

P R O C E E D I N G S  
of the  
ATLANTIC STATES MARINE FISHERIES COMMISSION  
HORSESHOE CRAB MANAGEMENT BOARD

October 17, 2000  
Adam's Mark Hotel  
Clearwater Beach, Florida

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The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Ballroom of the Adam's Mark Hotel, Clearwater Beach, Florida, October 17, 2000, and was called to order at 1:00 o'clock p.m. by Chairman Bruce Freeman.

CHAIRMAN BRUCE FREEMAN: We'll begin the Horseshoe Crab Board meeting. To begin this meeting, I'd like to call this meeting to order.

Each of the board members has received a copy of the agenda, and I'm assuming everyone has read that. Are there any comments on the agenda?

Any additions or changes any of the board members would like to make? Seeing none, we will follow the agenda. There is an item at the end of the agenda, Number 8, that allows for other business. If there are items that you would like to raise, you can do it at that time.

I'll ask Dieter to read the roll to make certain everyone is here.

(Whereupon the roll call was take by Mr. Dieter Busch.)

CHAIRMAN FREEMAN: All right, thank you. We do have a quorum. All right, we have an item on the agenda for public comment. Is there anyone representing or would like to make a comment for the public? I don't see any hands. We'll move forward.

What I will do also, if in fact there's any items for discussion, any votes made, I will reserve time prior to the vote of the board for the public to make comment.

The next item is the approval of the August meeting minutes. You have received copies of the minutes through the CD-rom process. There are copies available in the back. I should mention, for those in the public, there are copies of the items we are going through on the back table if you'd like to pick up a copy.

You have received the August minutes. Is there a motion for approval of those minutes?

MR. PAT AUGUSTINE: So move.

MR. BILL ADLER: Second.

CHAIRMAN FREEMAN: Second by Mr. Adler. Other comments on those minutes by anyone? Seeing none, if there are no objections, the minutes are approved. I see no objections.

The Technical Committee report; there are several items here, and I'll essentially ask Stu Michels to summarize and lead the discussion on the Technical Committee report. Mike Millard also has a presentation that he'll give. So Stu, I'll turn this over to you.

All right, Mike, why don't you go ahead and give your presentation at this point and then Stu will give the summary of the Technical Committee recommendations. And what we'll do is let Mike -- he's a chairperson of the Stock Assessment Committee for the horseshoe crab -- give his presentation.

It will take about fifteen minutes and then we'll take questions. Mike will take questions on any of the items that he presented.

MR. MICHAEL MILLARD: Okay, thank you, Mr. Chairman and distinguished board members, for giving me this opportunity to talk about some of the work that our subcommittee has done this past summer.

You'll see listed on the bottom here my colleagues in the Stock Assessment Subcommittee, Jim Berkson, Jeff Brust, Stu Michels, myself, and Dave Smith, all helped out in this effort.

To set the stage to update everybody how we got to where we are today, about two years ago, when we had the Stock Assessment Peer Review Panel convene, they formally suggested or recommended that we develop a coastwide program of standardized data collection, including these various surveys and monitoring efforts, which would lead to a formal estimation of parameters required to develop the biological reference points so that we could begin to use some valid biological parameters to assist in management decisions for horseshoe crabs.

Subsequent to that Peer Review recommendation, the Technical Committee came to the Stock Assessment Committee and formally tasked us with describing a framework for a horseshoe crab stock assessment, including the appropriate models and evaluations of the management options, to develop a report on these models, their assumptions and the data needs; and then, of course, a formal recommendation of how to proceed, how we felt we should proceed with the horseshoe crab stock assessment.

And this product that we developed this summer is the subject of this talk and why we're here. The Stock Assessment Committee had to sit down and come up with some general assumptions and data needs and a framework to guide our thinking.

The first and most important thing that we think is missing at this point for horseshoe crabs is to identify and delineate the stocks or the stock assemblages, which might be used as management units.

Currently the plan, as you know, suggests that the entire east coast population is a management unit. But biologically speaking, I'm not sure if there's anyone in this room that might believe in that from a purely biological standpoint.

And there is some work underway with BRD, Tim King, the BRD geneticist, to shed some light on this genetic population structure.

And again, the spatial extent of the stocks need to be better investigated. And this is important for effective design of the surveys that we're going to recommend be put in place.

In order for these surveys to be designed in a manner that they will provide meaningful data, we have to know the spatial, temporal, and geographic distribution of the animal.

So these are some sort of encompassing unknowns right now that bear thinking about and working on. How we see this stock assessment in general terms proceeding is in the short term, the next few years, the next five, six years, whatever, we're going to have to rely on these trends, these indices that the various states have been collecting, for instance, the Beach Spawner Survey.

We have to rely on those in the short term and every year reassess the trends in those indices from these existing surveys. But in the meantime, in the background, we recommend starting up this Off-shore Benthic Survey that we'll talk about a little bit and collecting that data.

And as that data becomes available, the assessment will sort of evolve away from the assessment of trends and indices to a more typical stock assessment, a more formal stock assessment using biological reference points and estimations of population parameters via the model that we're going to talk about here.

And as I said, the primary assessment tool that we see with this model that we're about to introduce is this coastwide Benthic Trawl Survey, which I think everybody by now should be at least vaguely familiar with the concept of us trying to develop that.

Some of the basic assumptions behind what we're about to recommend is that horseshoe crabs undergo some undetermined molting cycle; and then, as far as we can tell, have perhaps a terminal molt at sexual maturity.

Currently horseshoe crabs cannot be reliably aged obviously in annual or other increments. That in and of itself makes or discounts a lot of useful stock assessment approaches. And what's important for what we're going to recommend is that horseshoe crabs, which are one year or less from entering their initial spawning season, which we term recruits, are identifiable and discernable from those which have in fact reached sexual maturity.

Now this is an important concept. It's not currently possible, I don't think. But we need to either come up with some sort of rule of thumb or a biologically based, hopefully, decision process where we can do this; identify those crabs that will be mature within one year.

I think initially it will be a size-based cutoff, but there needs to be some research done in this area. Some of the, for lack of a better term, sub-optimal approaches that we did not converge upon were the surplus production modeling.

They're fairly simplistic and often don't work and can give you misleading results, plus they give you no insight into the real governing dynamics or the population parameters of the population.

It requires a good contrast of CPUE and effort data, which we don't have to date, obviously. Then, of course, on the right all the age-structured models are just not applicable because we can't age the animal.

And that, as I said, eliminated a large family of stock assessment tools. So what we did converge on is this well-published approach called the catch survey model developed by Collie and Sissenwine in '83. It was the first paper we could find.

It's actually a modified DeLury method. It was used recently in the assessment of Delaware Bay blue crabs by Tom Helfer and Des Kahn and has been applied a couple of times up in the Bering Sea in some crab populations, for these animals that are difficult to age, and you may know stage, as opposed to age, information, such as these recruits.

This is useful when you're able to ID these recruits and post recruits. We need catch data recorded annually that employs this survey data in harvest to relate adults and recruits in year T to the adults available to the fishery in the year T plus one.

And we'll see some equations here, not too many, I don't -- my intention is not to numb people with equations. But just to give you a background of how this works, we will see some equations.

And it permits the estimation of Q, the catch ability, and via that, the abundance of the adults and recruits. The basic underlying equation to everything is this fairly simple numbering in year T plus one is equal to the number in year T plus the recruits minus the catch and all discounted for natural mortality.

So we take that base relationship and we can partition that into adults and this group that we've termed recruits; those that will be adults within a year. So we would need to know the catch of adults and the catch of recruits.

So that would involve sampling of the commercial catch to designate these proportions of commercial catches. And again, each one is discounted for its natural mortality. And this partitioning into adults and recruits allows you to assign a unique natural mortality to adults and recruits if in fact they are different between those two groups.

And then the trick of the catch survey model that we're recommending here is that you can relate the true relative abundance, that which is actually out there in nature, unknown, to what you see in your trawl catches, or in your survey catches, via this era term. I'm sorry, that's the next step.

This step is where we relate relative abundance, what we see to total abundance, via this catch ability parameter. So these are the survey numbers. These are the absolute abundances, and these are the discounts over here for, one, commercial catch and the natural mortality.

And we can solve equations two and three for big N and big R and stick it back into this equation, and we end up with this fairly messy looking equation which we use that as the base sort of population model -- we're almost through with this stuff -- and we introduce two more equations which are measurement errors.

We have this notion of measurement error, these errors over here. So now have -- I'll skip a lot of that -- we have these predicted values. We will have also observed values and we can use the maximum likelihood estimator to make our predicted values fit our observed values. And that gives us our population parameters.

The standard catch survey model assumes that harvest occurs initially in the beginning of the year, almost instantaneously. Of course, that's not the case. And during that time of harvest no natural mortality occurs. We don't believe that's true at all with horseshoe crabs. And in the spring and summer, when the harvest occurs, and especially during spawning season, there's probably a significant amount of natural mortality.

So there's another extension of that model that we developed which allows us to correct for the occurrence of simultaneous natural mortality and fishing mortality. And all that does -- I won't go through all of this, but remember how before we had catch explicitly in the model where we subtracted off catch?

Now we leave fishing mortality up in the exponent to -- that's how we would estimate fishing mortality and natural mortality simultaneously, through some equalities.

