't see it mentioned that way in the minutes. Maybe rather than hold this up, could they just check through that section of the minutes again to see the actual motion to develop an addendum? That wording, I didn't see. I know it was there because it passed. If they could just check through the minutes and just check on that, I don't want to hold up the meeting.

CHAIRMAN FREEMAN: Bill, I believe on that summary that Tina puts out within a few days of the meeting listing, I think the motions are listed there as well, but you want to identify those in the minutes themselves, is that --

MR. ADLER: If somebody could just check the actual text of the minutes and see where that said it, because I didn't see it there, and I know it was done. We won't hold up the meeting.

CHAIRMAN FREEMAN: Okay, very good. Any other comments on the minutes? If there is no objection, we'll approve the minutes. Okay. Public comment, are there any comments by the public at this point? There should be time during the discussion for comments.

Bill, it was just pointed out to me that if you look at the minutes of the meeting and go to the page preceding the minutes, the motion is there.

MR. ADLER: I know it was there.

CHAIRMAN FREEMAN: But you want to see it in the minutes.

MR. ADLER: I was just reading through the actual text.

CHAIRMAN FREEMAN: Okay, I thought you had missed the motion. Brad, the report on the Draft Addendum III, would you simply go through that?

PRT REPORT ON ADDENDUM III

MR. BRADDOCK SPEAR: Thank you, Mr. Chairman. I'll quickly run through a little bit of background on Addendum III and then run through basically the options that are laid out in Addendum III.

The addendum process was initiated at the June board meeting. Since that time, the PRT has developed the addendum and run it by the tech committee, and we've incorporated some comments from the technical committee.

The primary purpose of the addendum was to adjust harvest restrictions in Delaware, New Jersey, and Maryland. Secondary purposes were brought on mainly by the technical committee to adjust the monitoring program that was first laid out in the original FMP.

The technical committee also recommended some changes to the research needs of the original FMP. Just to give you a sense of the timeline for the addendum, today, hopefully, the board will approve Addendum III for public comment, giving staff any instruction for writing changes to the addendum.

Between this meeting and the next meeting, the addendum will go out for public comment, and there will be public hearings as requested by the states.

Then at the annual meeting, the board will get a summary of the public comment, AP input, and review the addendum and select any management measures and hopefully approve the addendum so that it can go to the full commission for approval.

As far as implementation goes, we'll discuss that a little bit later in the presentation, but the projected timeline is sometime early spring for implementation.

The first management measure options that were presented in the addendum are for a harvest level threshold for Maryland, New Jersey, and Delaware.

Option 1, as laid out in the addendum, is status quo, and basically everybody remains at their current quota for horseshoe crab harvest.

Option 2 is New Jersey and Delaware limit their quotas to 150,000 crabs per year each; and Maryland would limit its quota to its 2001 landings, which is approximately 170,000 crabs. In that option, all other states would remain status quo.

I'll run through all the options; and if you have a question or a clarification on the options, you can raise that when I bring up the options. Otherwise, we'll just hold discussion until the end of the presentation.

The next management options were for closed season. At present the FMP requires no closed seasons. From the motion at the last meeting, it was asked to include an option for prohibition of harvest and landing in New Jersey, Delaware, and Maryland from May 1 to June 7 of each year.

The next and final management option suite in the addendum is for biomedical companies and their requirements. At present the FMP requires crabs that are harvested for biomedical purposes to be returned to the waters that they were harvested from once they were put through the biomedical bleeding process.

The technical committee revisited this issue and thought in an effort to reduce overall mortality they would like to give states the option to have crabs that are harvested for the bait industry be used for biomedical purposes and then be returned back to the bait market.

The idea behind that is a crab that is going to be destined for a hundred percent mortality be used and then sent back to the bait market.

The technical committee also recommended changes to the monitoring program that was originally laid out in the FMP. Some of the requirements had been outdated, and there also were some monitoring components to the program that the technical committee felt was important for states to keep on their radar screen.

There's a bit of a misnomer in the plan, the addendum as it is laid out now. Monitoring requirements is a term that was carried over from the FMP. Some of these components that I will be explaining to you aren't actual requirements.

Some of them are being carried on on a voluntary basis, and I'll explain or I'll try and point out which will be requirements from this addendum and which are simply parts of the monitoring program that are nice to have going along and we would like them continued, but they are not requirements, state requirements for compliance.

Component A1, the first part to report harvest method, sex, and prosomal width of the commercial catch is carried over from the FMP.

