

**PROCEEDINGS OF THE**  
**ATLANTIC STATES MARINE FISHERIES COMMISSION**  
**SOUTH ATLANTIC STATE/FEDERAL FISHERIES MANAGEMENT BOARD**

**The Westin Alexandria**  
Alexandria, Virginia  
May 11, 2017

**Approved August 1, 2017**

**TABLE OF CONTENTS**

Call to Order, Chairman Jim Estes ..... 2

Approval of Agenda..... 2

Approval of Proceedings from February 2017 ..... 2

Progress Report on Cobia Draft FMP ..... 2

Atlantic Croaker Benchmark Stock Assessment 2017

    Benchmark Stock Assessment Report ..... 24

    Stock Assessment Modeling ..... 26

    Peer Review Panel Report ..... 29

Other Business

    Spanish Mackerel Addendum I ..... 37

Adjournment ..... 37

## INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of February 2017** by consent (Page 1).
3. **Motion to request that the South Atlantic Fishery Management Council and the Gulf of Mexico Fishery Management Council consider transferring management authority of the Atlantic migratory cobia stock to the Atlantic States Marine Fisheries Commission** (Page 12). Motion by David Bush; second by Joe Cimino. Motion carried (Page 15).
4. **Motion to adjourn by Consent** (Page 36).

## ATTENDANCE

### BOARD MEMBERS

Roy Miller, DE (GA)	Robert Boyles, SC (AA)
Rachel Dean, MD (GA)	Malcolm Rhodes, SC (GA)
Craig Pugh, MD, proxy for Rep. Carson (LA)	Patrick Geer, GA, proxy for Rep. Nimmer (LA)
Ed O'Brien, MD, proxy for D. Stein (LA)	Spud Woodward, GA (AA)
Russ Allen, NJ, proxy for D. Chanda (AA)	Rep. Thad Altman, FL (LA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Jim Estes, FL, proxy for J. McCawley (AA)
Lynn Fegley, MD, proxy for D. Blazer (AA)	Martin Gary, PRFC
David Bush, NC, proxy for Rep. Steinburg (LA)	Wilson Laney, USFWS
Michelle Duval, NC, proxy for B. Davis (AA)	John Carmichael, SAFMC

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

### Ex-Officio Members

#### Staff

Toni Kerns	Mike Schmidtke
Robert Beal	Louis Daniel
Katie Drew	Lisa Havel
Kristen Anstead	Jeff Kipp

#### Guests

John Clark, DE DFW	Lynn Fegley, MD DNR
Joe Cimino, VMRC	Laura Lee, NC DNR
Roy Crabtree, NMFS	Chris McDonough, SC DNR

The South Atlantic State/Federal Fisheries Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 11, 2017, and was called to order at 11:45 o'clock a.m. by Chairman Jim Estes.

#### **CALL TO ORDER**

CHAIRMAN JIM ESTES: I would like to call the South Atlantic State/Federal Fisheries Management Board to order please.

#### **APPROVAL OF AGENDA**

CHAIRMAN ESTES: You all should have received an agenda; and I'm going to suggest some fiddling with the agenda. I suggest that we move cobia to the top of the agenda. I also would like to add a short discussion about Spanish mackerel at the end of the agenda. Are there any other suggested changes for the agenda? Yes.

DR. MICHELLE DUVAL: Not a change, just for the record to let the Board know that I will be sitting at the table for our discussion on items with regard to cobia; and Chris Batsavage, my counterpart, will be at the table for the spot and croaker items.

CHAIRMAN ESTES: Are there any other suggestions to the agenda? If not, is there any objection to taking the agenda as it is? Seeing none; the agenda is approved.

#### **APPROVAL OF PROCEEDINGS**

CHAIRMAN ESTES: We all have proceedings from our February, 2017 meeting. Are there any suggested changes to those proceedings? Seeing none; we'll take those as approved.

#### **PROGRESS REPORT ON COBIA DRAFT FMP**

CHAIRMAN ESTES: Our first item is going to be about cobia and we're going to get an update about where we're at. Louis is going to give us an update.

DR. LOUIS B. DANIEL: Good morning, still. I am Louis Daniel, staff with the commission working

on the cobia issue. I would like to go over a summary of the work that has been done by the working group; and get your advice and direction on next steps for the Atlantic migratory group cobia FMP. First there is some new information that John Carmichael has on the stock assessment for cobia, and I was going to get him to give us a quick briefing on that; and then I'll proceed.

MR. JOHN CARMICHAEL: I heard the emphasis on quick, so I'll do that. The Steering Committee, which oversees the SEDAR schedule and balances the workload met last Friday. One of the things they discussed was the research track process, which we have discussed, and the effects of that on the cobia assessment and the timing of cobia.

The Steering Committee has come to the conclusion that the research track has not been fully fleshed out to the extent that it's ready to be implemented here in 2018. There are still a number of logistical and procedural details that are yet to be worked out within the principal players of the Southeast Center.

They've agreed to continue to work on that but as a result the Steering Committee has put off a bit, implementing the research track approach for stock assessments. Our scamp will start probably in 2019 instead of 2018; and then cobia, the recommendation is to not do this as a research track, but to do it as a regular SEDAR benchmark. This came from the folks themselves within the Center, and the SEDAR staff working on trying to define the research track process.

There were some concerns about that being a new approach, and uncertainty into how it would proceed; particularly with resolving this critical stock identification question. That group felt that really this needed to be a benchmark with resolution of stock ID occurring, before it gets started.

The Steering Committee supported that and the recommendation now is that we would start

cobia in 2018 with a stock ID resolution during the first half of the year. That will include a workshop with participants from all the different entities involved, so the South Atlantic, the Mid-Atlantic, the ASMFC folks, the state folks, and probably also some folks from the Gulf; because some initial genetics research suggests the potential for at least one overall stock.

That would include everybody, and then we'll have a recommendation from that group on stock ID, which will be reviewed by the technical groups, SSCs and technical committees; and then have an independent peer review. If there are any remaining issues, then the management leadership will have to figure out how to resolve it.

We're hoping that will take place during the first half of 2018, with the specific timing of the workshop really scheduled with an eye toward much of the research that is currently underway, and being able to bring that into the process and have it considered; because we would like to be able to get this stock ID question addressed in a way that is acceptable to everyone who is involved.

Then that would put us into a mid-late 2018 data workshop as a target, which would include 2017 data. There is a little bit of a wrinkle there, because the South Atlantic had asked that cobia have 2019 data; to allow some of the management changes which were pending to be considered. That was made at a time when we had the spike in recreational landings in 2015. It really was a thought at that time that perhaps that was just a spike. We didn't want to go into an assessment with a spike in a terminal year, potentially having a real driving effect.

