

# Atlantic States Marine Fisheries Commission

## Horseshoe Crab Management Board

*May 3, 2016  
10:15 – 11:15 a.m.  
Alexandria, Virginia*

### Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- |   |            |
|---|------------|
| 1. Welcome/Call to Order ( <i>J. Gilmore</i> )  | 10:15 a.m. |
| 2. Board Consent  | 10:15 a.m. |
| • Approval of Agenda  |            |
| • Approval of Proceedings from February 2016  |            |
| 3. Public Comment   | 10:20 a.m. |
| 4. Update on Adaptive Resource Management Framework Review ( <i>J. Lyons</i> )  | 10:30 a.m. |
| 5. Discussion on Biomedical Data Confidentiality and Stock Assessment Planning ( <i>K. Anstead</i> ) <b>Possible Action</b> | 10:50 a.m. |
| 6. Review of Alternative Bait Cost Comparison ( <i>K. Rootes-Murdy</i> )  | 11:05 a.m. |
| 7. Other Business/Adjourn   | 11:15 a.m. |

The meeting will be held at the Westin Alexandria; 400 Courthouse Square; Alexandria, VA; 703.253.8600

*Vision: Sustainably Managing Atlantic Coastal Fisheries*

# MEETING OVERVIEW

## Horseshoe Crab Management Board Meeting

Tuesday May 3, 2016

10:15 a.m. – 11:15 a.m.

Alexandria, Virginia

Chair: Jim Gilmore (NY) Assumed Chairmanship: 10/14	Horseshoe Crab Technical Committee Chair: Steve Doctor (MD)	Law Enforcement Committee Representative: Messeck (DE)
Vice Chair: Dr. Malcolm Rhodes (SC)	Horseshoe Crab Advisory Panel Chair: Dr. Jim Cooper (SC)	Previous Board Meeting: February 3, 2016
Shorebird Advisory Panel Chair: Dr. Sarah Karpanty (VA)	Delaware Bay Ecosystem Technical Committee Chair: Greg Breese (FWS)	
Voting Members: MA, RI, CT, NY, NJ, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (16 votes)		

### 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 3, 2016

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

### 4. Update on Adaptive Resource Management Framework Review (10:30 – 10:50 p.m.)

#### Background

- At the 2015 Annual Meeting, the Board requested reconsidering the harvest of female horseshoe crabs in the Delaware Bay region through a review of the Adaptive Resource Management (ARM) Framework.
- At the 2016 Winter Meeting, the Board supported moving forward with a short-term, partial review of the ARM Framework to be conducted by the ARM Subcommittee in consultation with the Horseshoe Crab Technical Committee subcommittee.
- The ARM Subcommittee met twice a month from February through April 2016 to consider components of the ARM Framework to be updated. Areas of possible change in the ARM Framework include valuation of female horseshoe crabs, alternative harvest

packages, abundance thresholds for allowing female horseshoe crab harvest, and the possibility of including biomedical data in the ARM Framework moving forward  
**(Supplemental Materials)**

Presentations

- Update of the ARM Framework by J. Lyons

#### **5. Discussion on Biomedical Data Confidentiality and Stock Assessment Planning (10:50 -11:05 a.m.) Possible Action**

Background

- In February 2016, the Board discussed the challenge data confidentiality presents in conducting a stock assessment for horseshoe crabs. Following this discussion, the Board tasked staff with compiling information on state level regulations regarding data confidentiality. **(Supplemental Materials)**
- In March 2016, the Horseshoe Crab Stock Assessment Subcommittee met to discuss data confidentiality and stock assessment approaches. The most significant update was the change in the number of biomedical facilities in the Delaware Bay Region.
- In April 2016, the Horseshoe Advisory Panel (AP) met to discuss data confidentiality and biomedical best management practices. The AP indicated that biomedical data must remain confidential when applicable, if used in a stock assessment. **(Supplemental Materials)**
- In April 2016, the Assessment Science Committee and Management Science Committee met to discuss the assessment schedule for Horseshoe Crab. Based on the challenges data confidentiality pose and management implications, the committees suggested that the Board provide guidance on a preferred stock assessment approach.

Presentations

- Horseshoe Crab Biomedical Confidentiality & Stock Assessment Timeline by K. Anstead

#### **6. Review of Alternative Bait Cost Comparison (11:05 -11:15 a.m.)**

Background

- In February 2016, the Board was presented the results of the 2014 alternative horseshoe crab bait trials conducted in Connecticut and Rhode Island. Based on the results of the trials, the Board tasked staff with developing a cost comparison.
- In March 2016, the Artificial Bait Trials Working Group met to discuss considerations in conducting a cost comparison. The group provided feedback and highlighted challenges in doing a cost comparison analysis **(Briefing Materials)**
- In April 2016, the Horseshoe Advisory Panel (AP) met to discuss current bait practices and provide cost information for horseshoe crab bait. The AP provided considerations and suggestions for further evaluations of alternative horseshoe crab bait. **(Supplemental Materials)**

Presentations

- Horseshoe Crab bait cost comparison by K. Rootes-Murdy

#### **7. Other Business/Adjourn**

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

**The Westin Alexandria**  
Alexandria, Virginia  
**February 3, 2016**

These minutes are draft and subject to approval by the Horseshoe Crab Management Board  
The Board will review the minutes during its next meeting

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1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of November 2015** by Consent (Page 1).
3. **Move to accept Brett Hoffmeister from Massachusetts to the Horseshoe Crab Advisory Panel** (Page 9). Motion by Bill Adler; second by Emerson Hasbrouck. Motion carried (Page 9).
4. **Motion to adjourn**, by Consent (Page 10).