And it's through the very same theory that we already went through. You come up with these set of simultaneous equations and catch equations, and, again, you have observe values, you have predictive values, and that allows us to solve them all simultaneously with an estimator and come up with the population parameters.

So once we come up with these, we can turn those back into absolute abundance by dividing by the  $Q$ , the catch ability. We can predict yield and all these traditional fishery population dynamic things which are useful in making management decisions.

We can predict the number of eggs, which, as we know, is a fairly crucial issue with horseshoe crabs; perhaps egg production. And along with some stock recruitment function, we can do forward projections of the behavior of the population.

The acquired data are these annual indices of abundance for adults and recruits from the standardized survey. That is the Offshore Benthic Trawl Survey that will be needed.

The annual commercial harvest, numbers of adults and recruits. The commercial harvest would have to be monitored and reported. We have to come up with an estimate of natural mortality which is, of course, always tricky in fisheries populations, but it's necessary; and, some sub-sampling of the commercial capture for this information on the proportion of sexually mature adults and recruits that the fishery may capture.

And for all this to work, again, it's important; it's absolutely essential that we come up with some decision rule for identifying these recruits; those which will be mature within the next year.

That's going to, I believe, take some research, some structured research at either an agency or academia to come up with a decision rule for that.

So at the heart of all this is the Benthic Survey which, hopefully, would get started soon and begin amassing data for this assessment. We need some individual studies to occur; fecundity rates, and I believe there is a state working on that right now.

There would need to be harvest reporting annually. Another individual study would have to be the stock ID, which is under way; the annual commercial catch sampling. Some molting or age and growth studies I believe should continue; being able to age or stage these animals better than we currently do would assist assessment techniques greatly.

And the Beach Spawner Survey which has been going on for eleven or twelve years now should be continued, we believe. Right now it is the most valuable tool that we have. And the sobering part is, of course, nothing happens right away.

For this you'd need at least eight or ten years of time series of this Benthic trawl data to give you any sort of reliable results in the first attack at a formal assessment. And in a nutshell, that's it.

CHAIRMAN FREEMAN: Are there any questions of Mike? I know I heard some discussion by Dennis Abbott about the expedient component of those formulas but other than that -

MR. RITCHIE WHITE: Natural mortality seems that that would have a big factor. How do you look for natural mortality, tagging, or what?

MR. MILLARD: Tagging would be, I think, one of the better ways of doing it. That would also take several years of a fairly well-structured tagging program to get at that. There are ways, sort of cookbook ways of estimating, coming up with a rough preliminary estimate of natural mortality, several different cookbook ways that would have to be employed I think, in the beginning. It's a tricky issue in all fisheries. I don't think there's a real good answer for it.

CHAIRMAN FREEMAN: Other questions? Paul.

MR. PAUL DIODATI: Yes, Mike you were saying, you know, we get the Benthic survey eight to ten years down the line. But I would think that the first few years might be very valuable if you could look at the trend and see if that trend matches, for instance, the Delaware Bay Trawl Survey, some of the NMFS longer term surveys.

We might get more than you think in the first few years out of it. That's what I think is a possibility if it's designed well.

MR. MILLARD: Sure. Trends, I mean, we should be looking at all the trends again. That was in reference to estimation of formal parameters, rates, population rates it would take eight to ten years. Yes, but in the meantime looking at all the trends that we have would be useful.

CHAIRMAN FREEMAN: Other comments? Jack.

MR. JACK TRAVELSTEAD: I don't have question but rather a request of the Stock Assessment Committee. Earlier in your presentation you talked about in the short term having to use or rely upon the trends of indices and certain existing surveys.

I think it would be helpful if you could provide the Management Board with a listing of what those surveys are and over what years you are now looking at indices; you know, what are the reliable years for those surveys and what the indices have been during those years.

You know, we used an index of juvenile recruitment in the Striped Bass Plan. I think everyone had a very good understanding of that. I think it would be likewise helpful to know what those indices are.

MR. MILLARD: We can do that.

CHAIRMAN FREEMAN: All right, additional questions? Andy.

MR. ANDREW T. MANUS: A comment more in the form of an action that this board could take. There is a very nice listing of research recommendations embodied in this report, and I think we would be remiss if we didn't put a cover letter on this report and send it to NOAA and a number of the Sea Grant colleges up and down the Atlantic coast asking them to pay particular attention to the research needs of the management agencies.

There's a lot more work here that needs to be done than we have the financial or professional staff expertise resources to do. And that letter should also go to our friends at the U.S. Fish and Wildlife Service as well our friends in NOAA.

CHAIRMAN FREEMAN: All right, Andy, there's going to be additional discussion on these items and it is a handout. And relative to the actions we may or may not take, we certainly can do that, and I'll see that that's done.

Any other questions or comments? All right, thanks very much, Mike. Again, we really appreciated those formulas because we tend not pay attention to those, but for those mathematicians in the audience, it's good stuff. And, Mike, you're going to be with us throughout the meeting because there may be additional questions. Good.

MR. STEWART MICHELS: Mike gave us somewhat a talk, a presentation to the Technical Committee; and after fielding numerous questions, the Technical Committee approved the Stock Assessment Committee's proposed framework. However, the Technical Committee shared some concern with the Stock Assessment Committee over our ability to identify recruits to the spawning stock.

The Technical Committee agreed that even though there is a lack of knowledge of multi-specific incremental growth and mortality, and that there is an extended lag between eggs and recruitment to the spawning stock.

It was recommended that the egg per recruit model not be entirely discounted for future consideration. Other than that, we certainly endorse the framework that the Stock Assessment Committee has provided us.

CHAIRMAN FREEMAN: Okay, any question of Stu's comments? And if none, the board will accept -- if there's no opposition, the board will accept the Technical Committee report. Gordon.

MR. GORDON C. COLVIN: I guess I wonder what that means in terms of where we go from here.

CHAIRMAN FREEMAN: Well, it'll be the next several items. We'll talk about the stock assessment survey's need for implementation. Bear in mind, just to refresh your memory, several of the states have contributed \$125,000 to do certain types of work, although those types have not been identified.

We will review the -- there's a memo dated August 15th or a recommendation projects for expenditures, and, Stu, do we have that somewhere on the agenda?

MR. MICHELS: Yes, it's the next item.

CHAIRMAN FREEMAN: Okay, Stock Assessment Survey needs?

MR. MICHELS: Yes.

CHAIRMAN FREEMAN: Okay, we'll go through that. My only concern, Gordon, is if there's any comments relative to the reports or any opposition to those.

I just want to make sure that the information has been provided from the technical standpoint -- and we all have representation -- everyone feels comfortable with, because based upon that we will make recommendations on how to utilize some of that money.

And the comments that Andy had made, what we had anticipated is taking this money that state's have contributed and using that as leverage to augment this with grants and other contributions that we would hope to receive from both Fish and Wildlife Service and the National Marine Fisheries Service to get some of this work done.

In Mike's comments, we talked about this Benthic survey, we talked about this for the last year or so. In order to get the information we have comparable to other fisheries, we will require a Benthic survey.

Now that also involves a tremendous commitment in time and money; as Mike indicated, eight to ten years before we get, from the biological standpoint, what they feel is adequate, accurate information. The commission and the services need to make a commitment. We have not yet, but we will be talking about that.

The only point that I make so far as accepting of the report is that we concur with the Technical Committee and the Stock Assessment Committee information they've presented is the best we have and we'll move on that. Bill.

MR. ADLER: If I could just ask one more time, on the report part that talked about predator/prey on the horseshoe crab, did you say that you were going to be looking into that mortality item to see if there is a relationship or if there is other species that are eating the horseshoe crabs basically? Did you say you were going to look into that?

MR. MILLARD: No, I don't believe we addressed that in the stock assessment's report.

MR. ADLER: No, I think you mentioned that you felt that there was some of that going on, and it was unreasonable to assume that there was no natural mortality. And would the predator/prey part be able to be addressed to see if, you know, striped bass, dogfish, something like that, are eating these horseshoe crabs at all?

MR. MILLARD: I don't think that it would be addressed in that sort of detail. There will be a natural mortality parameter entered into the system of equation, of course. And that encompasses all manner of mortality, which is not fishing, commercial fishing.

But, to parcel the natural mortality out to specific predator/prey interactions, we have not discussed that yet. That would be a whole horse of a different color, I think.

MR. ADLER: I was just curious because there might be some of that going on to when we're trying to figure out how many crabs are out there. And I think John wanted us

to ask if there were any private donations to help with the money that's needed to do some of this research, and I thought it would be useful if they could.

CHAIRMAN FREEMAN: Okay, one comment I do have, Bill. As I mentioned during our session prior to lunch, that Jack Dunnigan, Dieter, and I met with Kathy Short of Fish and Wildlife Service, and raised the issue of what the board was looking for; and also the commitment, particularly on the shore bird side where we've been dealing with issues of horseshoe crabs.

The other part of this equation is, well, the impact on shore birds or how dependant are these on the eggs? We're seeing the different species of shore birds may be more or less dependant. What are the consumption rates?

How many eggs need to be available on this surface for the food requirements for the birds, and so forth? Well, many of these issues need to be addressed. Also, it was identified by the Technical Committee early on, better population estimates of the shore bird populations.

We have at least four species of shorebirds involved here. And there have been population estimates, but we need more detailed work on that.