Since that time we've learned that it really is more of an ongoing issue. We had higher landings in 2016 as well, which then of course raises the concerns about getting this assessment done sooner, and what may happen if it is pushed back until say a 2019 terminal year as the council asked for. The Steering Committee happened last week. The council will

meet in June and get all of this, and at that time we'll have to inform them about the Steering Committee's recommendation relative to the South Atlantic's request on terminal years.

But I think they are well aware of the issues with cobia, and they've certainly been kept up-to-date on what's happened around this board with cobia; and the work on proceeding with the Atlantic State's FMP on cobia. I think that they will be in support of the recommendation to get this assessment going sooner; even using the 2017 terminal year.

CHAIRMAN ESTES: Dr. Carmichael, I have one curiosity question. I know that there is an assessment due about the same time in the Gulf. Is there coordination between the two assessments, beings that we're going to have some stock issues?

MR. CARMICHAEL: The Gulf hadn't prioritized their cobia, but they did mention it at the Steering Committee meeting that they were interested in getting cobia. What the Science Center told them was due to the analyst assignments and what they're already working on that they wouldn't be able to do cobia in the Gulf in 2018.

That would be something that would have to be pushed back a little bit farther. Of course if it comes out that the one genetic study suggesting one overall stock of the Atlantic in the Gulf were the case, then certainly the Center would have to consider what that means to their folks and that resource, and who does the actual models. They'll be involved at the stock ID phase, and depending on how that goes, they may have to have some involvement in this assessment; depending on where the lines end up being drawn.

CHAIRMAN ESTES: Any other questions; yes, Roy?

DR. ROY CRABTREE: Just a comment. We are hearing some concerns coming out of the northern Gulf of Mexico that they're not seeing

fish at the numbers they feel they should be. I suspect this will come up at the Gulf Council meeting, which is the second week in June. I think there will be renewed interest in looking at cobia in the Gulf; and we're still going to have to work the timing out on that.

DR. WILSON LANEY: John, the last time, at least I thought the last time we had a genetics discussion about cobia at the South Atlantic Council, there was some discussion of the fact there might be as many as three different stocks with that coastal South Carolina/Port Royal Sound stock being one, possibly Chesapeake Bay being another, and the Atlantic pelagic stock being a third. What changed? I guess obviously there is a new study. Did they use a different technique? Are they looking at more genetic markers? What is going on there?

MR. CARMICHAEL: There is a lot going on, on the genetics front. There could be multiple stocks. It certainly seems like there are multiple spawning units within the Atlantic population that go to different river areas and spawn; and then they're all mixed up out in the ocean itself. Then there is really some uncertainty as to how far around through the Keys and into the Gulf those fish extend.

There is always some wandering fish that can throw off a genetic study, and I expect a lot of the discussion at the workshop about the connectivity between the Gulf and South Atlantic and Atlantic components, will be just how much of that is going on versus how much are they functioning; contributing to each other types of populations?

There is genetic study underway now, there are some genetic studies that were completed between the last assessment and today, and we're hoping to get as much of that as we can in a workshop; in front of enough genetics experts that we can tease out what the real answer is, or at least an answer that is acceptable to all of the management and scientist entities that have to weigh in.

CHAIRMAN ESTES: Let's listen to Dr. Daniel's work that they've done with the document. What I would like to do is, first of all he has some very specific questions for us to answer; and so we can't get out of here until we answer those questions. I promised him that we wouldn't. Also, I would like to try to be more inclusive and exclusive, and so I would like to try to work for a consensus if we're going to add things; rather than have to go through motions, and go through that lengthy process if it's possible. Go ahead.

DR. DANIEL: Thank you, John, for that update. It's good news. The working group meetings that you established at the last meeting consisted of Lynn Fegley, Joe Cimino, Michelle Duval, Robert Boyles and Kathy Knowlton, from Georgia. We had three conference calls to discuss various management options for Board review.

They had an opportunity to look over white papers that were put together by me, with help from my partner next to me; Mike Schmidtke. We were able to review those and discuss some of the options and some of the concerns that the Board had. All the data and discussion summaries were also provided to the Plan Development Team to make sure that everyone was in the loop; as best I could.

Going back, just as a refresher on the primary board objectives for the development of the plan, were to complement the South Atlantic's coastal migratory pelagics FMP for cobia; to constrain the coastwide harvest to the allowable catch limits established by the South Atlantic Council, and to provide the states with maximum flexibility to manage their specific cobia fisheries.

The issues that we discussed at the working group comprised of a series of issues; size limits, bag limits, vessel limits, state allocations, seasons. There were some other issues that I'll bring up and the commercial fishery, which we did not discuss at the working group; but I did want to add that in for clarity.

The first issue revolved around size limits. The South Atlantic Council's Framework 4 established a 36 inch fork length size limit in federal waters. The working group generally recommended a consistent coastwide 36 size limit for the FMP. Concerns raised were that different size limits can create enforcement and assessment concerns, if there are varying size limits up and down the beach.

But also recognizing one of the primary intents is to try to extend the season for as long as possible. Lower minimum size limits could result in higher catch rates and shorter seasons, and a larger minimum size limit while it could result in longer seasons, it could increase discards and potential safety concerns.

The primary issue here is making sure that there is consensus amongst the Board to limit the size limit options to the 36 inch fish consistent with the federal council plan. Assuming there are no comments or questions that would be the consensus of the Board. The next issue is bag limits. Again Framework 4 established a one fish recreational individual bag limit in federal waters.

The working group also recommended consistency with the one fish limit in the plan. Again, higher bag limits result in higher catch rates and shorter seasons; and we can't go lower than one without a season; which we'll talk about here in just a moment. Any discussion or comment on bag limits? If not, we will recommend maintaining a one fish bag limit. Vessel limits, here is where you've got some flexibility potentially as you move forward. The South Atlantic framework allows up to six fish per vessel in federal waters. The working group really had no specific recommendation regarding vessel limits, but the vessel limits could vary based on specific state objectives. What we know is based on current actions by the various states is that they have selected variable vessel limits from 1 to 3 in Virginia, I believe; and 4 in North Carolina.

That is what is going to adjust the landings to a large degree is the amount of fish allowed and the vessel limits. Whether or not you want to have specific vessel limit options in the plan, or whether you would like for that to be an option that you consider when developing your state-specific plan to move forward, is a question for the Board. Right now if you agree to leave it the way it is it would be at your discretion, to determine at the state level the vessel limits that you would want to implement in your state-specific plan.