**ATTENDANCE**

**Board Members**

Bill Adler, MA (GA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Jocelyn Cary, MA, proxy for Rep. Peake (LA)	Roy Miller, DE (GA)
Dan McKiernan, MA, proxy for D. Pierce (AA)	Ed O'Brien, MD, proxy for Del. Stein (LA)
David Borden, RI (GA)	Mike Luisi, MD, proxy for D. Blazer (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Bill Goldsborough, MD (GA)
Bob Ballou, RI, proxy for J. Coit (AA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Dave Simpson, CT (AA)	Robert Boyles, Jr., SC (AA)
Lance Stewart, CT (GA)	Malcolm Rhodes, SC (GA)
James Gilmore, NY (AA)	Pat Geer, GA, proxy for Rep. Nimmer (LA)
Emerson Hasbrouck, NY (GA)	James Estes, FL, proxy for J. McCawley (AA)
Pat Augustine, NY, proxy for Sen. Boyle (LA)	Sherry White, USFWS
Russ Allen, NJ, proxy for D. Chanda (AA)	Chris Wright, NMFS
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Martin Gary, PRFC
Stewart Michels, DE, proxy for D. Saveikis (AA)	

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

**Ex-Officio Members**

Steve Doctor, Technical Committee Chair

**Staff**

Robert Beal	Ashton Harp
Toni Kerns	Kirby Rootes-Murdy

**Guests**

Mike Millard, US FWS	Jennifer Farrington, Associates of Cape Cod, Inc.
Joseph Gordon, PEW	Brett Hoffmeister, Associates of Cape Cod, Inc.
Benjie Swan, Limuli Labs	Allen Durgenson, Lonza Walkersville, Inc.
Raymond Kane, CHOIR	David Bush, NCFA
Arnold Leo, E. Hampton, NY	

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, February 3, 2016, and was called to order at 2:38 o'clock p.m. by Chairman James J. Gilmore.

#### **CALL TO ORDER**

CHAIRMAN JAMES J. GILMORE: Welcome everybody to the Horseshoe Crab Management Board. My name is Jim Gilmore; I am the Administrative Commissioner for New York, and I'll be chairing the meeting today. Let's just jump right into it to see if we can get ahead of schedule now.

#### **APPROVAL OF AGENDA**

CHAIRMAN GILMORE: First order of business is the approval of the agenda, which is in your briefing package. Are there any changes to the agenda? Are there any changes to the agenda, Bob Ballou?

MR. BOB BALLOU: Oh yes, thank you. There are changes. Sorry, Mr. Chairman. Thank you very much for accommodating me in my interest in adding under other business a quick discussion on revisiting the issue of data confidentiality concerns.

CHAIRMAN GILMORE: Okay Bob, we'll add that to other business; any other changes to the agenda? Seeing none; we'll take those as modified.

#### **APPROVAL OF PROCEEDINGS**

CHAIRMAN GILMORE: The next order of business is the approval of the proceedings from the November, 2015 meeting; any changes to those proceedings? Okay we'll take those adopted by consent.

#### **PUBLIC COMMENT**

CHAIRMAN GILMORE: Any public comment; before each meeting if there are any comments

from the public on issues not on the agenda? You can come up to the public microphone if there are any. I didn't get any written notes beforehand, so is anybody interested in making a comment? Seeing none; we'll move on.

#### **REVIEW SCOPE OF WORK OF THE ADAPTIVE RESOURCE MANAGEMENT FRAMEWORK**

CHAIRMAN GILMORE: The first business item is essentially with the adaptive management framework.

In the fall of 2015 the ARM Subcommittee recommended the framework be revisited through the double loop review, and then at the annual meeting of the board there was a consideration we would look at the Delaware Bay possibly having a female harvest, again through the double loop review through the ARM framework.

The ARM Subcommittee met in January to discuss this and essentially there were two timeframes emerge from that. Kirby is going to go into the results of that. What we're going to need at the end of this is essentially just a recommendation on which one of the timeframes we would feel more comfortable with pursuing.

MR. KIRBY ROOTES-MURDY: You outlined pretty well the first couple slides I have, so I'll just quickly put those back up for people to see. We started this conversation in the fall with the Delaware Bay Technical Committee, the Horseshoe Crab Technical Committee and the ARM Subcommittee, and the board made the recommendation at the November meeting to proceed with doing a double loop review with an interest in looking at the female harvest in the Delaware Bay region. In January the ARM Subcommittee met to discuss the double loop review time tables and what possible products could come out of that. One of the key challenges that the group encountered and has been dealing with is that there are not examples to draw from



in how a double loop review or learning process is to take place.

It is my understanding that Fish and Wildlife has implemented this or attempted to implement it for other species under their waterfowl plan, but that none have come to a point where a full review could be done and looked at as a guiding document. In keeping that in mind, the group came up instead with five items that could be addressed through the review or essentially a double loop review; taking into account new research and considering that in the process of evaluating the model.

When looking at those five items, the group decided to kind of organize them into two possible timeframes. The first two items regarding review would be a much longer term process; 18 to 24 months, and the two items would be revisiting the model setup, the hypotheses that were used in that in initial setup and reevaluating some of those parameters that are in the model.

The other item is the optimization algorithm update, and changing basically the software platform that the ARM framework operates on now. It is out-of-date relative to other software platforms that are used for assessments and moving to a new one would take a bit of time and effort.

In terms of looking at items that could be accomplished in a shorter review, in a six to eight month period, there were three items that kind of came to consensus by the group and they were reevaluating the monitoring program. That is updating and improving some of the monitoring programs, the surveys that are considered to go into the ARM framework.