So, there's a commitment we're looking for on the other side of the equation from particularly the Fish and Wildlife. And, Jamie Geiger, if you recall, is asked to chair a committee shore bird -- well, asked to chair a committee that is dealing with these issues, and he'll give his report later in the meeting.

But the Fish and Wildlife Service said, indeed, they were important, as I indicated earlier this morning. Their difficulty is they're always two years budgeting beyond the actual time they get the money.

They indicate it's a priority item and they would include this in future budgets, so we anticipate some of that. We've also asked the Department of Commerce to provide funds. If we're getting into a Benthic Survey, it's going to be an expensive composition and a long-term commitment in time. So we're looking for those commitment as well.

MR. ADLER: Private donations?

CHAIRMAN FREEMAN: And we're looking for that as well. Andy Manus arranged a meeting a year or so ago, I guess it was, Andy, in Wilmington with various conservation groups and two federal agencies, and a number of states to try to come up with ways to get organizations to use some of their funds for prioritizing, getting some of this work done.

And that is all involved with this. So we have a number of ways we're approaching this, but I think we have the issue well covered. Gordon, I think I missed the point of your question. And I may have made the statement approve, and what I really meant to say was have the board accept the report.

MR. COLVIN: Thank you.

CHAIRMAN FREEMAN: And I think that was your point and I missed it entirely until Dieter reminded me. Dave Borden and then Jamie.

MR. DAVID V.D. BORDEN: Thank you, Mr. Chairman. I guess a quick question. I'm a little uncertain what, the implications or the conclusion that we won't be able to use the stock assessment for eight to ten years, this methodology for eight to ten years, means.

I mean, we have a fairly restrictive management regime in place right now that has fairly significant impacts on a wide range of fishermen up and down the coast. And what is the implication of that one statement?

Does that mean that lacking ten years of data, we can't liberalize at some point the restrictions? I mean, what is the implication of that statement?

CHAIRMAN FREEMAN: Stu, did your committee address this issue at all? I have mixed feelings, but, you know, just from a technical standpoint.

MR. MICHELS: The hope is to, once again, we're going to try and use the surveys that are currently in place; the National Marine Fisheries Service time series, the Delaware 30-foot trawl time series, the spawning survey, as an indication of trends in the population.

That's the best that we can do at this point in time. And then as this benthic survey hopefully gets initiated, we can also rely on that survey as an indication of trends. But to do an assessment as outlined in this framework will take eight to ten years. Mike, do you have anything to add?

MR. MILLARD: Yes, what it leaves you with is this sort of, for lack of better term, trial and error management where, for instance, we put in the latest restriction. And now we'll look at a couple years of trend data and see if perhaps the population responds in a positive manner. Are the trends going up? Are they staying level or are they continuing to go down? But you're always looking sort of backwards in that case. And you're left, as managers, to decide if the trend is going up, can we liberalize the regulations; or if the trends are staying level or going down, what do you need to do with the regulations in response to what we think the population is doing.

But it's always sort of a backwards-looking approach as opposed to a formal assessment where you would be able to look forward.

CHAIRMAN FREEMAN: David.

MR. BORDEN: Yes, I appreciate that and I'd just like to encourage the Technical Committee to pursue those types of issues. I think as we collect this data on a coastwide basis, it's going to be very important in terms of our future deliberations to have some sense of how much of a decline really means that we should impose additional restrictions, or how much of an increase allows us to possibly to liberalize regulation?

And I recognize the fact that it's going to take ten years to get really definitive answers to a lot of these other issues. But we're going to be confronted, I think, with those types of choices fairly quickly as this data comes in.

The abundance index is going to vary and we'll have these debates; is that significant; is it not significant; at what point is it significant? Thank you.

CHAIRMAN FREEMAN: Okay, Jamie.

DR. JAMIE GEIGER: Mr. Chairman, as probably all of you know, the USGS Biological Resources Division provides a primary research support to the U.S. Fish and Wildlife Service.

One piece of good news that we did get out of the 2001 budget was that Congress earmarked \$3.4 million of research funds within USGS BRD budget exclusively for the research needs of the U.S. Fish and Wildlife Service.

Now this is intended to be new work and not a continuation of existing work. So I am confident that this will allow us to hopefully get this as an extremely high priority of the Service and the Commission, and allow BRD to satisfy some of these ongoing research needs that we need to address both on horseshoe crabs as well as on migratory birds. Thank you, Mr. Chairman.

CHAIRMAN FREEMAN: Thank you. Gordon.

MR. COLVIN: I was going to follow the suggestion you made earlier, Mr. Chairman, and hold off on this, but given the way this conversation is going, maybe I'd like to make this point now.

It seems to me that it's inevitable that the board is going to have to make decisions and develop an overall strategy for implementation of these recommendations.

And in order for us to do that, we're going to need to have a much better idea than I do at this moment of what kind of financial obligations we're talking about here, not just to do the survey itself, but the supporting research that's needed to make the survey results convertible to a quantitative assessment.

So I guess what I'd like to suggest is that it would be very helpful for the Technical Committee and the Stock Assessment Subcommittee to take a step back from this and try to work through their best judgment of the cumulative costs over the eight- to ten-year period we're talking about here, so that if we're going to talk to USGS or the Fish and Wildlife Service or private partners, or our own budget people, we have a much clearer idea of what we're really talking about.

CHAIRMAN FREEMAN: All right. very good. There will be coming up very shortly, from the stock assessment report that Stu will give recommendations for doing some of the work. But it's, in my opinion, a fairly short-term time frame of two to five years. And what you're requesting is beyond that, and I think is a good suggestion.

So, Stu, one of the additional things is to have your committee give some thought as to projected time and budget to do what Mike is indicating with an eight- to ten-year time horizon. All right, any additional comments or questions? Okay, Stu.

Again, if there's no objection, essentially the board will accept the Horseshoe Crab Stock Assessment report.

MR. MICHELS: Okay, the Stock Assessment Committee was also tasked, or asked to develop -- to try and determine the needs of what programs were needed to implement the stock assessment, to move forward on the stock assessment. And they came up with this two-pager that you all may have. It's a memo to the Technical Committee from the Stock Assessment Committee dated 15 August of 2000.

And in that memo they outline several surveys that were needed.

One was the development of the Benthic Trawl Survey protocol and some associated pilot studies. Item two was the genetic stock identification of horseshoe crabs using variation at micro-satellite DNA loci.

Number three was the developing a practical protocol for identifying horseshoe crab recruits for stock assessment purposes.

And Item four was to assess the feasibility of an aerial videography survey as an enhancement to the current ongoing beach spawner surveys for horseshoe crabs. Mike gave a brief presentation at our Technical Committee meeting on each of these.

The Technical Committee agreed with the Stock Assessment Committee's recommendation for the expenditure of state challenge funds that are necessary for progressing towards a formal stock assessment.

At the very least, the Technical Committee agreed that funds should be allocated as soon as possible for the genetic stock identification work, using the variation at micro-satellite DNA.

The Technical Committee also recognized that the study to assess the feasibility of aerial videography, although not a critical program or data need, it's a low-cost item that can provide an important check to the existing spawning surveys that are ongoing and may provide a method to assess the spawning activity in some of our more inaccessible areas.

CHAIRMAN FREEMAN: One of the items in Stu's report on this memo also gave an estimated budget for the items. For example, the benthic survey, the trawl survey, you can see starts out with a workshop, which would be a gathering of people who have been involved in survey design to come up with what they would put down on paper as a pilot survey.

And then this survey would be conducted for the first year at the cost of about \$50,000. And then the final design, adjustments, design, and implementation with a contract, and this, I guess, Stu, this would start out at \$35,000 per year price tag. Is that what the 35 tag is for?

MR. MICHELS: That's to contract an individual to oversee the project, I think.

CHAIRMAN FREEMAN: All right, paid to that person?

MR. MICHELS: Yes. One of the issues that came up is how best to proceed with the development of a benthic survey. I should also note, too, that there is -- although there's numbers here, they were not ranked in any particular order neither by the Stock Assessment Committee nor the Technical Committee.

The Technical Committee believed that each of these was an important component to a future stock assessment. But, there's a couple ways to proceed with the possible development of a benthic trawl survey.

One of those was through NEMAP and Atlantic States, and another possibility is to contract the work out to a university, allow, perhaps, a post doc student to concentrate on this.

And that way we have a single individual who will be responsible and accountable to this and can dedicate their time to this one issue. It's something, through the Atlantic States process, it's often catch a catch can.

And many of us have other things going on and the benthic trawl survey may not receive as much attention as is required.

CHAIRMAN FREEMAN: Okay, let me do this, if there's no objection. I know this is an important item, there's probably considerable discussion. Gordon, some of the questions you asked, and I think others will ask, will be how do we move on going about some of these projects?

As Stu indicated, there's no ranking or prioritization, but these are items that the Technical Committee believes are necessary to get this whole issue moving forward.

And it far exceeds what we have contributed so far by the states. Let me, at this point, just temporarily move us along the agenda. There's a number of items that are going to be very important that I want to make sure we cover, and then come back to this.

If we do not have time to complete that during this meeting, because we are almost through our time commitment, is that prior to the end of the meeting, I would ask the Technical Committee to prioritize these and then assign a number of board members to review these in order to initiate moving forward with some of them.