There's a placeholder that has been added to Addendum III, and this is to characterize the portion of the commercial catch based on maturity. There hasn't been a formalized technique to identify maturity or an effective technique that states can implement.

So, that is being worked on by the technical committee and as part of Dr. Berkson's trawl survey. Once that technique is developed and approved by the tech committee, it's likely states will be asked to report this information as well because it's an important part of the stock assessment.

Component A2 is also partially carried over from the original FMP. Originally states were required to report mortality associated with the biomedical process from the biomedical companies in their state.

The technical committee and the biomedical working group have reviewed this and added some reporting requirements that we're asking of the states to solicit from the biomedical companies.

Those new reporting requirements are embodied in the biomedical survey that was attached to the handout that was on the briefing CD. It's Appendix A with a sample of the survey that states can use as a model for obtaining this information.

B1 is to continue working towards a coastwide benthic trawl survey. This is Dr. Berkson's work. The PRT added it as a monitoring component mainly to highlight its importance to the stock assessment and to highlight it as the number one priority need of information.

It is not a requirement of the states. Currently the survey is receiving federal funding to continue. In the past, it has been kind of a piecemeal approach from the states' contributing funds, and it's likely that the federal funding that we've received this year -- and there are signs that we may receive it again this year -- there is the good possibility that it will end at some point, so it's just kind of a heads up to states that it may fall on their shoulders to continue the survey at some point.

B2 is a carryover from the original FMP for states to continue their benthic sampling. States, I think in most cases, if they finfish trawled, it isn't directed for horseshoe crabs, but it's the finfish trawl that catches horseshoe crabs incidentally. This is also used in the horseshoe crab assessment. At present, this is not a

requirement, but it is something that the technical committee urges states to continue.

B3, again, the technical committee and the PRT recommend that states that have spawning surveys continue those surveys. It is not a requirement for states. This originally started in 1999 with a pilot project and to present has continued on a voluntary basis from cooperation between various states and the federal government.

B4 is newly added to Addendum III for a coordinated tagging program of horseshoe crabs. States are not required to engage in this monitoring.

But, again, it's simply to put this on to state's radar screens, if funding does become available, there is a mechanism in place that the tagging subcommittee has come up with to develop a coordinated tagging program.

B5, I think some states had concerns about identifying spawning and nursery habitat. Some states had already identified this habitat and wanted to know if it was still a requirement.

The technical committee looked at this and said that in states that have identified this habitat, their responsibility is now to report any changes that they're aware of in the spawning and nursery habitat.

For states that have not completed identifying their spawning and nursery habitat, they are required to continue to do so as they do this identification.

The second part of B5 is that states intervene in development projects in their state to ensure that habitat productivity is maintained. This again is a carryover from the original FMP.

Monitoring Component C1 is to continue egg abundance surveys similar to the spawner survey. This was piloted in 1999 and has continued on a voluntary cooperative basis among various states and the federal government. States are not required to do this, but, again, the technical committee and the PRT urge states to continue.

Another part of C1 is for states to participate in a horseshoe crab/shorebird joint workshop to come up with an appropriate methodology for egg abundance.

C2, continue shorebird monitoring programs. Again, states are not required to do this for the addendum. At present states are conducting this on a voluntary basis.

Part 2 of C2 is to participate in a workshop to develop a shorebird monitoring program. Basically this is the next step of the Fish and Wildlife Shorebird Technical Committee, is to look ahead and set research priorities.

Brad Andrus is already putting together a workshop for the fall to have the shorebird people and some horseshoe crab people involved in that workshop. That's it for the monitoring components.

Some of the research needs, changes in the addendum, first of all, progress was noted on what has been done since the original research needs were laid out.

One of the new research needs that was added was the methodology to identify the critical stages of new recruits. This is an ongoing research need that is part of Dr. Berkson's trawl survey.

In addition to looking at alternative bait sources, it was brought up that we should also be looking into alternative trap designs. Both of those will be explored at a workshop that ASMFC is sponsoring in the fall. A third research need that was added was to identify juvenile habitat of horseshoe crabs and the extent of use.

As far as compliance goes, as the addendum is laid out right now, we're looking at a February 1 deadline for states to submit an implementation program for Addendum III and for the board to revisit this issue at the February board meeting; and with approval, implementation by April 1.

DISCUSSION ON ADDENDUM III

MR. DAVID CUPKA: Should that be 2004, Brad, and not 2003, since we won't finish the amendment until the end of this year?

MR. SPEAR: Yes, 2004 would be a more appropriate date. Thank you.