The second item would be the harvest rates and specification process, so looking at the harvest in the Delaware Bay and the harvest packages; and the fifth is revisiting the objective function, which

outlines basically how the model treats the emphasis of conserving red knots and optimizing harvest of horseshoe crabs.

In terms of considering these two different timetables, the group came to agreement that there are some benefits that are immediately clear for a short term review. Items 3 through 5 that I just went through could be updated in that shorter time period with no additional staff or personnel needed. It would provide essentially an update of the ARM in 2016, with the possibility of new information to be considered in setting specifications for 2017.

As I mentioned before, Item 3, in terms of considering the harvest packages or the harvest in the Delaware Bay. There is work that is being done currently. Jim Lyons is looking at how the survey for mark/recapture on red knots, how that is done annually. He is reevaluating some of the assumptions in that.

Those two things could be done in a shorter time period. One of the challenges with regards to the shorter time period is that it could possibly be extended further than six to eight months regarding the last item; that is the objective function. There is some concern that revisiting the objective function, given the change in the status of red knots, could prolong the process in terms of trying to take into account all new stakeholder views on it. Now that could be accomplished through the current Technical Committee membership, but taking it out to the broader public may make that process a longer one. In terms of the long term review items, the first two that were listed, some of the benefits are that it would be a more thorough review of the ARM framework, and that updating that software platform would make the annual specification process more efficient.

In terms of challenges, it was mentioned at the November meeting, this is viewed as something that would likely take an outside contractor an 18

to 24 month period, so bringing on a new person essentially to work on this, contracting out; and the other facet is that this is an effort that would address, again just the Delaware Bay on a longer term review and not really consider all the facets of the coast wide population and what would be needed for a coast wide assessment.

In terms of next steps, the committee has already kind of started to think through how this short term review could be done. We have some subgroups that would be working on those three items that we mentioned that could be completed this year with that caveat. But the subcommittee is looking for guidance from the board in terms of the time track, or at least the preferred time track from the board of those kinds of two ways of looking at doing this review.

Two last things to keep in mind are that a short term review that might change or offer alternative harvest packages would require an addendum. At some point later this summer there would need to be a draft addendum if there are alternative harvest packages that go out to the public for consideration that would then modify what the current Addendum 7 says on the five harvest packages.

The last thing is that the long term review would require additional guidance from the board in terms of developing a scope of work for essentially an RFP process to have someone come on and work on this. I guess one other thing that I should note, in terms of doing the review that the subcommittee wanted to stress, is that in going through the process of revisiting different items in the model, there isn't inherently an overhaul that would come out.

In doing this process there might actually be the determination that those assumptions that were agreed upon and the hypotheses that were set up would be reaffirmed. It shouldn't be looked at as in either the long or the short term as being an inherently changing the final outputs all the time.

With that I'll take any questions. Also up here is Steve Doctor, the Technical Committee Chair and Kristen Anstead; who is a staff stock assessment scientist. Between the three of us we are happy to answer any questions on it.

CHAIRMAN GILMORE: Any questions for Kirby?

MR. STEWART MICHELS: Thanks, Kirby that is an excellent summary. I like that short term approach, except that that Item Number 5 I think as you mentioned could be quite a time suck. When you guys discussed this and you talked about maybe just limiting it to a Technical Committee review. Was that the Horseshoe Crab Technical Committee and the Delaware Bay Shorebird Technical Committee? Were you going to limit it to those two committees or just to the Delaware Bay Committee?

MR. ROOTES-MURDY: The call we had in January was just with the ARM Subcommittee members. In terms of doing this short term review it could encompass both technical committees in addition to the ARM Subcommittee, in trying to get feedback and adjust these things. Communication between the three would likely be more beneficial than just one. Again, anything that would result in new harvest packages would not only go out to the AP, but also the broader public for consideration. That is kind of how those different groups could be engaged, but if it is the board's preference you can specify that all three need to be in coordination on it.

MR. EMERSON C. HASBROUCK: Thank you, Kirby for your report. In your report you spoke about harvest and harvest levels a little bit. I recall at one of our previous board meetings, I don't know if it was the last board meeting or not. There was the issue of the harvest for pharmaceutical use. I don't specifically recall. Is that that we don't have that information at all, or that information is being reported but it can't be disclosed to us because of confidentiality? Where are we with pharmaceutical harvest?

MR. ROOTES-MURDY: You are correct. At the November meeting we did talk about biomedical data, the confidentiality issue that you encounter when you're dealing with less than three dealers. Looking at the horseshoe crab population on a coast wide level; breaking it out into subpopulations regionally presents that problem for some of the regions.

We do have the biomedical data, in terms of harvest, release. We cannot disclose that currently on some of the regional levels because of the rule of three, there is less than three essentially companies and understood as dealers. Breaking it out in an assessment at this point, from what our understanding is, is problematic. We have the information we just cannot publicly disclose it in a stock assessment.

CHAIRMAN GILMORE: Other questions for Kirby?

MR. MICHAEL LUISI: Kirby, it may be too early to have an answer to this question, but one of the issues that Maryland has brought to the Horseshoe Crab Board has to do with the elimination as a part of the ARM model of any and all female horseshoe crab harvest in the state. The last time we met it must have been at the annual meeting, and I remember bringing up the issue of finding a way potentially through this review of getting more – what's the word – looking at potential female harvest at a more refined approach.

Rather than going from zero to the next harvest package, having 100,000 crabs being landed. I was hoping that through the work of this review there might be a way of looking at different levels of harvest that are smaller in scope, than having it jump from 0 to 100,000 crabs. Will the board have an opportunity through this review to kind of see what is coming out of the ARM, so that we could have some input as to what is being analyzed?