CHAIRMAN ESTES: Yes sir, Robert.

MR. ROBERT H. BOYLES, JR.: I'll just bring it up for discussion purposes. I can imagine how this might go. Six fish per vessel to me seems very generous; given what we are trying to do, in terms of constraining the catch. I recognize that there are new fisheries that have grown and developed, and maybe that's a "bridge to far" right now. If the objective here is to find ways to constrain the catch of this popular and growing fishery, six just seems to send a message that we're not so concerned. I'll just state that Mr. Chairman.

CHAIRMAN ESTES: Yes, Michelle.

DR. DUVAL: I think in consideration of Robert's comments, my recommendation would certainly be that in regards to any state-specific seasonal measures, because as Dr. Daniel stated, you know that is one of the areas where states do have flexibility; that six would be the limit. That would be the cap. I would not recommend going above that.

There might be states that were interested in individual approaches that included perhaps a one fish, or two fish per vessel limit for this chunk of time; and maybe a four-fish vessel limit for this chunk of time. But I would certainly recommend no more than six per vessel; recognizing Robert's concerns about what we're doing here.



MR. JOE CIMINO: There is one other element to it I think. I agree with Robert, it does seem generous, and I think from the many public comments we heard in Virginia, they were fully understanding of it is an important way to constrain the catch. But one of the interesting things that we see is it is very likely that a for-hire fleet charter boat can manage that six fish vessel limit.

However, they're extremely underrepresented in Virginia's catch. We see very few charter intercepts. What we see is a large, private recreational catch that doesn't even achieve that six or even four-fish vessel limit anyway. It is a challenge. I think as we institute this mandatory reporting we'll find out more about what the for-hire fleet does. I think I am leaning towards Michelle's suggestion. Since it is one of the few places we're going to have some flexibility of a six-fish cap.

CHAIRMAN ESTES: Okay, did you get enough direction there?

DR. DANIEL: I did. My intent there was to simply mirror the federal plan of up to six fish, and I think that is what I'm hearing is that is a reasonable limit. Just let me point out too that these are not management. I will go back and develop these management options, and they will be included in the FMP for your review in August.

You are not making any final decisions here, just to make sure everybody is clear on that. But I am clear on vessel limits. If there is no further discussion on vessel limits; next are the state allocations. There are several different opinions and issues that need to be resolved here. This is probably one of the big meatier items.

I am going to go through this as briefly as I possibly can, and if there are any questions please don't hesitate to ask. Much of the data tables were very large and cumbersome to put up on the screen. You wouldn't have been able to see them. I'm hoping that you've got those

tables in front of you from the white paper that was in the supplemental materials.

What we did was looked at the landings time series, and we considered a three, five, and ten year period. It was also suggested by the working group that we include an option that looks at 50 percent of the five-year average to account for more recent timeframe, and 50 percent of the ten-year average to look more at the historical timeframe.

All of the tables represent those timeframes, three, five, ten and the 50/50 option is what I'll call it from here on. One of the big questions also was in the terminal year. Working group reviewed 2014 and 2015 as terminal years, to develop allocations based on landings. There was a PDT member that proposed 2013, and that was a period prior to some state-specific cobia management changes.

I believe the specific one mentioned was the South Carolina spawning season closure in May. The working group had no final opinion on terminal year, but appeared to agree; and I'm not trying to speak for them, but appeared to agree that 2015 provided the most recent information and did not include a year with a closure.

It did not include, there was some confusion and some misstatements that were made that 2015 had a closure, and that some states elected to continue fishing. That was not the case. That occurred in 2016. At present we've got essentially three options to develop the allocations; either looking at '13, '14, '15. I think it would be very helpful if we selected one terminal year to analyze for the public comments. Unless a working group member has a different opinion, I believe '15 was the proposed year to use.

CHAIRMAN ESTES: Are there any problems with that?

DR. DANIEL: All right, great. The next issue and this one is probably the one that generated the most discussion and comment, is looking at the

landings and the weights. The working group first reviewed a bunch of different tables with a bunch of different allocation options; that were looking at the MRIP landings data in weight, and the Southeast Fisheries Science Center landings data in weight, and those differ due solely to the different methods for estimating average weight. The MRIP uses the annual length weight data regardless of sample size. If you go back and look at the 2012 landings in New Jersey, those have been estimated based on one fish that was measured and weighed. But that was the average weight of the fish that was used, and that number was multiplied by the number of fish harvested; to generate the annual landings. The Southeast Fisheries Science Center requires a minimum sample size.

They may combine states or years depending on the sample size. Landings and allocations based on weights, whether it was the Southeast Fisheries Science Center method or the MRIP method, and the numbers of fish, are in the working group memo; and I'll have those up here in just a second.

Every time when we looked at there were very big differences between using the MRIP data, using the Southeast Fisheries Science Center data; and I'll give you a brief review of what we found. Based on the number of samples in the southern states, South Carolina and Georgia were actually combined; and their average weights were the same, between South Carolina and Georgia.

North Carolina arguably had more samples, and they had individual, annual average weights through the Southeast Fisheries Science Center process. Virginia had fewer lengths, and weren't able to get the SEFC required sample size, so all their samples were combined for an average weight that was used over a ten-year time series; 33.9 pounds.

There were all different variability's in how the different weights were calculated; and most of that was due to sample sizes, and the difficulty of going out and getting samples on a fishery like

cobia that is considered somewhat of a rare event in a pulse fishery. In discussions with some of the PDT members, and in working with a student I've got at N.C. State, we started looking at the possibility of using numbers of fish; to remove those inconsistencies in average weight estimates throughout the management unit and amongst the different methods.

If we look at the next slide, you can get an idea of what this actually means using just one of the examples. This is the allocation using the five and ten year 50/50 average landings for the 2005 to 2014 time series; so that would be adjusted for the 2015 time series, based on our previous discussions.

You can see how the numbers change, albeit slightly they do change. If you look at Georgia as an example, using the five and ten year pounds from the Southeast Fisheries Science Center, which is what the Board directed us to use at the very beginning; is about 9.5 percent of the coastwide ACL allocation recreationally to Georgia.

If you use numbers, it jumps up to 10.2 percent. You can see we've also included the actual ACL that would be allocated to the individual state, were either one of those options chosen. You can go through and look at your individual state. We only were able to look at Georgia, South Carolina, North Carolina, and Virginia; because those were the data that we had.