I just asked Dieter when our next board meetings will be, and they haven't been discussed, and I'm sure we'll be discussing those at the Policy Board.

But I want some of these to begin, or I think it's necessary that some of these begin. We do have some money and some of these items I think we can cover immediately. But, I don't want us to run out of time on some of these other items.

So if there's no objection, we'll return to this before the end of the meeting. Is that satisfactory? All right, I want to move on, and, Stu, if you could give us a recommendation of Item C. Recall, board members, that we asked the Technical Committee to look at the issue of possible quota transfers, the issue we discussed at the last meeting.

We made no commitments but asked the Technical Committee to give us their recommendations. I'd like to move to that item.

MR. MICHELS: Okay, Bruce. It was the consensus of the Technical Committee that quota transfers should be considered on a case-by-case basis and should be evaluated upon the following criteria:

Quota transfers and the expected continued absence of estimates of stock size and exploitation rates should occur within a regional area. Those regional areas should be defined by genetic studies that have passed the peer review process conducted by or through the Atlantic States Marine Fisheries Commission.

Quota transfers should include an assessment of current harvest pressure and the expected impacts of quota transfer. And it should also be noted that the states will

retain control of the harvest within their jurisdiction. And those were the provisions that we found.

CHAIRMAN FREEMAN: Okay, those are the recommendations by the Technical Committee. Are there any questions or comments? Paul and then I'll get Jack.

MR. PAUL PERRA: Yes, Stu, what was the rationale for keeping the quota transfers within their regions?

MR. MICHELS: One of the issues was that given that we have a lack of information on the stock, there is some indication in the literature that indeed there are separate sub-populations of horseshoe crabs along the coast.

One item in the literature is a publication by Riska and Schuster gave some evidence of separate populations in different estuaries along the coast. But also there was some concern that exploitation of horseshoe crabs would be concentrated in a single area and could essentially extrapate a population.

CHAIRMAN FREEMAN: All right, Jack Travelstead and then Paul Perra and then I have Dennis.

MR. TRAVELSTEAD: Stu, was there any discussion by the Technical Committee of a relative nature of quota transfers? For instance, was a transfer of 2,000 crabs viewed any differently than a transfer of 200,000 crabs? Was there any discussion about a transfer between adjoining states might be better than between states, you know, several miles apart?

MR. MICHELS: We didn't discuss specific numbers or the magnitude of any possible transfers, anything of that nature. There was a little discussion on transfers within a region, say, in the Delaware Bay region or along the Chesapeake Bay.

And one concern was that, for instance, there's a possibility of a separate Chesapeake Bay population, which if a quota transfer was allowed, you know, that population could be threatened. And that was just one example that was cited.

MR. TRAVELSTEAD: But if I could just follow up? I mean, with all of that in mind, I suppose that's why you did recommend a case-by-case review of any particular transfer?

MR. MICHELS: Yes.

CHAIRMAN FREEMAN: All right, Eric.

MR. ERIC SCHWAAB: Thank you Mr. Chairman. I just wanted to get back to this regional quota question given the report. Obviously, there's still some uncertainty about what those regions might look like, and maybe this relates back to the last question or the last issue.

What might be the timeframe under which we could lend some better definition as to what those regions should be?

MR. MICHELS: I think there's a possibility that we can at least fairly quickly, I'd say, by the end of the year, given the adequate funding, realize or at least try and answer the question on is there separate populations along the coast.

We may not be able to delineate the range of each one of those populations, but we may be able to answer that question if the necessary funding is provided to Dr. Tim King of the USGS who's done considerable with the micro-satellite DNA.

MR. SCHWAAB: So if I could just follow up, the second issue which is defining the actual range, would be some further study that's not even envisioned under the current?

MR. MICHELS: It's envisioned, but to quickly do that, you have to have adequate samples to get adequate coverage, and I'm not sure that we could do that within the next couple months.

Samples, it's my understanding that samples have been collected from a number of states up and down the coast and I think extending as far south as the Yucatan Peninsula. But those samples are waiting to be worked up and funding is needed to provide a staff person to USGS, some staff time to work those samples up.

CHAIRMAN FREEMAN: All right, I have Dennis Abbott and then Jamie Geiger.

REPRESENTATIVE DENNIS ABBOTT: My question has been asked and answered.

CHAIRMAN FREEMAN: All right, Jamie.

DR. GEIGER: Mr. Chairman, we just accepted the report of the Stock Assessment Committee on doing obviously a stock assessment, a proposed framework. I would ask Stu, how does the possible improvement of some kind of a regional quota transfer impact the proposed framework in terms of getting the appropriate information and developing the appropriate models to accurately assess stock population of horseshoe crabs?

MR. MICHELS: Well, it could simplify it in some cases and complicate it in others. I mean, an assessment of that type would probably have to be conducted on a population-by-population basis instead of addressing the issue on a coastwide basis.

DR. GEIGER: Mr. Chairman, just a follow up comment, I guess. I have two concerns on this. Number one, that it may complicate the ongoing micro-satellite DNA analyses that we need to have to ascertain scientifically do we have regional sub-populations of horseshoe crabs.

Secondly, I do continually have concerns that it may compromise the existing framework for the ongoing stock assessment work that we have just accepted their report. And I think that we need to make sure that both of these two scientific elements proceed promptly and quickly and without complications.

CHAIRMAN FREEMAN: All right, additional comments? All right, are there any other comments on the report from the Technical Committee on the state quota transfers? I'm sure we'll be discussing this a little later in the meeting, but these are the recommendations from the Technical Committee at this point.

Also, as I indicated earlier, one of the recommendations from the Technical Committee, the stock assessment, is to do DNA extractions, DNA micro-satellite work.

And there are samples that have been collected already, been analyzed, but there's additional samples that could be analyzed and possibly provide that answer within

three months if we're willing to commit 15,000 of our 150. So that's an issue I'd like to raise at the end of the meeting before we leave it. Stu

MR. MICHELS: Yes, Bruce, I'd just like to point out to you that the Technical Committee did recommend in terms of the genetic work that every attempt be made to allocate some funds to that project as soon as possible.

CHAIRMAN FREEMAN: All right. Before we leave today, we'll get back to this issue and perhaps be able to come to closure on at least some of this money, how we believe it should be spent, and then see how we deal with the rest of it.

Okay, the next issue was the Technical Committee recommendations on the biomedical use of horseshoe crabs. And, Stu, if you'd report on that.

MR. MICHELS: Yes, I guess some of these questions came about because of the FDA requirement to return crabs to the water, blood crabs to the water. And there was some concern that crabs were being taken and not being returned properly to the water.

And there were some questions on whether the FDA requirement to return these crabs was coastwide or on a case-by-case basis.

The Technical Committee agreed that the Atlantic States Marine Fisheries Commission should control whether biomedical harvest is sold as a bait or returned to the water alive. However, it was recognized that more information was needed as well as soliciting input from both the biomedical industry and fishermen.

A question arose during our discussions as to what state should have the responsibility for ensuring biomedical crabs, ensuring that they are returned to the water alive when the crabs were harvested in one state and then taken to another state and bled.

And one case that was cited, apparently crabs are being purchased from the bait fishery in Maryland, being shipped up to Massachusetts and bled. And it's my understanding that these crabs are then used in the bait fishery for conch and eel, I suppose, in Massachusetts.

The Technical Committee also recommended that a second questionnaire be sent to the biomedical companies with modifications to some of the questions and investigate the possibility that there is some discard work that is currently underway by some of these biomedical companies.

But after considering these issues, the Technical Committee recommended that a working group be established to investigate these more closely. We had two volunteers to head up that committee, and they will be soliciting input from the biomedical industry as well as commercial fishermen.

CHAIRMAN FREEMAN: Okay, any questions or comments relative to the biomedical? As Stu indicated, this whole issue of biomedical is getting a little bit more complicated every time we get a report.

Nevertheless, the committee recognizes some of these difficulties and is moving forward to try to better identify these situations, if in fact there are problems, and report back to the board so that we could take action. Are there any questions? David.

MR. DAVID CUPKA: Thank you Mr. Chairman. Just a comment relative to this subgroup. I guess it's still being formed, and I agree you need to have representatives on there from the biomedical industry as well as the fishermen.

But I would also hope that there would be some state people on there, and specifically I'd like to see our South Carolina representative on there because we've had a lot of experience with this.

We're somewhat unique, I guess, in that we don't allow any harvest of bait. It's all for biomedical purposes. We don't allow those crabs to leave our state once they are harvested for biomedical purposes.

And we also have provisions and permits that we give the fishermen that those things have to be returned to waters of comparable salinity. So I would certainly hope that, you know, we would have an opportunity to participate on that sub-group and make sure that our system, which seems to be working well for us, doesn't all of a sudden get out of whack. So I would urge you to consider that when this group is formed.

MR. MICHELS: Can I use your name when I tell that member that he was volunteered?

MR. CUPKA: You certainly can.

CHAIRMAN FREEMAN: Okay, Jamie, did you have your hand up?

DR. GEIGER: Yes, I did. Stu, did I hear you to say that you do have volunteers from the Technical Committee to serve on this ad hoc group?

MR. MICHELS: Yes.

DR. GEIGER: Could you tell me who they are, please?