MR. ROOTES-MURDY: Yes I'll answer that and then turn to Steve Doctor he's the TC Chair and we'll be working on, if the board's pleasure is to go with this short term review, we'd be working on some of these alternative harvest packages. The process is, as I mentioned in my presentation, if alternative harvest packages are developed by the group and the ARM Subcommittee and technical committees are comfortable with them as being kind of within the realm of the ARM framework.

They would be presented to the board at some point in either the late spring or summer for an addendum, because as I mentioned if they are alternatives to the current harvest packages that are in the Addendum 7, they have to go out and essentially augment that current framework. The board would see it and determine what alternative harvest packages they would want to have in that document; that goes out to the public. That would probably be one main venue for the board to provide input.

MR. STEVE DOCTOR: Mike, I'm working on developing some of the harvest options as one of my responsibilities on the ARM model, and linear progression of female harvest is one of the things we're aware of that the board would be interested in looking at.

CHAIRMAN GILMORE: Other questions for Kirby? Okay seeing none, so what is the preference of the board? We have before us, we have to give them some recommendations on whether we're going short or long term. If there are other issues that we want to address as we're going through the review, so does anybody want to offer for preference? We don't need a motion for this; we just simply need a preference one way or the other, and maybe a justification as to why.

MR. PATRICK AUGUSTINE: Is it legal for me to do this; to make this motion?

CHAIRMAN GILMORE: No, we don't need a motion, Pat, we just need a recommendation.

MR. PATRICK AUGUSTINE: The short term option, Number 2. It sounds like the most appropriate way at this particular point in time than the way we're going. The documentation that you put forth was excellent, very informative if you will. I think we're heading in the right direction.

CHAIRMAN GILMORE: Right now we have short term as a recommendation. Does anybody want to counter that or come up with a different option? I think actually I think Delaware Bay folks; I would imagine you are preferring the short term. Looking around the table I don't see any counter proposals, so maybe we'll just go with the short term. By consensus, everyone is okay with that? Okay seeing heads nodding. Do you need anything else, Kirby?

Any other issues that weren't discussed by Kirby that you would want to consider under the short term review? Does anybody have anything else they want to add to this? Okay seeing none; I guess you guys are okay. You have enough to go on from this point? Okay, great. Moving on to the next agenda item, we're going to have a review of the Alternative Bait Trial Results. Kirby is going to do a presentation on that and I think he's going to tag team with a little help from Dave Simpson and Bob Ballou.

#### **REVIEW ALTERNATIVE BAIT TRIAL RESULTS**

MR. ROOTES-MURDY: Yes I am going to go through the Artificial Bait Trial Results and two of the states were able to successfully carry those out, and I'll turn to them when I get done to offer any additional comments or thoughts on it. Back in 2014 the board tasked the Technical Committee with conducting field trials for using artificial bait in the conch and eel fisheries.

The goal is to determine how effective artificial bait could be used in these fisheries relative to

the current horseshoe crab bait. An Artificial Bait Working Group was formed to determine how these trials could be carried out and in what fashion. The states of Massachusetts, Rhode Island, Connecticut, and Delaware all volunteered to participate; but only two as I mentioned were able to do so, Connecticut and Rhode Island and it was a two-part issue in terms of both obtaining the artificial bait as well as trying to determine a group of commercial fishermen to participate in the trial. The summary that was included in the board materials list this little bit. But I'll go through the methods and then the results. The artificial bait was supplied by LaMonica Foods out of New Jersey.

The volunteer fishermen used their current fishing methods for the trap fishery; soak time, time in between when the trials were run and the operational details were left up to the discretion of the fishermen, to get at differences across the season. They alternated between artificial bait and horseshoe crab in a spatially paired setup for the two traps.

The target was to do 50 traps total, 25 of the artificial bait and 25 of horseshoe crab; or the presently used horseshoe crab bait, and repeat it for 10 trials. The way that the results of that were analyzed was using a one-way ANOVA for total and legal size conchs. This was used primarily in the conch fishery.

Connecticut was able to carry out 10 trials between July and August in 2014, but with one fisherman 20 to 25 traps were used in each trial and a total catch of 4,834 conchs; a little less than that 3,401 were of legal size. Rhode Island used multiple fishermen and was able to conduct 13 trials between October and November of 2014; 17 to 54 traps were used in each trial.

They had a higher catch of 8,331 conchs, but just a little more than half of them were of legal size. In terms of the results, both states the paired bait results were not significantly different for legal

size conch and for all size in the Rhode Island trials. In terms of Connecticut the trials resulted in a statistically significant increase in the sublegal catch, and total catch of the regular bait compared to the alternative bait.

The sum catch for all the traps by date and by bait type was similar between the bait types, both legal and total catch; so sublegal catch in both states trials. This suggested that the bait type does not have a large or consistent effect on the catch, especially for legal sizes under a variety of seasonal and environmental variables.

I have in the summary the Connecticut results and the ANOVA results and then for Rhode Island. With that I'll take any questions at this point and as I said, Connecticut and Rhode Island can speak to the results of their trials and Delaware and Massachusetts could also probably speak to the difficulties they had in trying to conduct the trials.

CHAIRMAN GILMORE: First off do you guys want to add anything to this, and then we'll go to questions on that.

MR. BALLOU: Clearly the results speak for themselves. I think they're rather compelling, clearly demonstrating the efficacy of the artificial bait in the trials that we ran in Rhode Island. The only caveat is that the fishermen who participated in the trial, although I think they were impressed with the performance of the artificial bait, they remained concerned about the cost.

It is anecdotal, I don't have any actual information; and maybe that is something we might want to pursue now as to what is the extra cost, the additional cost associated with the use of artificial bait. But with that one caveat the trial went well, and it looks clear that the artificial bait works well.