But it kind of breaks it down to where it is about a 40/40 Virginia/North Carolina and about 10 percent for Georgia and South Carolina. Those numbers, if you look at those tables that were produced, those numbers really don't vary a whole lot. But depending upon which time; until you get into the three-year time series, it really doesn't make a huge impact, and it doesn't have a huge difference in those allocation schemes. We believe, and from discussions and what I heard, I don't think there was a consensus at the working group meeting. But what I've heard is primarily support; at least for cobia, not dissing on the Southeast Fisheries Science Center,

because they recognize the numbers are not there to really do the complete analysis that they may otherwise do, but for cobia and for allocation analysis, looking only at the numbers of fish. The proposal would be to use numbers as opposed to weights when we develop the various scenarios for allocation.

CHAIRMAN ESTES: Yes, Robert.

MR. BOYLES: Just perspective from a working group member. One of my motivations, I think you all know this, but our General Assembly made cobia a gamefish several years ago in South Carolina; so there is no commercial take. The message we've heard consistently from our anglers is, they are interested in the experience, and experience is measured in numbers of fish not in pounds of fish. I just offer that perspective for the Board.

CHAIRMAN ESTES: Pat.

MR. PATRICK GEER: Louis, I had a real quick question about if we went with the numbers, how would that play out with the development of a stock assessment?

DR. DANIEL: Well, if I'm not mistaken the stock, I'm sorry, John. If you want to answer that question you would be more appropriate.

MR. CARMICHAEL: It actually really wouldn't at all; because the stock assessment, fish die is a number anyway, and the stock assessment includes catch in numbers for many of the data series. Certainly all the recreational discards are numbers, and the recreational harvest is numbers. The only thing that comes into the system in weight is the commercial; and the commercial has the much better weight sampling than any of the recreational fishery.

It is actually much more logical from reducing uncertainties to do this as numbers, because you would be using your commercial average weights; which are quite good, to convert that into the numbers. It won't have any impact on

the assessment and will reduce uncertainties really, I think in terms of setting your allocations.

DR. DUVAL: I mean the one thing I will say though is that any weights that are collected by MRIP are certainly available to the assessment scientist, for use in any way that they would see fit. Because I would just note that the commercial minimum size limit on the federal side is still 33 inches at this point. There would certainly likely to be greater variability in the average weights of the fish, I would think a little bit, based on that. But certainly, Pat, any weights collected by MRIP would be available for use in analysis during the assessment process; if needed.

CHAIRMAN ESTES: Louis made a suggestion, is there any opposition to the use of numbers instead of weights? Do we need to discuss this further? Okay, thank you.

DR. DANIEL: The next issue, Issue 5 is Seasons. The South Atlantic Council's Framework 4 provides analysis to examine coastwide seasons based on a suite of bag size and vessel limits. You've all seen that where it is presented for you. The working group spent a lot of time looking at the various Framework 4 analyses. We also received a detailed analysis from Mr. Chris Wilson with the North Carolina Division of Marine Fisheries. He was able to do a very detailed analysis for all the states from Virginia to Georgia.

What was requested of the working group was to look at issues such as variable start dates. The South Atlantic had thought about looking at changing the fishing year, but could not do that in a framework action. They had begun to put together some information on the impacts of say a May 1 start date to the fishery, and a June 1 start date to the fishery.

Obviously that has extreme variable impacts, depending upon where you are on the coast. A June 1 start date may eliminate the Georgia fishery, whereas it may not have such an impact on the Virginia fishery. Trying to do that on a

coastwide basis is unlikely to result in parity amongst the various states.

We provided that information to the working group, so that they could look at the state-specific information that was available; to look at the various reductions that could be achieved by having variable season restrictions. This is where it gets a little bit difficult. If you look at Framework 4 and you consider the options that are available in there; that is for a coastwide, seasonal option.

Those unlikely would satisfy the needs of the individual states of the Commission. Several questions that are important for moving forward with the development of the management options are whether or not we want to include state or regional-specific season options in the FMP at all. There are seasonal decisions best left to the states to develop and have approved by the Technical Committee and the Board.

If state or regional-specific seasons are desired for the FMP, should they be based on state-specific allocations? If not, are there other options to ensure equity and accountability? The issue here really is, if you've got as we've discussed so far, if you've got a one-fish bag limit, a 36 inch minimum size limit, variable vessel limits, and a state-specific allocation based on the '15 terminal year and numbers; will provide the 3, 5, 10 and 50/50 options to take out in the management options.

If you've got a specific allocation at that point, do you want to leave it to the states to make the decision based on the analyses that have been done, to tailor make your own specific season; or do you want to somehow develop specific seasons in the FMP that are specified for each individual state? I know that is a lot, and I will be happy to answer any questions related to that and direct you to any information that I can. That is probably the biggest decision we need to clarify today.

MR. BOYLES: I think Louis, to that question. I can't imagine a lot of other states around the

table finding acceptable South Carolina's May closure that we've done for just a portion of our state waters. I'm not sure that there is a lot of fruit in mandating seasons as part of the interstate plan.

I would like, quite frankly, that was a management tool that we employed that got a lot of support for our anglers, a lot of support in our General Assembly. I would like to have that in my tool kit, but I don't know that it is necessary for us to include those kinds of things as a requirement for the fishery management plan.

MR. A.G. "SPUD" WOODWARD: I just want to echo what Robert said. I think we've got enough other things to work with. We don't need to put parameters around season in this plan. I know from our perspective, we certainly want to be able to extend the opportunity to harvest over as wide a period of time as we can; and I'm thinking we've got the tools to do that.

DR. DUVAL: I will add my echoing to Robert's comments about not having any mandated type of coastwide season that is clearly not going to work. I think looking at the questions that Dr. Daniel has on the board, are season decisions best left to the states to develop and have approved by the TC and the Board. I think my response to that would be yes.

CHAIRMAN ESTES: Okay, anything else with that? I think we got what we need, unless there is somebody that has something else to say. Yes, Michelle.

DR. DUVAL: I would probably be remiss if I didn't once again state for the record what we've heard from stakeholders in North Carolina at least, with regard to having hard and fast state-by-state allocations. They are not interested in that at this point. They are more interested in the flexibility that would be provided with state-by-state seasonal approaches.

I think having sat around the Commission and watch some of the struggles with trying to

implement recreational state-by-state allocations on other boards. Having something hard and fast like that I think really trends us in much more supportive of seasonal decisions left to the states that come forward through a technical committee review; and then are reviewed and approved by the Board. I just wanted to add that.

CHAIRMAN ESTES: Joe.

MR. CIMINO: I'll be brief. Just to that end. In Virginia we did go with a May closure, and of course it doesn't have the meaning that it might have in South Carolina or Georgia. But we know with these MRIP estimates which is putting us in this difficult situation that as you drill down, the estimates are even more questionable.