MR. MICHELS: Sure, it's Peter Hemcheck with New Jersey, who has worked on the biomedical issue before in developing the questionnaire; and also Frank Germano from Massachusetts, who is dealing with this issue with Maryland and Massachusetts. I suppose I would also be involved in that sub-group.

CHAIRMAN FREEMAN: All right, other comments/questions? Jamie?

DR. GEIGER: One more follow up comment, Mr. Chairman. We seem to be having some difficulty trying to get some reliable information out of some of the biomedical industries.

We get some conflicting reports, some difference of interpretations, different numbers, different information, depending upon who you talk to. I would just urge the ad hoc group to certainly make sure that we get -- and again, try to get the best, most complete information from the biomedical industry, so you'll have the information that we need to make better management decisions.

CHAIRMAN FREEMAN: One comment from the Chair, I think also relative to the report that the National Marine Fisheries Service will give -- Paul Perra will give -- that we'll see changes in the biomedical.

This is a dynamic situation. We see changes continuously and we need to continue to monitoring that situation. Remember now that the Food and Drug Administration has taken out of their rule requirements for returning the crabs, and they simply write it into the permit.

And we've seen already this year that permits have been asked to be modified, and have been modified by FDA. And it's a situation that may change instantaneously. So it's an issue I think the board has to deal with.

I personally would like to see the commission dealing with the management of the resource and tell FDA what is necessary and have them incorporate it into their permits rather than simply have them, however they do it, just make those changes, because it does affect where these crabs are harvested and where they end up being released.

And that could have grave implications from the management aspect. Okay, we'll continue monitoring as Stu indicated. This committee has been formed. David will include people from South Carolina. Any other board member who would like to have membership in this, please see me or Stu.

This isn't certainly a closed issue. We essentially had volunteers so we took advantage of them, but we will continue on this biomedical. I think it's going to become an important component of the plan.

All right, Stu, if you would continue with your last item E.

MR. MICHELS: Right, Item E, the time line for submitting state Horseshoe Crab annual reports. Under the current March 1st due date, any recommended adjustments by the Plan Review Team would be nearly impossible to adopt in time for the spring fishery, given the need for review by the Technical Committee, the Advisory Panel, and the Management Board.

A January due date was considered by the Technical Committee, but given that some states has significant landings in the late fall and the early winter, it was felt that much of the landings data in the reports would be incomplete.

The Technical Committee did find that a more modest adjustment was reasonable and would improve the possibility of accommodating changes.

The Technical Committee, therefore, recommends that the compliance reporting date be move to February 1st of each year. We discussed this as a Technical Committee and everyone thought that was a reasonable time line; although it would be difficult in some cases, that it could be done.

CHAIRMAN FREEMAN: All right, questions or comments? Essentially what the Technical Committee indicates, it would move up one month the reporting requirement. As Stu has indicated, some states indicated it would be difficult, but could be done.

I think this is something the board should take action on, either we agree or disagree. Is there any discussion on moving this from February 1 to March 1? David.

MR. BORDEN: Yes, unless there's objection, I suggest we dispense with a motion and simply adopt it. If anyone objects, they should speak up.

CHAIRMAN FREEMAN: Any objection to moving it up one month? All right, seeing no objections, then we'll incorporate this change. Susan.

MS. SUSAN SHIPMAN: I don't know how the other regions do this, but in the South Atlantic, it's my understanding, I don't think we consider our landings for the previous year to be final until August.

So while we can certainly report to you what a previous year's landing were early in the calendar year, technically you're not going to have final landings until much later in the year.

And I think everybody just needs to understand that because numbers may change and people are always asking, well, why did those numbers change, and I think everybody needs to recognize that.

CHAIRMAN FREEMAN: We accept that, Susan. I think the issue here is if in fact there's any action need to be taken, the dilemma we are -- the reporting so late, that we can't take the action, so the issue is can we get reporting earlier so we could possibly take an action if one is necessary, realizing that the numbers may not be final.

But if there's a substantial increase or decrease, at least preliminarily we should know that. And that's really what this request is.

Okay, with those comments, let's move on to Paul Perra's report. This would be the update -- before I leave this, Stu, is there anything else?

MR. MICHELS: There are a couple of odd items but given our time line here, we'd better make --.

CHAIRMAN FREEMAN: Okay, if we have time we'll get back to those. Paul would you please report on the Fisheries Service activities?

MR. PERRA: Basically, we published a rule in the Federal Register on the 16th, which says if Virginia doesn't comply with the quota system for the management plan, the moratorium would be effective on horseshoe crab fishing and any landing of horseshoe crabs in Virginia waters on October 23rd.

We also published a second action, which is a proposed rule for the closed area off the mouth of Delaware Bay. It has a 15-day comment period, which will end October 31st.

CHAIRMAN FREEMAN: All right, questions, comments? Mr. Pruitt.

MR. WILLIAM A. PRUITT: Mr. Chairman, thank you again for allowing us to comment on this issue. I also want to thank the Technical Committee for it's fine work. I'm not going to -- we have a commission meeting next Tuesday where this will be reported to the full commission, our commission, the Marine Resources Commission, Newport News. The comments that I made at the last meeting was in the minutes, and I stand by those comments. I do want to make a couple of quotes that Jack or I have made last month. What we're asking the board to do today is allow us to transfer quotas like we do in any other fishery.

I think quota transfers actually make more sense in the Horseshoe Crab Fishery than in any other because the quotas are based on harvest estimates and not on usage. If we can do this, we can come into compliance next week. By doing this, this being the right thing, it will keep fishermen in business. It will keep the biomedical people in business. It'll protect the birds. It doesn't affect any of that because the quotas have been set and it'll be below the quotas, anyway.

And we care about this resource, too, and we want to see this resource protected. And if I thought this was not doing that, I wouldn't make this request today. This is one of those rare occasions where doing the right thing helps everybody. And if we could do that today, we would greatly appreciate it. Thank you very much.

CHAIRMAN FREEMAN: All right, additional comments? Jack.

MR. TRAVELSTEAD: Just to follow up on Commissioner Pruitt's comments, I guess as long ago as last winter, Virginia indicated that it would support the quota that you want us to adopt if you would allow for the voluntary transfer of quotas between the states.

And we continue to hold to that agreement. And in light of the Technical Committee's report today, we would like to offer a motion, which is coming up on the screen now.

I would move that the Horseshoe Crab Management Board initiate the development of a plan amendment or an addendum to provide for the voluntary transfer of Horseshoe Crab Quota among states.

The provisions of this amendment or addendum shall include requirements for a case-by-case review of each such transfer; specifically, a review by the Technical Committee, and approval in advance by the management board before any transfer can occur.

We believe this motion is fully consistent with the recommendations you heard today from the Technical Committee. It leaves the final decision for any particular transfer to this management board.

It makes transfers absolutely and completely voluntary. There's no compelling reason that a state would be required to transfer. It has nothing to do with whether or not they caught their quota or didn't.

It would allow for technical review; and as the science on this issue changes, that could certainly be taken into consideration. But perhaps most importantly, as Commissioner Pruitt indicated, your acceptance of this motion today would allow Virginia to comply with the Fishery Management Plan fully on Tuesday of next week, thereby avoiding the moratorium.

We think it's a common sense type of solution to the problem. It takes into account all present and future science on this resource. And we hope that you'll agree to pass this motion today.

CHAIRMAN FREEMAN: All right Jack, you offered the motion, is there a second to that motion?

MR. AUGUSTINE: Second for discussion purposes.

CHAIRMAN FREEMAN: Mr. Augustine seconded for discussion. Discussion? David.

MR. BORDEN: Thank you, Mr. Chairman. Just a quick question for Jack. Is it your intent, Jack, that no transfers would take place until the addendum is finally approved?

MR. TRAVELSTEAD: I don't see how they could take place until the addendum is approved. That's the purpose of offering the motion.

MR. BORDEN: I just wanted to make sure that was the case.

MR. TRAVELSTEAD: While I have the mike, Mr. Chairman, if I could just address one other issue that I've had some side bar conversations with some of you, and there appears to be some rumor floating around that Virginia is already well beyond it's ASMFC quota this year. And let me assure that that is not the case. We have a good mandatory reporting system in Virginia. We're monitoring landings of this resource every week. The reports that I have through September 1st are that we have landed about 71,000 crabs, which is slightly less than your quota.

I think part of the confusion may be a report that was circulated several months ago that was expressed in terms of pounds of crabs that was confused for numbers and may have indicated a number that was substantially higher than the number would have been if it was correctly identified.

But we are, through September 1st, at about 71,000 crabs. I am aware that there were some landings in Chincoteague last week. I can't tell you how much they were, but I can assure you that they have not put us well over our quota.

CHAIRMAN FREEMAN: All right, David.

MR. BORDEN: Thank you, Mr. Chairman. One additional question for Jack. Given constraints on staff, time in particular, and budgets, which will be apparent once we get into the policy board deliberation, I guess my question to you would be is your state willing to commit staff to assist the commission staff in the preparation of the addendum?

MR. TRAVELSTEAD: Absolutely. I mean, if that's what it takes, we'll commit whatever staff time it takes to do this. The other question you'll note --

MR. BORDEN: Thank you for volunteering.

MR. TRAVELSTEAD: Absolutely. You'll notice in the motion that it says amendment, addendum. It's not clear to me at this point which of those is appropriate. I've asked the Executive Director to research that and at some point make a determination as to whether it requires an amendment or an addendum.