CHAIRMAN FREEMAN: Other comments? Eric.

MR. ERIC SMITH: The way I understood your description of the requirements, none of the provisions, B1 through 5 in the monitoring section, are required. They're all suggested, recommended, and the only one I wasn't clear on was B3.

I think I interpreted what you said is that was also not a requirement, but I would just ask you to be clear on

that one for me. Okay, so all five of those are not required. Okay, as a question, that satisfies that. I'll have a suggestion for later.

MR. SPEAR: Just a point of clarification. The first five -- were you referring to A1?

MR. SMITH: No, B1 through B5.

MR. SPEAR: Okay, B1 --

CHAIRMAN FREEMAN: Through B5.

MR. SPEAR: That is correct.

MR. SMITH: Okay, thank you. Do you want recommendations for change now or do you want to do question and answer?

CHAIRMAN FREEMAN: If you have a comment to make a change, I think it would be appropriate to do it right now.

MR. SMITH: Okay. The only thing I see in here that I would ask the board to consider -- no surprise to anyone -- we are a rather small state in terms of the magnitude of landings. I think our quota is something like 33,000 crabs and our landings have been 15 to 20,000 the last couple of years.

I wonder, while we're getting into this addendum, whether it wouldn't be acceptable to the group to propose that states that have a minimal set of landings like Connecticut be required only to report total pounds by harvest method?

The additional jump to a fishery reporting system to determine sex is something that is pretty much inconsistent with most of the vessel trip reporting systems that are done for other fisheries.

I'm kind of curious what you get out of a state like Connecticut with that small set of landings from having the sex determination anyway.

It would help us a great deal if there were an option in here under A1 that said that states with landings below a certain amount only have to report landings by harvest method. Option 2 would be to have it the way you have it. That would be my suggestion, and I would see if there is any disagreement with that.

CHAIRMAN FREEMAN: Eric, let me just indicate relative to the reason for the sex. There have been various strategies proposed for harvesting horseshoe crabs based upon the possibility of using sex only.

For example, New Jersey has considered harvesting only males only to maximize the number of females. That could be done perhaps on a short-term basis, but you're going to get to the point where if you harvested all the males, then that strategy may not be the best one to endorse.

So far as monitoring the population, it's important to know the percent of males versus females. We would expect a one-to-one ratio, but in some instances we've experienced in the past where particularly the females tend to be favored because they're larger.

If you're going to deal with picking up an individual, you pick up a large one, so that the harvest may have been concentrated on females; therefore, the sex ratio would change, which may have implications for spawning.

So, the basis for doing this is I think is perhaps more important than we would see in other species of fish. I would say, however, that now that we're starting to get sufficient funding to do a coastwide benthic survey, that survey may be very useful in determining the sex ratio.

MR. SMITH: They're good points and you did, in my view, make the right distinction between population monitoring versus commercial landing monitoring. We do a benthic trawl survey and we do get sex differentiation from the research vessel survey catch.

So, we can estimate from that dataset the sex ration in the population. Then the question becomes for that minimal amount of landings is it necessary. So, again, I would ask for the board's agreement to have two options under there as we go out to public comment and see what we get for the commercial landings only.

CHAIRMAN FREEMAN: Are there any comments to Eric's suggestion, any feeling? David.

MR. DAVID V.D. BORDEN: I agree with his suggestion, and I don't see how it's going to make a big difference in terms of the preparation of the document.

CHAIRMAN FREEMAN: Would it be agreeable, Eric, to have a caveat that so long as a state does some survey to determine a sex ratio such as that, and I think most of the states do, and that, I think, is a critical aspect.

Brad, I would ask either one of you to comment if in your opinion by doing so it would relieve a reporting burden, but we wouldn't miss the necessary information. Do you have any comment?

If there's no objection, we'll modify this to include that as one of the alternatives. In the meantime, we'll refer that back to the technical committee to see if there is anything we missed, but we can take it for public comment. Would that be suitable, both David Borden and Eric? Dave Cupka.

MR. CUPKA: Thank you, Mr. Chairman. Before we get into debating some of the pros and cons of these options, I just want to get a little clarification.

This part of the monitoring requirement changes, it was a little confusing to me. For example, I think it was just asked if Components B1 through B5 were voluntary or required, and we were told they were voluntary.

Yet, if you read further down in the document, it says all states are required to provide harvest information outlined in A1 and A2 and other information outlined in B2 and B5 and the annual report. It's not always clear just what is required and what isn't required, at least in my mind on some of this.