CHAIRMAN GILMORE: Dave, did you have anything you want to add?

MR. DAVID G. SIMPSON: No, I think it got summarized very well by Kirby and Bob.

CHAIRMAN GILMORE: Okay questions for Kirby?

MR. AUGUSTINE: Good report. My question was whether or not those are elitist conch in Connecticut, because the catch rate was lower than the others. I'm busting your chops. Just I look at the trend lines. Everything was pretty online with each other, but Connecticut's trend line was slightly below and I didn't know if there were elitist conch that didn't like that particular bait or what. But this meeting was getting very heavy so you needed that.

CHAIRMAN GILMORE: No elitist conch in Connecticut, okay.

MR. HASBROUCK: Thank you for the report. Two questions, one is you had mentioned that the artificial bait was supplied by LaMonica Foods. Was that a surf clam or ocean quahog based bait; that is my first question?

MR. ROOTES-MURDY: I am of the understanding that it was an extract used from horseshoe crab, but I would have to double check on what the special recipe was that was used by LaMonica for it, because I think it was proprietary.

CHAIRMAN GILMORE: Roy Miller may have some wisdom on this.

MR. ROY W. MILLER: My understanding, and Stew may correct me on this, was that it was this artificial bait included a tenth of a horseshoe crab.

MR. HASBROUCK: Plus secret ingredients I guess, right?

CHAIRMAN GILMORE: Yes I'm sure all proprietary too.

MR. HASBROUCK: My second question, Mr. Chairman.

CHAIRMAN GILMORE: Go ahead, Emerson.

MR. HASBROUCK: I noticed in the ANOVA results for Connecticut that there was a highly significant difference between the artificial bait and the regular bait for all sizes. If I'm looking at that correctly, you may have mentioned this in your report, but I may have missed it. The artificial bait then catches significantly less sublegal conchs, is that correct? But there is no difference with legal size.

MR. ROOTES-MURDY: Yes, I believe that is the case.

MR. WILLIAM A. ADLER: Just the cost, you mentioned the cost. What is the basic cost of the horseshoe crab to the fisherman versus the artificial bait to the fisherman? What is the cost?

MR. ROOTES-MURDY: That is a good question. I don't have that information off-hand.

MR. DANIEL McKIERNAN: The question of what normal bait is used in this fishery is a difficult one to answer, because a lot of whelk potters are opportunistic in their normal bait choices. I happened to get an e-mail this morning from staff. We did a survey of our whelk pot fishery about what bait they were using.

Sixty-one active fishermen responded, and 53 used horseshoe crabs, 39 shellfish, 45 green crabs, 33 used fish, one used rock crabs 3 used Jonah Crabs and 9 used blue crabs. It is really, it is a buffet, and in some cases they use multiple things. A dogfish head and some green crabs and some clams.

This is really encouraging, because I've wanted to see the artificial baits pushed forward so that we can conserve horseshoe crabs as much as we can. But I just wanted to highlight for my friends around the table that Jonah Crab bodies are a good whelk pot bait, so when we get to the Jonah

Crab claw debate, I am going to endorse bringing those bodies in for the whelk potters.

CHAIRMAN GILMORE: A whole new fishery that's great.

MR. MICHELS: Thank you, because I was wanting to know what the artificial product was being compared to. I will say that in Delaware's case we had difficulty; the fishermen had difficulty obtaining the bait. I didn't know if you guys ran into any problems trying to procure bait or bait quality I understand was also a bit of an issue. If anyone around the table can answer that it would be helpful, thanks.

CHAIRMAN GILMORE: Actually Toni has an answer.

MS. TONI KERNS: I think this started when Marin was working as the Horseshoe Crab Coordinator, the studies, the studies. When we first started working with them we had trouble getting LaMonica to deliver at a place that was convenient for the states, because we were purchasing the bait pucks from them and at times the quality, it was supposed to be frozen and by the time it got to where they were going it was partially thawed, or at times had been rotted out.

I know Penny in Connecticut, Penny Howell had to get a whole other set at one time, because we were having issues. There was some trouble at first. I know that at LaMonica they were trying to work with the states. I think at the beginning it was more of an issue than towards the end. I am not sure, I think that the formula they were using is the one that is very similar to what you can find online, which is out there from; I don't know if it was a study. I don't know if you remember Stew or not, but it is not much different.

MR. SIMPSON: Yes to Emerson's question or point. Yes the Connecticut study which had a smaller sample size than Rhode Island did see a

significant difference in sublegal size. But Rhode Island's did not, just making that clear.

CHAIRMAN GILMORE: Other questions for Kirby? Kirby, it seems to be if there is an issue that Bob brought up about the cost of this. Can we get information in terms of just a general idea of what the cost would be? I mean it does sound promising, and if we could come up with if it is going to cost X, and there are other ways we can maybe mitigate those costs or whatever, it would be a real benefit; if we can do that that would be great.

MR. ROOTES-MURDY: Yes, if it is the pleasure of the board I can put together a report for the next board meeting that outlines what those costs could look like.

MR. MCKIERNAN: Yes it seems to me that in the long run this board is going to have to make a decision to instruct their states at home to essentially restrict the use of whole horseshoe crabs, because this bait uses a component of a horseshoe crab in an amalgamated form. It is going to be very difficult to sort of police exactly what baits are going in there.

But at some point we're going to have to discourage, restrict, prohibit something to move the fleet onto either that long array of bait list that I've just described, or this synthetic alternative. Fishermen have told me that they're willing to give up horseshoe crabs if everybody else does. But the guy among the fleet that is using the whole horseshoe crab does the best. I think we may have to get involved in that on a regulatory basis.