CHAIRMAN FREEMAN: Let me call on Jack Dunnigan to offer comment.

EXECUTIVE DIRECTOR JOHN H. DUNNIGAN: Thank you Mr. Chairman. I've had an opportunity to look at the Fishery Management Plan and in my view, so long as the board doesn't think that this is a fundamental change to the whole concept of horseshoe crab management, I believe you could do this by an addendum.

CHAIRMAN FREEMAN: All right, Jack, while you're at the mike, let me ask you a question relative to the motion. Normally a motion would be to go through the amendment or addendum process to, let's say, allow voluntary transfer. This motion is even more specific. Not only does it allow it, but there's conditions on how it allows it. If the commission were to begin such a process, do you feel comfortable that this motion is something that we could deal with, because it is much more specific than we normally deal with; does that create a problem at all?

EXECUTIVE DIRECTOR DUNNIGAN: No, I don't think it creates a problem in being able to move the paperwork and get the action done. As you point out, it is more limiting than our typical process for transfer of quotas. But as long as you all feel that that's appropriate for horseshoe crabs it doesn't, I don't see any process issues or other things that would be a problem.

CHAIRMAN FREEMAN: Well, from a Chair's perspective, this was a recommendation made by the Technical Committee, and it appears Virginia is trying to incorporate these recommendations, and I applaud them for doing so. I just want to make sure we don't run into a problem if we want to proceed in that direction. But you indicate there is none.

EXECUTIVE DIRECTOR JACK DUNNIGAN: I see no problem.

CHAIRMAN FREEMAN: Okay, I had Jamie and then Bill Adler.

DR. GEIGER: Mr. Chairman, a question to Jack. On page 310 of the minutes of the last board meeting, Jack, I asked you how many horseshoe crabs that Virginia currently has in cold storage. I just want to get a confirmation of that. Was it 200,000 crabs or 200,000 pounds?

MR. TRAVELSTEAD: Crabs. Crabs, not in pounds.

DR. GEIGER: Thank you, Jack.

CHAIRMAN FREEMAN: Okay, Bill,

MR. ADLER: Jack, first of all, so what you're saying here is that if this motion, which simply approves the developing of addendum to allow transfers is to be approved, just the beginning of an addendum, that you would shut down, or you would be able to shut down your fishery on October 23rd of this year to be in compliance; is that correct?

MR. TRAVELSTEAD: No, I think you're a little confused. The federal moratorium is due to go into affect on October 23rd. That will shut our fishery down. And incidentally it will prevent us from using those 200,00 crabs in cold storage as well.

The moratorium does apply to those. What I'm saying is passage of this motion will allow the Marine Resources Commission to consider an amendment to its current regulations that would read something like this: that the quota, the Horseshoe Crab Quota in Virginia is 155,000 crabs, plus whatever other quota might accrue to Virginia by way of a transfer, the total not to exceed 355,000, which is our current quota.

If there are no quota transfers this year, then the total quota is 155,000 in Virginia, which complies with the Management Plan. And if we find on November 3rd we've hit 155,000, then the fishery shuts down.

MR. ADLER: Okay, there are two things here. First of all, you're going to be able to get by this year by stopping the harvesting of your crabs because you -- if this motion gets passed, then you go for the amendment on your board, which technically stops the harvesting of the crabs in your state, because then you're using the frozen ones to get through this year. Is that how this you're going to get through this year, because we can't transfer it now, in other words.

MR. TRAVELSTEAD: We're going to get through this year with the crabs that we have in cold storage and the 155,000 crabs, some of which have yet to be harvested.

MR. ADLER: And this is something you can do, whereas at the last meeting there were all these things you couldn't do because law wouldn't allow you to do this. But passing this motion will allow something that you couldn't do last time?

MR. TRAVELSTEAD: That's right, that's right.

CHAIRMAN FREEMAN: But just for clarification, Jack, so we don't lose track, the initial allocation for Virginia for this year is 152,495 crabs. And that's the number you'd be using?

MR. TRAVELSTEAD: That's right.

CHAIRMAN FREEMAN: We sort of generalized, but I want to make certain that's the number.

MR. TRAVELSTEAD: Yes, that is the number.

CHAIRMAN FREEMAN: All right, further discussion? Dennis.

REPRESENTATIVE ABBOTT: Thank you, Mr. Chairman. Next week you said that Virginia could be in compliance by taking 152,495 crabs.

You initially, back last year or earlier this year, said that you wanted a quota of 710,00, and you couldn't change that number without legislative action.

Suddenly you came back to the last board meeting and you're able to reduce that magically in half. And apparently, through some magic, by next Tuesday, lacking legislative action or whatever, you're going to be at 152,495 crabs, and I just don't understand all of that Jack. Could you help me out?

MR. TRAVELSTEAD: Yes. First of all, it's nothing to do with magic, I can assure you of that. You have to look at the law in Virginia. And I can't quote it to you verbatim, but it requires the commission in Virginia to balance available science against the impacts of a regulation might have on its industry.

We set a quota initially of 710,000 crabs as an attempt to cap harvest in the fishery. We did that two years ago before ASMFC even had a quota. Science came along and said if you use bait bags, you can reduce your needs in half.

You're weighing that science against the impacts to industry. Industry said bait bags work; therefore, there is no impact to us if you cut the quota in half. Okay? So there were no impacts.

As long as there are no impacts, you can adopt whatever regulation you want in Virginia. That's how we did the 355,000. Industry is now saying to us that they're willing to, on good faith, assume that there will be transfers in the months ahead from other states that will help meet their needs.

And, therefore, once again, there will be little to no impact. And so the commission, in the balancing of those decisions, can move forward with such a regulation. I mean that's as clear as I can get without calling in the attorneys, I guess.

CHAIRMAN FREEMAN: Okay, Eric, I think you had a question.

MR. SCHWAAB: Thank you, Mr. Chairman. Actually I have two different sets of questions. The first would be a procedural question about the timing of the addendum process. And a comment relating to that is I think a fairly important consideration in any review of transfer would require us to first answer the question of this coastal population versus the regional populations and related definitions.

So I would hate to see an addendum proceed in advance of the ability of the Technical Committee to react appropriately to answering those questions. So that's a comment and concern that I have.

The second set of questions or concerns relate on just the process. This is a final notice that NMFS has put forth and I just wonder, a question for Paul or Jack or both, on what procedurally would occur here if in fact this were to be adopted, and Virginia would then by action of VMRC come into compliance.

I would assume that regardless this notice takes effect on Tuesday, and what would happen?

MR. PERRA: It takes effect on Tuesday and we would have to publish a notice of withdrawal of a moratorium. That could take a few days. That could take a long time. I mean, in these cases when it's clearcut, it's usually pretty quick.

But we would have to do some processing and get it signed off and published. So it may take a few days after Virginia acts, or even longer, depending on how controversial it is.

CHAIRMAN FREEMAN: Jack Dunnigan would you care to comment? From our standpoint, would you simply lay out what the probable scenario would be from the commission's standpoint.

EXECUTIVE DIRECTOR DUNNIGAN: Thank you, Mr. Chairman. The way the commission's procedures work on withdrawals of non-compliance, recall that whenever the commission approves a non-compliance determination, it is required to specify what actions the state has to take to come back into compliance.

Under our rules, if the state does that, the Chairman has the authority to lift the non-compliance determination. If the state does something else that it thinks is just as good, then that has to come back to the board and the commission.

But in this case it seems to me that what's being proposed here is for the Commonwealth to do those actions that the commission specified. And in that instance, the Chairman of the Commission, as soon as those actions are taken, would have the

authority to lift the non-compliance determination. And we would report that immediately to the Secretary.

CHAIRMAN FREEMAN: All right, additional comments by board? Tom and then Lou.

MR. TOM FOTE: What I see here is it really doesn't change the quota at all. It makes Virginia go into quota we basically voted on. And all it does is put out an addendum process or an amendment process.

The process has to go through public hearing; comments will be taken on when it goes. If the transfers are ever made, they'd have to be reviewed by the Technical Committee, so the Technical Committee has got to make a determination on where the stocks come from.

So with all the safeguards have been put in this, I have no problem with this motion. I don't know how the other two commissioners are going to vote, but I don't have any problem with it.

CHAIRMAN FREEMAN: Okay, Lou.

MR. LEWIS FLAGG: Well, I think Tom was getting at the issue that I had. I mean, if you're looking at a quota transfer, what you're essentially saying is that if a state has an established quota and it doesn't use it, then it has the option to transfer some of that quota to another state.

It doesn't mean that more crabs are coming out of the water; it's only the crabs that are allowed to be harvested based on a quota. So, you know, I really don't see a problem with the way the motion is framed. And I think it's going to be a very easy analysis.

CHAIRMAN FREEMAN: Okay, Susan.

MR. SUSAN SHIPMAN: I agree with the previous speakers. I think one issue here that may be a little bit different, and I think there is a safeguard in this motion is the fact you may have localized population of crabs.

This is not like some of the migratory finfishes. So I do think the quota transfer issue may turn out to be different in this particular case. But I do believe that with the Technical Committee's recommendations and the ability to probably fairly quickly, with the adequate fiscal resources, to determine sub-populations, I think this is an adequate safeguard. And I would support the motion.