When we're talking about a wave estimate, we may not have that much confidence in that. But we did make a biological argument as staff at VMRC to our commission that any removals that are prevented in May, are going to allow more fish to spawn. I think that really drove that closure, so to have that type of flexibility at the state level and not forced by an FMP is why I would support that.

DR. DANIEL: I think it's important. I hear some disconnects, and so I just need to make sure that I am moving forward in the appropriate direction in developing the management options. I heard concerns over a state-specific allocation; and developing a season based on a state-specific allocation.

The way it is moving right now and my understanding thus far, is that we actually would be developing options for state-specific allocations; based on the number of fish with the 2015 terminal year. The states would be assigned a specific allocation under the current options. There would be no alternative, at least at this particular minute; there would be no alternative seasonal option that was not anchored by a specific state allocation. I'm not exactly sure how to develop seasons without a specific target harvest amount. But if there is

that interest by the Board, I mean I certainly heard from North Carolina that there is an interest in not having a specific state allocation.

I'm not sure how to develop those seasonal options for the plan. My understanding is the individual state would go back home with a specific quota, and develop the season that they believed would constrain their harvest to within that specific allocation. If there is more that needs to be included in the document, I need that direction; and an explanation as to how you would like to see that developed.

DR. DUVAL: Yes, you know when we had this discussion at the working group there were several of us who indicated that we were not interested in state-specific allocations. I think we've seen the difficulty in trying to manage a recreational fishery by a state-specific allocation. We spent probably eight hours on that yesterday. That is why I bring forward or in support of the more flexible approach of the states developing state-specific seasonal options. Certainly for inclusion in the draft fishery management plan that would go out to public comment.

I think looking at how each state's proportion of the overall harvest changes, based on the scenarios that you've illustrated here; and you know, the three year, the five year, the weighted options so that the public can have something to look at to see how those have varied. But I think stakeholders have been pretty loud and clear that they are not interested in state-specific allocations until after there is a new assessment. That is where I'm coming from.

CHAIRMAN ESTES: Lynn.

MS. LYNN FEGLEY: Just to echo that point. I think as one of the states to the north of the epicenter, if we were to go to state-by-state allocation, which I agree with Michelle. I think we had a slightly different direction on the work group calls. I am not clear what happens to Maryland, Delaware, and New Jersey. Does that mean we get 0 percent?

Does that mean we have no fishery? What does that actually mean? I would have a very difficult time going home and saying, well gee folks, you know we've got 0 percent because we have no history; so just toss back that cobia. I think we can work within the confines of the size limits and the vessel limits that we discussed. But if we go to state-by-state allocation I think things are going to get a little more dicey, at least in our more northern waters.

DR. DANIEL: In terms of the episodic landings north of Virginia, I think that's going to have to be worked out in the de minimis criteria and how we develop that. I don't think there is any intent of sending anybody home with a zero quota when they have a historical landing. That does occur in New Jersey. There was one year with landings in Delaware and Maryland. I think that was one of the concerns that we had discussed, especially when you go north of Virginia and there seems to be these smaller fish.

We really haven't discussed how to deal with those fish that are being caught that are in the 20, 22, 24 inch range. But the idea so far has been, if we have this one fish, 36 inch size limit there may be, as somebody brought up the point that there could be some misidentification problems up there in the northern sub unit that they may have been remoras of some kind as opposed to cobia. It is kind of hard to imagine a 24 inch cobia in New Jersey that is a two-year-old fish. That would be an interesting situation. It is hard to determine that. I guess going back; I mean I understand the working group discussions on the seasonality. But what we've got in our tool box right now as I understand it is there are options out there to begin the season later; to implement some type of a spawning season closure, which we'll talk about here in a minute. We probably don't even need to at this point.

But there is some interest at the Plan Development Team at least, of having some type of spawning season closure; if that is something that the Board would want to consider and

individual states would want to consider. But essentially, when do you start your season and when do you end your season?

In order to make that determination the only way I can come up with doing it is to have some type of target, some kind of an allocation that assures at the South Atlantic that we're maintaining our harvest within that 620,000 pound ACL. If that assurance is not provided in the Commission plan, I don't know how that is going to impact the decision making at the federal level to get the EEZ open, which tends to be one of the big issues, is one of the major issues for the more southern states.

That issue tends to vary and be more important as you go from north to south; very little harvest in the EEZ off of Virginia, more off North Carolina, even more off South Carolina, and the majority off of Georgia. That is an issue that Bob and I want to discuss with the South Atlantic in June at their meeting in Florida.

But trying to get from the National Marine Fisheries Service what type of plan do they want to see, and I think the allocation issue is the only way that I've been able to come up with to meet the first requirement that the Board directed me to do, was to stay within the ACL. I don't know any other way to do it, and I don't know how to construct the seasons without there being some kind of a target to shoot for. That is my problem. If there are other issues and if there are other ways to do that I just don't know how to do it.

CHAIRMAN ESTES: Dr. Crabtree.

DR. CRABTREE: It is not entirely clear to me how you would do it and still fit it under a management construct that is built around annual catch limits. There will still have to be an overall annual catch limit in the Council plan. Now I guess it might be possible if you did some sort of more F-based, mortality-based approach to set seasons that you think are going to constrain the fishing mortality appropriately; and not focus so much on how many pounds of fish that are caught.

But that is problematic with the annual catch limit approach that is required under the Magnuson-Stevens Act. I think one thing you ought to think about, because I know your objective is maximize flexibility I've heard a number of times. The alternative way to go with this would be to remove cobia from the federal fishery management plan, the Atlantic stock; and then let the Commission manage the fisheries through your Commission plan.

At that point you wouldn't have to base your management around an annual catch limit type of strategy, and you may be able to implement some of these types of management schemes like Michelle has brought up. That is probably something that you ought to give some consideration of. I think that could potentially get us to a less cumbersome, more efficient way of managing the fishery. I think the Service's interest in this is just finding a management paradigm that can work in this fishery efficiently.

I don't think just federal management. Clearly that is not a successful way to go now. There may be a way to get to what Michelle is describing under an annual catch limit management paradigm, but it's not entirely clear to me how we could get there. But the alternative might be to rethink how we approach the whole problem.

DR. DUVAL: Roy, I'm really sorry that you weren't here for the seven and a-half hours worth of debate that we had yesterday around the summer flounder, scup, and black sea bass board, because that board is constrained by the federal annual catch limit for those species recreationally; and that was the bulk of the conversation yesterday, was how to craft state-specific measures to maintain harvest within an overall annual catch limit.