CHAIRMAN FREEMAN: Okay, I'll let Brad answer that.

MR. SPEAR: Thank you for pointing that out, David. Since the document went out, the PRT has looked at this again and tried to make it clear and sift out what is required and what is simply something that we're suggesting or recommending for states.

It has not been clarified in the document yet, but it will. Before it goes out to public hearing and public comment, it will be clarified as to what is required and what is not.

CHAIRMAN FREEMAN: Pat Augustine and then Louis Daniel.

MR. PAT AUGUSTINE: Thank you, Mr. Chairman. I think one of these line items got misconstrued or misunderstood or should have been deleted, I guess.

Under Component 5B, the sentence says states that have not completed the identification of potential

spawning and nursery habitat must continue to do so -- I don't know if that makes sense -- and provide such information on the annual report.

How do we do that? States that have not completed identification of potential spawning and nursery habitat must continue to do so. It means not complete? Did I misunderstand something?

CHAIRMAN FREEMAN: Well, I think the easiest way, Pat, is simply remove the word "continue." Those who haven't identified should do so.

MR. AUGUSTINE: Okay, thank you.

CHAIRMAN FREEMAN: Louis.

DR. LOUIS DANIEL: Just a clarification. For Eric's suggestion, are you going to use the *de minimis*, that threshold of landings? If you're below the *de minimis* threshold, then you would not have that commercial reporting requirement. He said at some level of landings, but there was no specific level described.

Secondly, as just a suggestion, I noted the same things that David mentioned on the monitoring requirements. It would be nice if we had a section monitoring requirements and monitoring recommendations, and that way you could split it up to where it would be very clear to the states what we have to do and what we're not necessarily required to do.

CHAIRMAN FREEMAN: Okay, we'll make that change in the document. Other comments? Dave.

MR. CUPKA: Yes, Louis, but if you read further down that same section, if you want to be relieved of mandatory monitoring program components, the state has the option to prohibit all commercial bait harvest within its jurisdiction.

That's something that we do in South Carolina, so even though it's required, this relieves us from that requirement, the way I read it, except for monitoring the biomedical harvest.

CHAIRMAN FREEMAN: Louis.

DR. DANIEL: Right, but we would like to be able to continue to land those bycatch in the flounder fishery. It's about 11,000 crabs or so, but that's still some incidental income in that fishery.

But, there are things in here where I'm still unclear, after talking to my technical person, what are we supposed to be doing and what is voluntary, because with a state like North Carolina, we haven't located any spawning areas yet.

The first draft suggested we had to start looking at the changes in those environments, and now Brad has effectively corrected that language I think and done a good job with it.

I just want to make sure I'm clear what I'm required to do and be able to continue to land those few thousand crabs as bait each year, and right now it's not crystal clear to me.

CHAIRMAN FREEMAN: Okay, do you have any comments?

MR. SPEAR: Louis, to your one question about determining an effective threshold for that requirement, I'll get in touch with the PRT and the technical committee and come up with some sort of criterion.

Just looking quickly at the landings, it seems like there is a pretty clearcut line between the high harvest states and the low harvest states, and it will become clear in the rewrite.

CHAIRMAN FREEMAN: Other comments? Roy.

MR. ROY MILLER: Thank you, Mr. Chairman. If we're ready to move on to other aspects of this proposal, I would like to just ask a question concerning Section 3, exceptions, to get some clarification of intent.

The clarification that I'm seeking is crabs removed for biomedical purposes, do they count towards the state's quota or not, and what is the intent in that regard? The answer may be different for Option 1 as opposed to Option 2.

MR. SPEAR: To your first question, crabs that are harvested under the biomedical permit, or with the biomedical permit, do not count against the state's quota?

If Option 2 were to go through, states that harvested crabs for their bait industry that were placed into the biomedical industry and then returned to the bait industry would count against the state's quota, and

those are the crabs that are harvested with the bait permits.

MR. MILLER: Thank you for that clarification.

CHAIRMAN FREEMAN: I think, Roy, in this instance, some crabs that are harvested are used in biomedical, and yet they're under the requirement of returning those to the water.

I think in this instance it was the feeling to essentially once the crabs are harvested, take the blood from that crab, use it for biomedical purposes, and then use the crab for bait.

The total mortality would be less than if you have two separate, one for bait and one for biomedical. You're going to lose some of that harvest in biomedical incidental mortality, so the thought here being that you could accommodate both, but the overall mortality would be decreased.