CHAIRMAN FREEMAN: Additional comments by the board? Any comments by the public?

MR. PERRY PLUMART: Thank you Mr. Chairman. I'm Perry Plumart with the National Audubon Society. I guess that there seems to be a lot of safeguards in this particular motion.

I would, however, point out that the goal of the Horseshoe Crab Management Plan is not to provide for the bait needs of various industries. The goal of the Horseshoe Crab Management Plan is to adequately balance the needs of the bait industry, along with the population of the horseshoe crab and along with the population of migratory shorebirds.

And I think what we, as you know, and as we've discussed in this forum in the past, is that the 25 percent cutback from reference period landings, we felt, was, one, very low.

We advocated it originally as 60-80 percent cut back from reference period landings. Unfortunately the board rejected a 50 percent cutback from reference period landings and went to a 25 percent cutback.

And, as you also know, we believe that some of the reference period landings in many states have been set too high. And so, I guess the concern is when you say that the quota is not being used up and that it's okay because that's biologically determined to be the right level, I think that that's an underlying assumption that we would believe is in serious question.

We still believe the reference period landings are too high and that a 25 percent cutback from reference period landings is absolutely the bare minimum that is needed to protect the long-term interests of the horseshoe crab population, the fishermen, and the shorebirds.

And so I hope when you're deliberating on this, that it's not the bait needs that should be put first. It's what in the interest not only of the fishermen, but the population and the shorebirds. Thank you, Mr. Chairman.

CHAIRMAN FREEMAN: All right, thank you. Any additional comments by the public? Jack, I want to make absolutely certain, or Bill, from the Virginia perspective, that if indeed the board votes favorably toward this, the commitment from the commission is to start the process. It has to go through public hearing, and we don't know what the comments will be.

I mean, there's an unknown here. And, if in fact the comments, the majority of those comments are favorable, and this action is put in place by either an addendum or an amendment, that once that process is in place, the state of Virginia may or may not get volunteers to change their allocation. I mean, is that your understanding?

MR. PRUITT: Yes, sir, Mr. Chairman, we understand that.

CHAIRMAN FREEMAN: Okay, I just want to make absolutely certain that the board and Virginia --

MR. PRUITT: There's something I want you to understand, too, since we're being very candid here. The commission meets on Tuesday. The full commission is nine citizens appointed by the governor of the commonwealth.

What I'm telling you today is that I'm taking it to that commission. And based on the knowledge I have of that commission, I think it will pass. Now you've been around long enough to know you can't call a board all the time. So in good faith, I think I have the votes on that commission to pass it.

CHAIRMAN FREEMAN: Okay. Well as long as we understand, and I want the board to be perfectly clear that this obviously is an issue we perhaps can resolve in a way that it will save a lot of time and effort. But I want to make there's clear understanding. And I appreciate your candidness, Bill.

MR. PRUITT: Mr. Chairman, I also want to, if I may, before you call the roll, I'd like to thank you personally for this. And I've given this a lot of thought and this morning Dr. Bill Hogarth, who is a Virginian by birth, that was left out of his -- he's from the Commonwealth.

That was left out of his introduction this morning, but he said something that really got my attention. I had absolutely no idea -- and I've talked to a couple of my colleagues here and apparently they knew more about it than I did -- that there were that many lawsuits out there.

And he used the term "Fishery Management by Court", or something like that, or in court. I didn't like -- I know he's right. I didn't like that. I don't want to manage fisheries in courtrooms. I want to manage them the way we're doing it here with this record.

This process is what's at stake here, in addition to conservation. I care about crabs as much as the gentleman that spoke from the audience. And I think this process affirms that.

CHAIRMAN FREEMAN: All right, any additional comments by the board? I think we need to be clear on this. Jamie.

DR. GEIGER: Mr. Chairman, I still have concerns about whether if we approve this motion we may still run the risk of compromising the sound science that Mr. Pruitt has commented that he feels is still somewhat lacking on this Fisheries Management Plan.

I would hope after the presentation of the Technical Committee that you are assured, Mr. Pruitt, that we are trying to pursue the soundness and best science in terms of the management process, and that we hope to use that good, sound science in these management decisions.

My concern again is, quite frankly, follow through from the state of Virginia. I appreciate your concern and your candidness in making this motion. I think it's a good step forward, but I'm still somewhat concerned about the commitment of the Commonwealth to follow through on this process.

MR. PRUITT: Mr. Chairman, since he directed that to me I'd like to respond. Your comments -- and I've just read them again in the minutes from the last meeting -- about science, you're right on the part about water quality, habitat enhancement and so forth.

There's some good science out there on that. What I was referring to was the science that was brought to this commission, this board and the commission by the Technical Committee.

No fault of the Technical Committee; they didn't have anything to work with. There were no reference periods. It was terrible. If we had had that in the rockfish situation and the weakfish situation, it would have never passed this commission. That's what I was saying.

And let me say this, to me, and we can't manage that. We manage fishermen and we try to manage fish. But this commission, ASMFCA made a great leap forward several years ago when it established a habitat committee.

That committee is the committee of the future. It's there where the answers lie. If we don't get control of growth, out of control growth and that type of thing, the fisherman doesn't have a chance.

Hemingway wouldn't write about fishermen today. And he wouldn't write about them in several years because there won't be any if we don't get a handle on the habitat.

And I also applaud the commission on what it did in bringing industry around the table, the advisory committees, and Jack Dunnigan was way ahead of his time on that, and it's done so much up and down the coast.

Industry now at least feels like they have a voice, they're being listened to, anyway. And I just don't know what to do to assure you beyond that. I'm committed to good science. Virginia Institute of Marine Science, by code, has to give me good science.

And I wish I could go through my thirty-plus years career in public service, from the heat in Vietnam to the board rooms, but I don't think you need to go through all that.

CHAIRMAN FREEMAN: I'm not sure which is worse.

Mr. ADLER: Mr. Chairman, can I move the question?

CHAIRMAN FREEMAN: Yes you can, but let me just make a comment. I'm still concerned about the process. If in fact the board approves this, and Bill Pruitt as you indicate, it will be contingent upon your commission if, for example, the board approves this and your commission doesn't, I'm not sure.

It appears to me that the moratorium will probably be put upon Virginia. And I'm just wondering, either Jack or Paul could give some indication of how this scenario would work out. I just want it be clear in people's minds. I'm not sure it's clear in mine.

Is it clear in everyone's but mine? Well, let's vote then. All right, despite my reservations, I will call the question and this will be a roll call vote? Caucus, 3-minute caucus. Please return to your seats and we'll have a roll call vote.

MR. DIETER BUSCH: We're all set then, okay. Florida.

FLORIDA: Yes.

MR. BUSCH: Georgia.

GEORGIA: Yes.

MR. BUSCH: South Carolina.

SOUTH CAROLINA: Yes.

MR. BUSCH: North Carolina.

NORTH CAROLINA: Yes.

MR. BUSCH: Virginia.

VIRGINIA: Yes.

MR. BUSCH: Maryland.

MARYLAND: Yes.

MR. BUSCH: Delaware.

DELAWARE: Yes.

MR. BUSCH: Pennsylvania.

PENNSYLVANIA: Yes.

MR. BUSCH: New Jersey.

NEW JERSEY: Yes.

MR. BUSCH: New York.

NEW YORK: Yes.

MR. BUSCH: Connecticut.

CONNECTICUT: Yes.

MR. BUSCH: Rhode Island.

RHODE ISLAND: Yes.

MR. BUSCH: Massachusetts.

MASSACHUSETTS: Yes.

MR. BUSCH: New Hampshire.

NEW HAMPSHIRE: Following Jack's good answer to my question, yes.

MR. BUSCH: Maine.

MAINE: Yes.

MR. BUSCH: Fish and Wildlife Service?

U.S. FISH AND WILDLIFE SERVICE: As a three-time resident of the state of Virginia, yes.

MR. BUSCH: National Marine Fisheries Service?

NATIONAL MARINE FISHERIES SERVICE: We're going to abstain on this, as usual.

CHAIRMAN FREEMAN: All right. The motion passes with one abstention. Mr. Borden

MR. BORDEN: Thanks, Mr. Chairman. I'd just like to personally thank the representatives of the Commonwealth of Virginia for all the hard work they have done on this issue. I know it's been a difficult issue for them and they had to seek significant compromises in order to bring this forward. And I think both Bill and Jack deserve our praise.

CHAIRMAN FREEMAN: Okay. Dick, is that Dick Schaefer out there? I'll recognize Dick Schaefer.

MR. DICK SCHAEFER: If you don't recognize me, I don't know where you've been. I used Grecian formula white this morning.

CHAIRMAN FREEMAN: That's what confused me.

MR. SCHAEFER: I just want to raise a general concern, and it's sort of a selfish one. One could argue that based on the vote that was just taken, that the provisions of the Atlantic Coastal Fisheries Cooperative Management Act with respect to findings of non-compliance have worked exactly the way it's supposed to. And I can't take issue with that because it has. The action that the Secretary took and that this Board took and the Commission took either influenced Virginia's position or forced it, as one might argue. But I regret that, frankly, it has to come this.

I regret that this kind of an accommodation couldn't have been worked out at a much earlier date, which would have preempted any finding of non-compliance by the commission.