I feel like we've answered the question that is on the board, our season decisions best left to the states to develop and have approved by the TC and the Board, and we said yes. What are the tools that we have to do that with? We've agreed on a one-fish-per-person bag limit, a 36

inch size limit. Where the flexibility lies is in when you start and end your season, and the vessel limits that you apply.

It wouldn't matter if we had an annual catch limit or not. When you calculate what type of harvest you are likely to end up with, based on once again past performance of the fishery, which as we know is uncertain with the numbers that we have to deal with through MRIP. But that's what you do.

You base any projection of how much you might harvest, based on the past performance of the fishery, by applying those variable season and vessel limits. I mean that's how you would project it. It doesn't matter if you have a state-specific allocation or not. What I've heard from other folks is that they don't have a desire to try to manage a state-specific allocation, and indeed don't necessarily have the tools to manage a state-specific allocation.

We're always going to be in a situation with a pulse fishery like cobia, where we develop a suite of management measures based on past performance of the fishery. We're going to evaluate that the next year. It's clear to me that there is not really an effective way of in-season management with this fishery right now, and it is so subject to environmental variability as well that it is going to be very difficult to do that.

Now Dr. Crabtree has brought up the option of transitioning from a complementary state/federal fishery management plan to solely a Commission plan, which would certainly provide I think flexibility to manage under an F-based approach; which is what we used for striped bass. Maybe that's a separate conversation.

But I really wanted to get to the question that I thought we'd answered with regard to season decisions best left to the states and developed and approved by the TC and the Board, which I think is not much different than how we do things under some other boards; and that is how we would evaluate what projected harvest is.

It's not relevant whether or not there is a specific allocation to one state.

CHAIRMAN ESTES: Dr. Carmichael.

MR. CARMICHAEL: It seems to me what Louis is getting at is there needs to be some way of anchoring how you determine this flexibility. If we know that the combination of the bag limit and the size limit won't constrain the fishery to the ACL, then there is going to have to be some type of season.

If you were to say set an overall base season coastwide, then you may have a way of giving states some flexibility to deviate how they take that length of season and apply it to their respective fisheries. That won't be easy, because you're going to have to come to grips with, you know what periods do you use to establish that base; because we've had a number of regulations changing and we've got a lot of data changes that are underway.

It will certainly be a challenge. Then you know that the catch rates are probably not consistent across time. When a state shifts its season may affect that state's respective catch rates. You will have to have some way of deciding what is equitable across the different states, if they chose times with different catch rates.

But I think you will have to anchor this in some way, if not by the state-by-state shares of some sort then by some base season that you allow states to deviate some; which I think an example there is what happens with waterfowl seasons where the Fish and Wildlife Service sets X number of days.

Then states regionally have the ability to decide when to apply those numbers of days over the particular window. You may have to do something like that. You may pick a six-month window and have a four-month season that states can deviate the start and end dates within their perhaps. But I think that one or the other is going to have to be anchored.

CHAIRMAN ESTES: David, I see your hand up.

MR. DAVID E. BUSH, JR.: The state quotas that I've heard from as well, going back to the conversation previous here, would be interested in having it removed from federal fisheries management. That would apply the flexibility needed too, especially the southern states that have no access otherwise. I'm not sure what needs to be done to bring that further into conversation or even a motion, but I would be interested in hearing some other perspectives.

CHAIRMAN ESTES: Why don't we break? Lunch is being served out there right now, I guess. Can we break for lunch, think about all this, come back; because I think we're kind of in a spot we're a little stuck.

(Whereupon a recess was taken.)

CHAIRMAN ESTES: If I could have your attention. I think we had a suggestion or a question that was asked right at the end, before we broke for lunch, about whether we want to have a complementary plan, and whether we might want to request management through the Atlantic States Marine Fisheries Commission. I would like to go ahead and have a discussion about that if we could, please.

DR. CRABTREE: Let me say, Jim that from the Service's perspective, we're just looking towards an effective management paradigm. We're not looking to withdraw the level of support and particularly scientific support that we've provided in recent years. Our intent would be to continue to provide all of the types of support we have.

CHAIRMAN ESTES: Do we have anybody that would like to start the discussion? Spud.

MR. WOODWARD: Let me swallow my biscuit down here. I'll speak in support of that. Being on the southern end of this, our fishery is almost episodic. We know generally when the fish might move through, but when they are there



and how long they are there is dictated by a lot of environmental factors.

If we are unsuccessful through whatever we do at the interstate level to show the Service that we are constraining the harvest; in order to be able to stay within the ACL. We are going to end up with the federal waters closed like they're closed this year. Since our fishery is almost exclusively federal waters, then the longer we're bound to an ACL the more risky things are from our state's perspective. I can certainly speak to I think it needs reconsideration, especially after the necessity of closing it this year.

CHAIRMAN ESTES: Anybody else not have a biscuit that can talk to this issue? Michelle.

DR. DUVAL: I think this was a conversation that we had early on when the South Atlantic came forward. The question was would the Commission consider complementary, joint, or sole management. I think if the Board is reconsidering the decision of complementary management, and would like to move forward with the request for sole management.

I think my recommendation would be to probably make a motion, and to request the South Atlantic Council that they consider turning over management of Atlantic cobia to the ASMFC. I would look to others around the Board, but I think having a motion to do so would probably be useful.

Then the Commission could send a letter to the South Atlantic Council. Clearly there would need to be some conversations there about how we would move forward doing that logistically; given that there are a few balls in the air with regard to stock delineation and what that might mean.

**MR. BUSH: I don't know that I have all of that memorized, but I would like to make a motion to that; if I could get some assistance putting it together.**

CHAIRMAN ESTES: While we're doing that do we have a second? I guess while we're getting that. Well, we already have it up on the board. How about some discussion about this, David, I think you first, please.

MR. BUSH: Certainly, thank you, Mr. Chairman. I probably can't give as much of the technical justification. I just understand that the way that it has been managed so far, the stakeholders are obviously not happy with it. The flexibility for the states to do what is particularly tailored to them has been discussion of the past couple of days. Without that ability all we're doing is trying to make a one-size-fits-all for everyone. It is obviously not working at this point. I think that we'll have hurdles that we'll need to address, and that is the case with any other fisheries. I am willing to put in the time that I can to help address those hurdles, but I know I'm speaking more so for the others doing the work. That is about it, thank you.

MR. CIMINO: When Dr. Crabtree brought this up today, it really was no surprise; because to some extent it was an elephant in the room, I think. We know that if this moved forward we would at least likely be managing towards an F target instead of an ACL. We know many of the folks on this Board know there are still challenges to that.