MR. MILLER: If I could be permitted one follow up, I would just urge that whichever option is selected as the preferred option for the plan, that it be made explicit, the wording be there as to whether they count or don't count towards quotas.

CHAIRMAN FREEMAN: Okay, very good. Other comments? Seeing no other comments, I would ask for a motion from the board to make the changes we had agreed to and then move this forward to public comment. Pat.

MR. AUGUSTINE: Thank you, Mr. Chairman. Move to approve with changes as noted and approved by the board.

CHAIRMAN FREEMAN: For public comment.

MR. AUGUSTINE: You've got it, for public comment.

CHAIRMAN FREEMAN: All right. The motion is on the screen. Is there any discussion? Dave Cupka seconded the motion. Any discussion on the motion? Roy.

MR. MILLER: Again, I would like to clarify that if I heard the conversation correctly, the only components of the monitoring listed in this document that would be mandatory would be the A components; is that correct? All other components would be voluntary?

CHAIRMAN FREEMAN: Yes. Other comments? And the plan, Roy, also will make that clear. It would be just reworded to those which are compliance requirements and those which are requested of the states. No other comments, we'll take the motion. All those who favor the motion, signify by saying aye; all those who oppose the motion, signify by saying no. The motion carries. Dave Smith.

DELAWARE BAY TAGGING UPDATE

MR. DAVID SMITH: You guys are moving along pretty rapidly. I didn't expect to be up here quite so soon. Thanks for the opportunity to provide a very brief report on a tagging study that was started this year, a cooperative effort involving the cooperators of Fish and Wildlife Service and the states of New Jersey and Delaware, the Delaware Bay Citizens and Watermen, and also the U.S. Geological Survey.

Funding is provided by USGS and also a grant from New Jersey Department of Fish and Game and Wildlife, as well as substantial contributions of in-kind services and people and efforts from the Fish and Wildlife Service and the Delaware Department of Natural Resources.

The tagging was done throughout the Bay beginning in March and extending through the end of May from boat, and we used various kind of dredges. This is a scallop dredge on a boat that comes out of Cape May, New Jersey, a scallop dredge.

We worked up the animals, recording their size and sex and their approximate age, as well as putting tags on them and noting locations.

We also worked up the juveniles that were caught. And, if you suspected as much, it was in fact your chairman out there recording good data or quality data. He has very legible handwriting, too.

So the main tag that we put on was this standard button tag. We also experimented with a glued tag, and we did a lot of double tagging, although the last week of May we did a very intensive effort, and we didn't do any double tagging that time period.

Just to summarize the results, we tagged over 17,000 throughout the Bay. Prior to the spawning season, which started mid-May, we had about 7,000 released; and then the last week of May, over a three-day

period, we had three boats out with funding through New Jersey to support that last effort.

We put out about 10,000 during that time when the animals were really quite available to us. The upper figure shows kind of the distribution of those releases with the symbols in proportion to how many we put out there and then the recaptures are shown on the bottom figure.

There are over 700 recaptures. We haven't gotten them all into the computer yet. They keep trickling in and it's a little better — although it's 4 percent, which is low, it's a little better than what we had expected.

We're getting them, again, throughout the Bay and mostly through beachcombers and spawning survey participants, but also from watermen as well.

So, we just really are getting the data in and quality checked and things like that, but I wanted to pull out a few things that might be of interest in general. The next three slides show the pattern of recapture from animals that were released in specific areas in the Bay.

So, for the animals that were caught and released in that blue square -- and these were animals that were captured prior to May, so these were all March and April animals, animals that we thought had been in the Bay for a while, possibly even over wintering, and then the green circles show the recapture locations.

The tendency is that those animals were being recaptured in the Upper Bay. They were recaptured throughout the Bay, kind of scattered throughout the Bay, but there's a tendency for kind of a Upper Bay recapture of those individuals.

The next slide shows the recaptures for animals that were tagged and released in the lower Delaware side. We were able to find a high concentration of horseshoe crabs that appeared to be migrating in from the ocean around Cape Penlopen, and we were able to put out over 5,000 tags in that area.

The green dots show the recaptures and you can see that they were scattered along the coast, including lower and upper parts of the western shore, but you also see them being recovered on the New Jersey side, so there is a great deal of mixing.

Those recoveries on the New Jersey side were spawning beach individuals or very close to

spawning beaches. We weren't as successful at finding concentrations of in migrants on the New Jersey.