My selfishness here is with respect to the staff time that's been eaten up for more than six months just on horseshoe crabs to get us here today. Tom Meyer and Paul Perra and my staff have literally been doing nothing else but writing environmental assessments, proposed rules, advanced notices, proposed rulemaking, et cetera, et cetera.

It's been very trying and all the energy basically ends up sort of being negative. And you say, what's it all for? And again, one could argue, well it's worked the way it has. But I think the strength of this commission is in the union of its members. It's not in the chinks in the armor.

And I would just urge the commission, as one of the allegedly old sages, and I emphasize old, that these kinds of positions can't be worked out among this body long before we have to move down the avenue of findings of non-compliance and all the consequences thereof. Thank you.

CHAIRMAN FREEMAN: Thank you, Dick. Any other comments by the board? Bill Adler.

MR. ADLER: I think that there should be a simplicity act, then, put into the Congress to make some of the methods a little simpler than that excruciating explanation of what they had to go through. And I feel for them because I understand that, but it's too bad it has to be that complicated.

CHAIRMAN FREEMAN: Eric, yes.

MR. SCHWAAB: Before we move off of the National Marine Fisheries update, I wonder if Paul could address the at-sea transfer question and where we stand on that?

MR. PERRA: Basically that's been on the back burner and we're going to take it off the back burner if the Virginia situation goes away. And hopefully we'll get it in by the end of the year.

CHAIRMAN FREEMAN: Okay, one issue that is still hanging, if you recall, there was a recommendation made by the Technical Committee to do a number of studies. One of which is to do the micro-satellite DNA Losi work.

And the recommendation is that this could be done within three months. That would be by the end of this year or the beginning of next year, if in fact the \$15,000 is made available. It is my understanding that the samples have been collected; it's simply a matter of preparing those samples and running the analysis.

It is my opinion that we should, we, the commission, the board should take part of that \$125,000, or at least \$15,000 out of that to make the commitment to move forward with this. This would run parallel with the adoption of this motion, the action Virginia would take at their commission meeting.

If in fact things go the way Bill Pruitt indicates and the commission will agree, the next issue is going to be dealing with the genetics work.

And if we're going to have to delay this another six months, it's simply going to delay the process longer. And I would recommend that the board agree on allocating the \$15,000 from this fund to do that work. Are there any comments or suggestions or rebuttals of that?

DR. GEIGER: Mr. Chairman, remember I said that within this year's FY 2001 budget, Fish and Wildlife Service basically has an earmark of \$3.4 million on USGS BRD funds.

I believe, as I understand correctly, that the micro-satellite DNA analysis is proposed to be done by Dr. Tim King at the Science Center.

Since obviously that is an organizational unit under BRD, what I would suggest, sir, is that it may be more appropriate for us in the Fish and Wildlife Service to indicate that this is indeed one of our highest priorities for use of some of that 3.4 million, and get that done somewhat internally, which would hopefully put the dollars necessary to do this to other high priority research and resource management needs.

CHAIRMAN FREEMAN: All right, thank you Jamie. Dieter?

MR. BUSCH: Thank you, Mr. Chairman. In meeting with Dr. Tim King, as I already mentioned, he has 400 and some samples that are not adequate to cover everything along the coast, but to at least give a snapshot of whether we have one population or we have to be concerned with sub-populations.

He indicated that he would do this work on credit for us as long as he would be reimbursed for this. So if the board, and, Mr. Chairman, if there's a commitment made to have this work done, that could be so indicated to Dr. King.

And whether it's paid for out of the state funds that we have or whether it's paid for by the Fish and Wildlife Service could actually be addressed, because, like I said, he's willing to this on credit. Thank you.

CHAIRMAN FREEMAN: All right, in order to move this, we'll take you up on your offer, Jamie. We're always willing to accept funds, but we would ask you that that the Service treat this a high priority and move as expeditiously as quick as possible to indicated to Dr. King to move forward with this work.

If for some reason there is some way the money is not forthcoming, then we may have to commit part of our \$125k. But we'll anticipate that the Service will be able to expedite this using their 3.4 million. Hopefully, it doesn't use it all up.

All right, the last item then we have is update of the Fish and Wildlife Service on their formation of the Shorebird Technical Committee. Jamie.

DR. GEIGER: Mr. Chairman, I'm pleased to report that some progress has been made on this issue, though not as much as I would have liked. Our Migratory Bird Office has initiated the process to seek nominations on shorebird experts to put together this expert panel.

I know the Washington Office Migratory Bird staff has been in contact with some of you. I understand that these nominations will be discussed at a Migratory Bird meeting scheduled in November in the state of Massachusetts.

And hopefully a letter will be generated very shortly back here to the commission informing the commission of these migratory bird experts, and hopefully giving some timeframe by which their availability may be made. And, Mr. Chairman, if I can turn the microphone over to Director Manus of Delaware for possible further update.

CHAIRMAN FREEMAN: All right, any comments or questions of Jamie? Andy, did you have your hand up?

MR. MANUS: Yes, you'll recollect at the last board meeting I made a comment that the state of Delaware had sent a challenge to the U.S. Fish and Wildlife Service in the form of a letter in commitment of \$15,000 to undertake some of the necessary research for shorebirds.

We didn't have that letter acknowledged or responded to. Last week I had a chance to chat with Cindy Perry from the U.S. Fish and Wildlife Service Migratory Bird Office about that letter and a response from the Service.

And I'm happy to announce that the Service is moving forward with establishing the Shorebird Technical Committee. The Shorebird Technical Committee will be responsible for advising this management board on research needs for shorebirds and also on status and trends.

The Shorebird Technical Committee will also be the beneficiary of an external peer review that'll have on it international experts on shorebirds who will take a look at those shorebird data in a similar fashion that we had the stock assessment done for horseshoe crabs, so that we can put them on the same sort of level playing field that we have for the horseshoe crab fishery.

We'll have the avian equivalent of a stock assessment done, and that will be external to the Shorebird Technical Committee. The Shorebird Technical Committee will help support that effort.

And the U.S. Fish and Wildlife Service, it's my understanding, will be funding a couple of folks to pull together those various datasets on shorebirds, and the literature, so that the external Peer Review Panel can have ready access to that information and begin their peer review, hopefully, some time before the end of this year.

With respect to the way this board has been very effective in targeting some of the limited research dollars that we've been able to accumulate, through the generosity of a number of states, a number of organizations, I would just like to point out for the record that the state of Virginia said one of the reasons that they've reconsidered their position was the work that was done on bait bags that allowed them to pass a regulation to cut the use of horseshoe crabs in half.

A lot of that effort was spawned through some discussions here amongst members of the board. And there was a private non-profit in Delaware, EDRG, that seized upon that opportunity and moved that concept forward in cooperation with the Delaware Division of Fish and Wildlife and the Virginia Institute of Marine Sciences, and put together that program for a few thousand dollars that I think is going to have tremendous payoff.

So when we talk about some of the research needs we have here, we've just seen a very vivid example of how a few research dollars can make a big difference. So I just wanted to have that on the record. And I thank you very much for indulging me, Mr. Chairman.

CHAIRMAN FREEMAN: All right, thank you. Jack.

MR. TRAVELSTEAD: I just want to follow up on that. While VIMS has completed its research on bait bags, they continue to move forward looking at alternative baits, and I believe in the months ahead will look at combinations of five or six different items that they think show some potential.

I think they include cownose ray flesh, shrimp waste, blue crab waste, and various components of the horseshoe crab blood that are not used, but are waste products from the biomedical industry.

They're going to look at all those things in combination, working with the industry, and we'll have a report for the board on that in the months ahead.

CHAIRMAN FREEMAN: All right, thank you very much. Jamie, one last question on your report. I was chatting with Stu, and you may have mentioned it, but I didn't hear this, but clarification on the Service's intent to include members of the Horseshoe Crab Technical Committee and Plan Coordinator, did you address that?

Obviously, you addressed the issue of the committee, but the membership.

DR. GEIGER: The membership of the committee?

CHAIRMAN FREEMAN: Yes.

DR. GEIGER: Okay, I am looking at some recommendations of nominations that are being solicited currently by the Migratory Bird Office in Washington. And certainly, hopefully, Region 5 and Region 4 will be consulted in terms of those nominations as well.

I envision, hopefully, a good number of state experts to be included in this panel, I would hope.

CHAIRMAN FREEMAN: Okay. And, again, there was a request that one or several Technical Committee members be included on that. and that's a consideration.

DR. GEIGER: Yes.

CHAIRMAN FREEMAN: Very good. The only other item that I would ask that the Technical Committee go back through their items that they asked for funding and set up a prioritization so we can start using that money. And Stu indicated he would be happy to do that amongst other things. Any other items to come before the board? Andy.

MR. MANUS: Just so I'm clear, Mr. Chairman, on that prioritization of the research funding that the Technical Committee is going to provide us. We are going to move forward with telling the Service to go ahead with Item Number 2; is that correct? That's the genetic stock identification?

CHAIRMAN FREEMAN: Yes, that was a commitment made by Jamie. That's correct.

One last item, Charlie Lesser has the grand opportunity of taking over as the Chair of this board. And as Charlie's first item of business, you can end the meeting.

CHAIRMAN CHARLIE LESSER: Without objection, the meeting is adjourned.

(Whereupon, the meeting was adjourned at 3:10 o'clock p.m., October 17, 2000.)

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