Overall I support it. I know managing to F targets means you need updated assessments, and you need assessments that are speaking to whether or not your management actions are working. I know moving forward that maybe one of our biggest challenges is where cobia falls on assessment updates, and who ends up handling that responsibility?

MR. BOYLES: My thinking on this continues to evolve. As the Board knows, we've been very aggressive in managing cobia in South Carolina. A lot of concerns I've mentioned already, and just to remind folks. We have a spawning season closure in an area where these fish are very accessible.

I've talked about cobia fishing in a canoe, which is literally obtainable in the Port Royal Sound area. It is a game fish, so there is no commercial take of cobia in South Carolina waters. I remind the Board that last count 80 some odd percent of our cobia were taken from federal waters. Our fishery has transformed the last several years as that inshore fishery has been fished down.

But having said that I think I could support this, with the understanding that what Dr. Crabtree indicated that the Agency intends to continue to provide scientific support for assessments. I would also be looking at ways to extend our management measures into federal waters, recognizing that at least off South Carolina 80 some odd percent of our fishery is located there.

CHAIRMAN ESTES: This is a pretty bold step. I want to make sure that we don't have discomfort that's not said out loud. Spud.

MR. WOODWARD: The one thing I guess I just want to make sure I get on the record. I certainly don't want to slow down what we're doing, while this potential change in direction is debated; because if we don't do something we could find ourselves in the same situation next year, where the Service is compelled to close the EEZ.

I don't know how we're going to balance that out. I think the commercial fishing management part of this is something that is going to have to be considered and contemplated. If the Board supports this motion, and we decide to engage in a renewed discussion with the Council and the Service about this, is it going to stop everything we're doing?

In terms of promulgating an interstate plan, or can we move forward with promulgating an interstate plan with its own specific measures and requirements; and you'll have the option to go complementary or sole at some point down the road, when some of the legal discussions and other matters that have to take place are concluded.

CHAIRMAN ESTES: Can somebody talk about the process here? Toni.

MS. TONI KERNS: I was focused on my biscuit just now, so sorry. Can you repeat the question for the process? I heard process.

CHAIRMAN ESTES: Spud was concerned that by us doing this that we might slow the process down, and he might be in the same shape next year that he's in this year.

CHAIRMAN ROBERT E. BEAL: I don't want Toni to choke on her biscuit, so I'll give it a shot. I think Spud's concerns are valid in that this Board should probably keep moving down some path to serve as at a minimum an interim transitional period. I don't remember the exact timeline, but when red drum management authority was transferred to solely ASMFC management that took quite a while.

Maybe that was because the federal waters were closed and there was no urgency to do that. But as you said, this is a bold step. It's a big change, and we don't know what the council's response to this would be. I think time can elapse pretty quickly here before something like this gets sorted out. Some interim step through a Commission FMP that allows more flexibility later on, should this occur, is probably a reasonable thing to do.

CHAIRMAN ESTES: Any comments on that? Roy.

DR. CRABTREE: From the Council side of things, we're going to need to do probably some type of amendment in either circumstance. It is a little different than red drum, because in red drum we were withdrawing an entire fishery management plan. In this case we would just be removing a stock from the fishery management plan, and we've done that on a number of occasions in the last few years.

I think Bob's advice is good that we continue to explore both options here, and so we have a better read on what the Council's likely view of

this would be. Also I think it would be wise to sit down and spend us some time with the Council and with the Regional Office attorneys; talking about all the pieces of this, and get a better appreciation of how quickly either avenue can move.

CHAIRMAN ESTES: Okay Wilson and then Robert.

DR. LANEY: One change that would occur if cobia is transferred to ASMFC is the same thing that happened with red drum; which is you would lose essential fish habitat. I can't remember whether any HAPC has been designated for cobia or not, but you would also lose that. You could potentially, depending on what happens with the Gulf Council or Gulf Commission, I suppose.

Roy and I had a little bit of conversation about that. But you could also wind up in a situation where you have essential fish habitat and HAPC in place in the Gulf of Mexico, like is the case for red drum, but not in place on the Atlantic coast. That is just one thing to think about, and I am saying that from the perspective of a member of your Habitat Committee.

MR. BOYLES: Just a perfecting comment. I believe were we to go and approve this, I would suggest that the request should be made to both the South Atlantic and the Gulf Council's. I think they share jurisdictions for the plan itself.

CHAIRMAN ESTES: Yes, so we're not really clear. In my mind we're not really clear about what it is that we're doing. Are we removing the one existing stock? Are we going to request removal of both stocks? I'm not really clear on what we're requesting here.

MR. BOYLES: To that point, Mr. Chairman, either way if the Feds were to turn loose of this, I believe it would require action on both councils. I'll look to Dr. Crabtree to clarify that.

DR. CRABTREE: Yes, I think it would be fine to send the request to the South Atlantic Council. But Robert is right that it is a joint FMP, coastal

migratory pelagics, so the Gulf would have to approve it. I'm reading that we're talking about the Atlantic cobia stock. That is what the interstate management plan has been focused on, and that is where the problems that we're talking about have been. My assumption has been that that is what the motion applied to.

CHAIRMAN ESTES: Okay. Michelle.

DR. DUVAL: Given the comments that have been made around the table, it sounds like there is a little bit of uncertainty. People want to continue moving forward on the path that we're on; which I completely agree with. I'm wondering if there might need to be some additional perfecting that you know the requests would be that the Council's consider transferring management authority. Because that might allow for that discussion and not seem like a cow grab, or whatever you want to call it. That softening might help.

CHAIRMAN ESTES: Is the maker and seconder comfortable with that? Joe.

MR. CIMINO: To that end. I think we do need to continue moving forward with something. I assume that this may be a process that takes some time, and I would actually kind of hope that the Council wouldn't make that decision until perhaps after the assessment is done and decisions on stock ID.

DR. CRABTREE: Well it will be a process, and so I think what you're really asking the South Atlantic is to consider this and advise you. But they would have to go through an amendment, so there will have to be public hearings and development of amendment and analysis; and particularly a rationale for why federal management is not necessary and state management would be more efficient.

My hope would be we could get through that process along the timeline that's similar to the one we are here. But under any circumstance the Council will have to come in and make modifications to the plan to reflect the interstate

management plan, whether it is complementary or the sole plan. We're going to have to go through that process under any circumstance.

CHAIRMAN ESTES: I get the sense we kind of have our minds made up about this, so with no objections. I'm sorry.