But, here we're looking at the recaptures for releases in the lower New Jersey waters and there were less released and less recaptures, but we see they're scattered on the eastern shore of Delaware Bay. Also, we see a recapture on the Delaware side as well, so there is this evidence of quite a bit of mixing and kind of a scattershot migratory pathway perhaps.

This figure on the top, the map on the top was bugged up when I copied it from the GIS, and I don't understand what happened there. But, anyway, these things happen, but that's supposed to show the distribution of juveniles, and it's more of an abstract painting than it is a map.

But, you can kind of get the feel that we really encountered juveniles throughout the Bay. The vast majority of tows had at least one juvenile in it. The tendency was that if you found adults, you found juveniles. They seem to co-occur, as you can see in that scatter plot in the lower left.

The histogram in the lower right shows the size distribution showing a very strong cohort at about 140 or 145 millimeters. It's hard to say what age they are, but if you look back at some of the papers by Segagucci and looking at the size related to age, those could be five to seven years old, but we're not sure.

We see other secondary modes in that distribution that are on either side of it. Animals that are in the smaller range probably weren't recruited to the gear very well, and then animals in the larger range could have been those that migrated — only those that stayed, but a lot of animals of that size range could have migrated into the ocean to complete their maturation.

But it will be interesting in the future to see how that size distribution changes. So, for the next couple of years of the study — We're funded for three years and we just completed year 1 -- we're going to continue the standard tagging, but we're going to begin the telemetry tagging part of this, which is a major component.

The map in the lower left shows the distribution of fixed-station receivers. Those receivers were field tested to have a radius of about four miles.

So, eight miles on either side of that receiver, we'll be able to pick up radio-tagged females. There will be 12 to 14 of those receivers and over 150 radio-tagged females that will be deployed pre-season of next year.

We're also applying for funds to deploy archival tags, which will record temperature and depths on a continuous basis. They'll be on the animal and they'll be recording that information.

We'll also be experimenting with ways to tag juveniles that will survive the molt, stay with the animal through the molt. I think we'll just end it right there. If there are any questions, I would be glad to entertain them.

CHAIRMAN FREEMAN: Dave, you also made mention of the tags that have been used, the buttons as opposed to the-- the glued-on as opposed to the radio tags.

MR. SMITH: We're interested in, of course, tag loss, legibility, and that sort of thing, and that's the reason for double tagging. We're trying to tag lots of animals because recapture rates are low. So, there's a tension between those two things.

We haven't quite gotten into the data enough to investigate tag loss with the double tagging, but multiple year recoveries will help us do that. We're not completely convinced that these standard button tags are the best way to go, but we haven't come across a better one at the moment.

CHAIRMAN FREEMAN: Okay, Pat.

MR. AUGUSTINE: Thank you, Mr. Chairman. As a part of the tagging program, are the commercial folks or folks who harvest these being notified that these horseshoe crabs are being tagged or if they found one that they should contact you folks or is there any way of tracking that portion of the population that may be harvested?

MR. SMITH: Well, actually at the urging of Bruce, we put out a flyer, and with the help of port agents the flyer is being distributed, I think, that will alert dredgers and trawlers in particular.

CHAIRMAN FREEMAN: I think there's two things, Pat. One is many of the people in the Bay are aware of this, but there are obviously some that aren't, so the public notification is quite important.

But, we also believe that the offshore vessels, particularly otter trawl and scallop vessels that would move all the way -- and even quahog vessels, ocean quahog vessels that would fish across the entire shelf may pick these up in the winter of next year, and so we're making an effort to contact the various docks who then will leave these flyers with the various vessels; so if they do get one, to simply notify us particularly.

Now, there's been also very good cooperation with the local watermen on this project, as Dave had mentioned, so there is quite a bit of interest.

I mean, one thing we jumped out ahead with the -- we started out with very little information on either horseshoe crabs or shorebirds and then jumped out with the shorebird information, and now there is a concerted effort to try to catch up on horseshoe crabs, and this tagging program I think will reveal a lot of information. Roy.

MR. MILLER: I have a quick comment and then a question. Tag returns from the commercial sector may have been inhibited to a certain extent on our side of the Bay this spring.

I don't know to what extent, but certainly the fact that our regulations were a subject of litigation may have served to depress tag reporting. Just keep that in mind when you look at your results.

The question I had concerns the juveniles per tow. Whose trawling effort are you reporting on, Dave, or is this all trawling efforts combined for your juvenile per tow numbers that you show there?

MR. SMITH: Well, we had three boats out at various times; one that sailed out of Bowers Beach and two from New Jersey ports, and the data comes from all three of those vessels.