CHAIRMAN GILMORE: Good point, Dan; any other comments on this, questions? Okay I think that if the board agrees we'll have Kirby look into the cost of this. I think that is a good point, Dan. At some point having a real viable alternative may help out in the overall management.

#### POPULATE ADVISORY PANEL MEMBERSHIP

CHAIRMAN GILMORE: Okay, we're going to move on to the next agenda item, which is we essentially have a vacancy on the Advisory Panel membership; actually maybe a couple. But we have a nomination that was put in by Dan McKiernan actually for Brett Hoffmeister. The nomination package was in the briefing document, so I'll need a motion on this.

MR. ADLER: Yes, I'll make a motion to add Brett Hoffmeister from the biomedical.

CHAIRMAN GILMORE: Bill, hang on one second. Kirby has a presentation before I take the motion.

MR. ADLER: Oh, okay.

MR. ROOTES-MURDY: Thank you for your eagerness to get this underway, but I just wanted to highlight to the board there are other vacancies and opportunities for board members to make nominations moving forward. Massachusetts nominated Brett Hoffmeister to the Horseshoe Crab Advisory Panel earlier this month.

But there are multiple vacancies along the coast and I wanted to make sure that the board is aware of the few states where there are vacancies; but also use this opportunity to go back and look at who their current representatives on the AP are. There are a number of AP members who were confirmed about six years ago, but there hasn't been any reconfirmation of them as AP members since then.

Rhode Island has one vacancy in the commercial and otter trawl category. Delaware has two vacancies in the dealer and processor, as well as a conservation and environmental category; and Maryland has one vacancy in the dealer/processor category. We'll need a motion to approve Brett to the AP, but that states should

also consider their current representation and provide any new nominations for the Horseshoe Crab AP. If you could do so by April 1st, it would be greatly appreciated. We'll take that motion at this point.

CHAIRMAN GILMORE: Okay Bill, go ahead, Dan.

MR. McKIERNAN: Could you tell me the ground rules for submitting another name from Massachusetts? We do have a trawler fleet that regularly catches horseshoe crabs that if you need a trawler to participate I could produce one. But I don't know if I would be above my quota for my state, in terms of participation.

MR. ROOTES-MURDY: We have two per state currently. In terms of by category, you have one by commercial and Brett would be for biomedical. You have currently one other person on for the commercial sector. But we're currently limiting for Massachusetts to two.

CHAIRMAN GILMORE: So you're thinking of one in Delaware or Maryland? I'm only kidding.

MR. McKIERNAN: I can work with my Rhode Island delegation, and maybe if we have a trawler coming from Rhode Island to fish in Mass waters we could recommend him.

MR. ADLER: **Okay I'll make a motion to accept Brett Hoffmeister from Massachusetts to be on the Horseshoe Crab Advisory Panel.**

CHAIRMAN GILMORE: Do we have a second, Emerson? We'll just get that up there, because I know I am supposed to read it; even though Joe is not here, his spirit lives on. Okay, move to accept Brett Hoffmeister from Massachusetts to the Horseshoe Crab Advisory Panel; a motion by Mr. Adler and second by Mr. Hasbrouck.

**Is there any objection to the motion? Seeing none; we will adopt that as unanimously approved by the board.**

## OTHER BUSINESS

CHAIRMAN GILMORE: Our last agenda item is our other business, and Bob Ballou wanted to raise an issue I think we already talked a little bit about, but on the confidentiality of the data for biomedical. Bob.

MR. BALLOU: I just was thinking back on the very robust discussion we had at our last board meeting in November, regarding the issue of data confidentiality concerns; and it was indeed brought up earlier today. My thinking is that it would behoove the board to keep this issue alive. My thinking is that perhaps for our next board meeting, whether we could task staff or form some sort of workgroup.

I'm not sure exactly the mechanism, but my thinking is that there ought to be a way to identify some options that would enable us to move forward with a stock assessment, notwithstanding the data confidentiality concerns; whether that would involve waivers from the biomedical firms, whether that would mean going into closed session.

It seems to me we just ought to think as broadly as we can about how we could crack this nut. I think it is a very important issue that I just want to make sure we keep alive. My thinking is that we tee it up as an agenda item and then seek guidance from staff on how we can perhaps develop some options for consideration, thank you.

MS. KERNS: We can definitely do that, Bob. One thing that I think if it would be helpful for staff is if the states that have biomedical companies within their state. If you would look at your state rules and laws to see if you could say to the biomedical companies, confidentiality does not apply here. One, to look there to see what your state rules say. We have approached the biomedical companies, asked if they would do waivers. They said they were not interested in waivers. They



said that they would try to work with us, but we still haven't come up with a work around yet.

The ASC and the MSC are going to be meeting in March. I've asked to have an extensive discussion at the ASC level to see, what can we do, for an assessment if we did break it up by regions? Can we present information in a way that shows no lines, or shows no numbers but just shows, are we above or below a threshold level?

It would not be the most transparent assessment, but at least it would be something to give us information on how well the resource is doing in one of those areas. We'll be able to report back to the board then as well. But I do think that looking at a state level on confidentiality rules will be helpful. We can follow up with those states between the two meetings, and see where we can go from there and potentially set up some calls with the individual companies once we get that information from you all.

CHAIRMAN GILMORE: Other comments on this? That sounds fair, so we're telling staff to do something so we get homework too. Everybody needs to go back to their states and look into their regulatory issues concerning biomedical and provide that to staff. Hopefully at the May meeting we'll have a more meaningful discussion other than a frustration discussion. Okay that is the last agenda item I have.

#### **ADJOURNMENT**

Unless anybody has got additional business I will entertain a motion to adjourn; by everybody and seconded by everybody, thank you.