MR. MILLER: Does it include the state of Delaware trawls as well?

MR. SMITH: It includes the trawls that we did while tagging. Does that answer your question, Roy?

MR. MILLER: Yes. In other words, it does not include the finfish trawl survey results from the state of Delaware?

MR. SMITH: No.

CHAIRMAN FREEMAN: Other comments? Tom.

MR. THOMAS FOTE: I know Doc Able is using different kinds of tags up in Little Lake Harbor where he is basically just attaching tags to the striped bass and basically seeing how many times they pass over a certain location.

Wouldn't that be advantageous to start using some of those there since we can do — I understand those types of tags you can use to do 400 different signals, so you could tag 400 different species.

If we started doing something like this, wouldn't it be advantageous basically to do a program like that so we could get available data on other species if we're going to go through expenses of radio tags and everything else?

MR. SMITH: I'm not familiar with the tag you're describing.

MR. FOTE: I'll talk to you after the meeting.

MR. SMITH: Okay, great.

CHAIRMAN FREEMAN: Other comments? Wilson.

OTHER BUSINESS

MR. WILSON LANEY: Bruce, just so the board knows, we did start tagging horseshoe crabs on the cooperative winter tagging cruise this year off North Carolina, and we'll be providing that data to Dave. And, Dave, if you want CPUE for juveniles, you and I could talk about that later, but we could calculate that for the cruise as well offshore in North Carolina and Virginia.

MR. SMITH: That would be great.

CHAIRMAN FREEMAN: Wilson, are you using the Fish and Wildlife Service tag, the one that Dave is —

MR. LANEY: Yes, Bruce, we're coordinating with Shelia Eiler and Mike Mangold and Region 5 staff, and Shelia sends the tags down. They provide all of the tags for the striped bass and the Atlantic sturgeon as well.

CHAIRMAN FREEMAN: Okay, very good. Other comments? Thank you very much,

Dave. So far as Addendum III is concerned, staff would very much appreciate a determination of those states who would like a public hearing with staff. I can indicate that New Jersey would, Delaware would. Any other states? Bill.

MR. ADLER: I will have Paul call the ASMFC about that.

CHAIRMAN FREEMAN: All right. Byron.

MR. BYRON YOUNG: I wanted to add New York to that list tentatively and we'll clear it through Gordon.

CHAIRMAN FREEMAN: Okay. We'll also have Brad call each of the state directors in the event that they determine they do need a public hearing, but at least to give an idea of scheduling and so forth.

Also, I have not spoken to anybody yet, but Brad reminds me that we are looking for a volunteer to be vice chair. This committee does not have a vice chair. I'll put the pressure on somebody here, but hopefully by the next meeting we'll have a candidate.

I took over somewhat hurriedly from Bill Goldsborough, but we will be looking for a vice chair candidate. Any other business? Roy.

MR. MILLER: Bruce, since we have a minute, I wondered if the board might appreciate a brief summary of the regulatory trials and tribulations of Delaware and New Jersey this past spring.

CHAIRMAN FREEMAN: All right, why don't you start? It's more interesting.

MR. MILLER: All right, I'll give the Delaware side of the story. Delaware and New Jersey, over the winter, had collectively agreed to implement by emergency regulation the 150,000 horseshoe crab limit and the May 1 to June 7 closure. There was also consideration given to mandatory use of bait bags.

Both states agreed they would pursue regulations this spring via whatever emergency regulatory process is available to those states. Delaware attempted to do so, and we ended up before a judge three different times.

One ruling was in our favor and two were not in our favor, so we were unable to implement emergency

regulations this spring. In fact, our fishery opened under the ASMFC guidelines and last year's regulations as a result of this court action.

Subsequent to that, we reached our ASMFC quota. As I recall, I think it was sometime in late June and we closed our fishery for the year.

But, at the same time, we were proceeding with the normal regulatory process to implement the provisions of this addendum that you see before you, among others.

That regulatory process proceeded in the normal fashion and resulted in a comprehensive revision to Delaware's horseshoe crab regulations that went in effect August the 10th.

If anyone is interested in the wording of those specific regulations, I have some copies with me. That's the Delaware story. So, in 2004, unless and until those regulations are changed, we'll be in compliance with the options in the draft addendum. Thank you.

CHAIRMAN FREEMAN: Thank you, Roy. New Jersey had put in place, by emergency action, an overall cap of 150,000 crabs and a closure of the May and first week of June a prohibition of harvesting on the spawning beaches.