(Whereupon the meeting was adjourned at 3:17 o'clock p.m., February 3, 2016.)



# Atlantic States Marine Fisheries Commission

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## ASMFC Horseshoe Crab Alternative Bait Working Group Call Summary

March 30, 2016

**Technical Committee Members:** Penny Howell (CT DEEP), Derek Perry (MA DMF), Jordan Zimmerman (DE DFW), Colleen Giannini (CT DEEP)

**ASMFC Staff:** Kirby Rootes-Murdy

The Horseshoe Crab Alternative Bait Working Group met via conference call on March 30, 2016. The Working Group discussed the following tasks from the Board; review of the prior bait comparison trails and a cost comparison of alternative horseshoe bait for the conch and eel fisheries. Additionally, staff held a call with Advisory Panel members on April 6, 2016 to get more information on alternative bait considerations. The goal was to develop a cost comparison of the traditional horseshoe crab bait and alternative bait products (table 1).

- Penny and Colleen indicated the ecobait supplied by LaMonica Foods had a very soupy consistency that created problems for the CT fisherman securing it in the trap in warm weather. Though there were potentially 50 pieces per slab, the fisherman had to double up the amount due to the consistency and effectiveness in order to have the bait last in the trap. While the recommendation was to refrigerate the ecobait, (freezing it would cause the bait to crumble and separate), this fisherman found that short-term freezing improved consistency and did not diminish its utility. However, from a logistical standpoint most fishermen use walk-in freezers and not a refrigerator. This limitation and the bait's soft consistency in warm weather presents problems for maintaining the bait over an extended time period.
- In discussing the cost of horseshoe crabs, the group noted that there are regional price differences. In the Mid-Atlantic/ Delaware Bay region, female crabs are valued at twice the price of male crabs (approximately \$1.60-\$2.00 per female crab and \$.80-\$1.00 per male crab). In New England states, the price is \$3.50-\$4.00 per crab regardless of sex.
- Discussing the current 'recipes' used by conch fishermen, Derek indicated that a mix is usually used by Massachusetts fishermen. A 2013 MA DMF mail survey (66% response rate of 93 active trap permit holders responded) indicated that most fishers used horseshoe crab, but more than half of the respondents also used green crab, shellfish, and/or fish. Fishermen use approximately a quarter of horseshoe crab used per trap (See tables 2 and 3).
- In discussing how frequently conch and eel fishermen catch horseshoe crabs versus purchasing them from dealers or processors, it was noted there isn't a clear breakdown

across the coast for those fishermen holding both conch and horseshoe crab permits. In Massachusetts approximately 60 fishermen have annually held both permits over the last 4 years. In Connecticut there are only a few bait harvesters and many are also conch fishers. For those in Delaware who harvest horseshoe crabs and set eel pots, most hand harvest off beaches. In Delaware, Jordy indicated that many eel fishers have to know someone in order to get horseshoe crab bait. In recent years, there has been a supply of crabs from frozen storage that were harvested in previous years, so the ability to catch or purchase bait has not fluctuated much.

- The working group coalesced around concern over the logistical issues in securing bait from LaMonica Fine Foods in 2014. While four states (Delaware, Connecticut, Massachusetts, and Rhode Island) were initially interested in participating in the bait trials, only Rhode Island and Connecticut were able to carry out the trials with conch fishers. Delaware did not participate in the bait trials due to the low number of conch pots fished. Massachusetts was not able to coordinate with LaMonica to receive the ecobait product to conduct the trials. Additionally, the difficulty of using the product that Rhode Island and Connecticut conch fishers had raised concerns on its viability as an effective substitute. While it performed as well as traditional bait when recommended amount was doubled, there was not the same ease in acquisition and storage. Lastly, Connecticut fishermen indicated that they felt it would not be a full time replacement to traditional bait because it is necessary to change bait type in order to keep conch coming into the traps.

Key questions that the WG members had were the following;

- **The ecobait was estimated to be approximately \$48 per box of bait in 2014. Each box contained a 30" x 20" slab that contained approximately 50 pieces of bait. The approximate breakdown for cost per piece of bait was less than a dollar (\$0.96). Moving forward, would the price remain the same, or go up?**

FOLLOW UP: In talking with Mike LaVecchia from LaMonica Fine Foods and checking invoices paid by the Commission in 2014, the price of ecobait per box was \$40. All other dimensions remained constant (30" x 20" slab, 50 pieces of bait, \$0.80 per piece of bait). Moving forward, Mr. LaVecchia indicated that he would be interested in maintaining the price at \$40 per box for 6 months and then re-evaluating depending on demand/interest.

- **Delivery costs were expected to be approximately \$180 per delivery from LaMonica. Moving forward, would that price remain the same or go up?**

FOLLOW UP: In talking with Mr. LaVecchia, there were no delivery costs in 2014 and there would not be delivery costs moving forward. Mr. LaVecchia could deliver to New Bedford and locations in the Mid-Atlantic moving forward depending on interest and demand.

**Note:** TC members indicated that a delivery location in Connecticut and Rhode Island would be necessary to make the ecobait product a viable alternative.

- **With conch fisherman from Connecticut and Rhode Island indicating the need to double pieces of the ecobait, would there truly be conservation saving in using the ecobait?**

FOLLOW UP: In speaking with Mr. LaVecchia, for the number of crabs used per box, the breakdown is approximately 4-5 female crabs or 8-10 male crabs (smaller) per box/slab. Assuming approximately 50 pieces of bait could be used from the bait slab, the range of crab volume per piece of bait would be 1/10 to 1/4. If bait pieces are doubled up, then the amount of crab per use of bait would be 1/5 to 1/2.

- **Related to the previous question on conservation benefit, the WG members were interested in the current regulations for amount of crab per bait trap requirements by state.**

Currently Delaware requires that no more than 1/2 of a female horseshoe crab or 1 male horseshoe crab can be used as bait in a conch pot; Massachusetts and Connecticut TC members indicated that there are currently no requirements on the amount of crab per bait trap in their state. ASMFC staff will try to compile this information for all the remaining states in the horseshoe crab management unit ahead of the ASMFC Spring Board Meeting.

- **The WG members wanted to know whether male and/or female crabs were used in the ecobait and where the crabs were harvested from.**

FOLLOW UP: Mr LaVecchia indicated that the horseshoe crabs used in the ecobait came from all over the coast South (Carolinas), Delmarva region, and New England. He did not know specifically where each of the horseshoe crabs that went into the bait were from nor could he recall the exact price per crab. These specifics would vary for every batch made.

- **Lastly, the WG members expressed doubt over whether conch and eel fishers would want to make their own alternative bait.**

FOLLOW UP: Rick Robins of the Horseshoe Crab AP pointed out that most conch fishers in the mid-Atlantic are making their own 'ecobait' - that is, their own recipe of various crab and other items, while staying within their state's requirements for the limits for how much horseshoe crab can be used in each trap. It may be misleading to view the ecobait as completely different to what current fishers are currently doing.

**AP Recommendation:** The AP indicated interest in conducting further ecobait trials across the coast to determine its viability. Additionally, AP members recommended sending out a survey to the conch and eel fishers to gauge their interest to using ecobait over traditional horseshoe crab bait in the future.

Table 1. Cost comparison across horseshoe crab bait types

<b>Bait Type Comparison</b>			
	<b>Traditional Bait</b>	<b>Alternative Bait (LaMonica Foods)</b>	<b>Alternative Bait (Home Recipe)</b>
<i>Materials</i>	Horseshoe Crab, Green Crab, invasive Asian Crab	Horseshoe Crab, other materials	Horseshoe Crab, other materials (see list below)
<i>Materials Cost</i>	Horseshoe Crab cost varies along the coast: In the Mid-Atlantic males valued at \$1, females at \$2 per crab; in New England states males and females valued at \$3.50-\$4 per crab; total cost per baited bait trap varies along the coast as each state regulates how much crab can be used per bait trap	30" x 20" Bait Slab, \$40 per slab. Divided in 50 pieces, each 'puck' would cost around \$.80 (May have been closer to \$1.60 per set of bait because doubling up was required in the 2014 trials)  <b>Note:</b> LaMonica Foods indicated that price would stay at \$40 for the next 6 months but may change after depending on demand/interest	120 grams of alginic acid sodium salt; 54 grams of citric acid; 54 grams of sodium bicarbonate (baking soda); 27 grams of ascorbic acid; 800 ml of a 7.11 percent calcium sulfate (gypsum) solution (0.568 grams dissolved in 800 ml of water); 6 liters of water (room temperature); 2 liters of coarsely ground horseshoe crab or other attractant  <b>Note:</b> TC members highlighted that the materials are likely not available in small quantities, which may make initial costs very high.
<i>Refrigeration</i>	TC members and AP members indicated the horseshoe crabs are held in freezers if harvested or purchased in advance of the whelk and eel fishery season	Required to maintain consistency and shelf life- can last up to 2 weeks	Noted that alternative bait can be refrigerated if not used immediately
<i>Refrigeration Cost</i>	Refrigeration costs were not immediately available due to lack of information from AP members.	Refrigeration costs were not immediately available due to lack of information from AP members	Dependent on whether immediately used or not and scale of production
<i>Transportation</i>	AP and TC members indicated that if crabs are purchased and stored before use, freezer facilities used may be at marinas or ports ; otherwise purchase of crabs may come from conch processor (no additional transportation costs)	LaMonica Foods indicates that delivery of ecobait can be made within less than a week of order. Northern delivery locations can be New Bedford; other locations in the Mid-Atlantic and South Atlantic depend on demand	Primary transportation would be from where alternative bait is made to marina or point where conch or eel traps are placed
<i>Transportation Costs</i>	For traditional bait, TC members indicated that transportation costs are built into the price of crab (variably along the coast) but overall, likely minimal.	LaMonica Foods will not charge a delivery fee or charge	If fishermen opted to make their own bait, transportation costs would minimal to none.

**Table 2. Reported bait used by whelk pot fishermen (n=61) from MA DMF mail survey to MA commercial whelk pot fishermen.**

<b>Bait type</b>	<b>Number that used</b>	<b>Percent</b>
Horseshoe crab	53	86.9%
Green crabs	45	73.8%
Shellfish	39	63.9%
Fish	33	54.1%
Blue crabs	9	14.8%
Jonah crabs	3	4.9%
Other	3	4.9%
Rock crabs	1	1.6%
Artificial bait	0	0.0%

**Table 3. Amount of bait used per trap haul (using total bait reported in whelk mail survey and reported number of trap hauls) from MA DMF mail survey to MA commercial whelk pot fishermen. Note that horseshoe crabs are given as an individual count, all other species are given in bushels.**

<b>Units</b>	<b>Species</b>	<b>Amount/Trap</b>
count	Horseshoe crab	<b>0.26</b>
bushel	Green crabs	<b>0.01</b>
bushel	Shellfish	<b>0.01</b>
bushel	Fish	<b>0.01</b>
bushel	Blue crabs	<b>&lt;0.01</b>
bushel	Jonah crabs	<b>&lt;0.01</b>
bushel	Other	<b>&lt;0.01</b>
bushel	Rock crabs	<b>&lt;0.01</b>
bushel	Artificial bait	<b>0</b>