Published concurrent with that emergency was a regulation that would continue that action. The emergency time period has expired, and the rule has gone in place as a permanent rule, again, until modified or changed at a later date.

As a result of the action, our harvest was less than 150,000. It was on the order of 120,000 crabs this year. That remains, as I say, in place.

As Roy indicated, we also included in our regulation a requirement to use bait-saving devices. We didn't describe exactly how the device would necessarily be constructed because the watermen, on their own initiative, have been designing bait bags that use less and less amounts of horseshoe crab per conch pot.

In fact, some of these people have it down to probably less than 15 percent of the amount of crabs they were using just two years ago. So, in order to allow the innovative use of bait-saving devices, we simply described them as such.

There has been a large interest by watermen of using less crab. Brad is in the process of putting together a

bait workshop similar to the one we had several years ago. That will probably occur sometime this fall, probably a November timeframe some time.

I'm trying to get people together that have innovative techniques to let other people know what they are and to bring people together to try to find ways of decreasing the amount of crabs that could be harvested that would primarily be used for conch bait. Bill.

MR. ADLER: Thank you, Mr. Chairman, just a question. If these states have the ability to reduce these quotas, why is an addendum necessary to make them reduce the quotas if they've got the ability to reduce these quotas?

In this addendum, I can see, for instance, the part about making biomedical crabs usable for bait, which is in Option 2. I can understand that one, but is there something I'm missing here as to why we have to have an addendum process through the ASMFC to have three states or whatever reduce their quotas and put seasons in when they can do that without an addendum?

CHAIRMAN FREEMAN: Well, in my opinion, Bill, there needs to be a mechanism that would have the full force of law if in fact people decided to go the other direction.

I would also indicate that in my opinion it may be very possible in the near future, as we find innovative techniques, that the provisions of this addendum or this plan would not have to be compulsory.

The industry essentially would be able to operate in such a manner and use very low numbers of crabs. This issue with shorebirds ends up being a very critical one, particularly with the red knot, because of the seemingly decline in the population.

Now people in the audience would certainly indicate that it's not seemingly, it's definitely something that is occurring. If the red knot, for example, is listed as an endangered species, then I don't think we'll be standing here talking about perhaps horseshoe crabs harvest. There may not be any.

So I think it's a safeguard on both sides, the fact that having a plan in place will absolutely make certain that these provisions are complied with. The experience we're having at the present time is that the watermen are making an effort to reduce their amount of bait.

Part of it, as you well know being in the lobster fishery, is that bait cost is a major component; and if you can reduce your costs, it's to your benefit, and that appears to be occurring.

The watermen we're finding, and the need for the bait shop, is that they're very innovative, and some of these people have techniques that two years ago weren't even thought of.

Today, if the rest of the industry follows their lead, there would be a substantial reduction. I think to the benefit of those people in the industry, if you look at the table where we were allowed on the order of about 2 million crabs coastwide, in 2001 we took about a million. There has been a substantial reduction and much of that has been by the use of bait bags.

MR. ADLER: That's fine. I have no problem with that if you want to do an addendum. It was just a question because I know states can put in more restrictive rules if they want, so I was just wondering why were going through the -- I have no problem with that.

CHAIRMAN FREEMAN: Any other comments? Roy.

MR. MILLER: I was just going to elaborate for Bill Adler the mere fact that the commission was embarking on this addendum process gave our department the credibility it needed to withstand potential legal challenges when we set about passing the regulations.

CHAIRMAN FREEMAN: Any other comments? Perry, go ahead.

MR. PERRY PLUMART: Perry Plumart, Director of Government Relations with the Audubon Society. As Bruce pointed out, we're here doing this today because we think that there is a compelling need to address the issue of horseshoe crabs and migratory shorebirds that are dependent on them.

We think that the actions that you're taking today and moving forward in the process we very much appreciate. But, you know, there wasn't much discussion on it today, and that's okay because I think many of you are very familiar with the problem of the decline in the horseshoe crab and the migratory shorebirds.

But, we very much appreciate the actions taken by the state of New Jersey and taken by Delaware and

being taken by Maryland to cap theirs at 170,000 because there has been a lot of heat that have been taken by a lot of people, and we know it's difficult.

But, nonetheless, we think it's the right thing to do, and that your moving forward is something that needs to happen and we appreciate the commission moving the process forward today.

CHAIRMAN FREEMAN: Thank you, Perry. If there's no further business, this meeting is adjourned.

(Whereupon, the meeting was adjourned at 2:20 o'clock p.m., August 26, 2003.)

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