DR. DANIEL: Just a couple of comments, and just to make sure that we're all on the same page here, is that this would not impact the SEDAR 2018 proposal. We don't want to lose that opportunity, not only to address the genetic stock boundary issues, but also the stock assessment.

**CHAIRMAN ESTES: I'll read the motion. Move to request that the South Atlantic Fishery Management Council and the Gulf of Mexico Fishery Management Council consider transferring management authority of the Atlantic migratory cobia stock to the Atlantic States Marine Fisheries Commission. Motion by Mr. Bush and seconded by Mr. Cimino.**  
Robert.

MR. BOYLES: Mr. Chairman, I presume that this is going to come in the form of a letter that would have to go to the Policy Board?

CHAIRMAN ESTES: I was going to suggest the same thing. Is that correct, Robert?

EXECUTIVE DIRECTOR BEAL: Just a quick comment. Looking back at the motions from the Policy Board, when the Policy Board granted this Board the authority to initiate a cobia FMP, it actually said for this Board to explore management options; either complementary, joint, or sole management of cobia.

Given the timing of this it is a little bit awkward, because the Policy Board has already met. We can send around an e-mail to the Policy Board, let them know that this group would like to do that and some rationale. We'll get an approval that way. But I think they've already set the course essentially to allow this to happen; should this Board decide it's appropriate. But I'll follow

up with an e-mail to the Policy Board after this meeting.

CHAIRMAN ESTES: Are you good, Robert? **Okay let me try it this way. Is there any opposition to this motion? I guess seeing none; the motion is approved.** I think now, based on the discussion that we can quickly maybe go back to what Louis was trying to put together, and we can finish that up; because it sounds like we still need to be thinking about management. This may need to be adjusted in the future, but I think we can just continue.

DR. DANIEL: Let me try to summarize where I think we are. The state-specific allocations were more intended to provide a framework on how seasonal options might be constructed to maintain the harvest within the ACL. There was not a consensus of the working group that specific statewide allocations be implemented at this time.

That may be something decided on in August, but at the present because the options would be developed that would provide that summary of how the state landings occur. If you go back and look at Framework 4, and you look at the different seasonality of when the fishery occurred, it has changed dramatically. A one fish, 36 inch size limit, with a two-fish vessel limit would extend the season out to October, if you only looked at data through 2012; whereas that season is constrained to around the middle of August if you look at the more current data.

I think it is important to continue moving forward with the various options that would provide the states with the authority to select their own seasonal options, reviewed by the Technical Committee and the Board. That seems to be the direction that the group is heading. One point of clarification that I think is important, and I'm glad Roy is here so he can correct me if I say anything wrong and Michelle too. We're not overfished and overfishing is not occurring. The terminal year of the stock assessment is 2012, and the stock status was declining in terms of biomass. Down from an F over Fmsy, in the 4 to 5 range down to about a 1

and a fraction, so we're close based on the stock assessment. Depending upon the level of confidence you have in that peer reviewed stock assessment, we're probably in a concerning state.

The fact that we've doubled the quota in the last two years might lead one to believe that an updated stock assessment using current methodologies probably wouldn't show any improvements. The concern is still though trying to maintain the catch levels within the Council's ACL, which we've been mostly unsuccessful doing to this point.

But if we go over, and I think this is an important point to make. If we go over the 620,000 pound recreational allocation, or the 50,000 pound commercial allocation, there is no payback provision at this particular point in time. What the Council plan does is drop you back to the allowable catch target, which would suggest that you're trying to harvest 500,000 pounds as opposed to 620, or 670.

But there is no requirement other than to shorten seasons in order to try to accommodate that. It is my understanding that as we proceed in this plan, and develop any kind of options that would develop seasons; that if we didn't hit the mark in the first year that our reaction would be to adjust those seasons the following year, in order to try to limit the harvest back down to the allowable catch limits.

For those of you that might believe that there is a payback provision or some kind of a penalty for going over; that doesn't exist at the present time. But I think it is something we need to be cognizant of, because in some level of likelihood the stock is probably not going to fare as well in the next stock assessment; maybe it will.

Maybe the new information, maybe additional information will tend to suggest that things are better than we anticipated. But if it doesn't then we kick ourselves into an overfished, overfishing situation; which kicks in a totally different

scenario, and a whole different set of rules and requirements.

The one thing that I would ask is that we consider what is in the best interest of the resource moving forward. Is it to remove the ACLs, because they're a hassle, and because they may not allow us to manage it specifically the way we want to at the state level; or is having those constraints from an ACL an important component of the fishery?

I think it would be important to have our technical folks look at those questions to see, how can we best manage this fishery to maintain its important status on the coast? I hope that helps to explain part of the confusion was mine, in terms of the state specific allocations. But if everyone seemed to be satisfied with the decisions made to date, if we go back, well I can't go back for some reason.

My computer won't let me go back. The previous slide, no keep going, so it was the one we were on. There was general understanding at this point. Go with one fish, 36 inches up to six fish vessel limit; the allocation information and the potential for states to develop their own seasons. That is where we are right now. I believe that is consistent with what I've heard around the Board table today.

CHAIRMAN ESTES: Roy.

MR. ROY W. MILLER: Jim, just to pursue something I talked to you about over the break. Following up on Lynn's suggestion, could we reach an agreement that all states north of Virginia that are within the historical range of this species consider the one fish per person daily harvest limit and 36 inch minimum size limit, the six fish per vessel limit and no further restrictions; like no seasons to worry about for those states that could otherwise qualify for de minimis.

CHAIRMAN ESTES: Any issues with having that as an option in the document? Okay, seeing none.

DR. DANIEL: The next is Issue 6. These are some other board questions, decisions. I'm not so sure that we really need to get into this now, after the discussions that we've had, unless there is interest from the Board to discuss these. I brought up the point, because this has been a very important issue for the state of South Carolina that they have implemented a spawning season closure in their southern management area; the question of should the FMP include options for similar closures in other states.

There was some strong interest, maybe strong expressed by some of the PDT members about spawning season closures. But it appears to me that based on the previous discussion that would be left up to the states if they wanted to try to set up seasons that would impact spawning season times.

Try to get the best bang out of their spawning season as possible but that there not be anything specific. I am not sure we have the best data to analyze what the actual spawning seasonality is on a coastwide basis. Unless there is interest from the Board in pursuing this option, I would ask that we potentially remove it from the document.

MR. CIMINO: Dr. Daniel, if your predictions on a new assessment are right that may be Addendum I, but I agree to leave that out for now.

DR. LANEY: Well, given the interest of the PDT and given what Louis just said about whether or now we have adequate data to really make a determination as to when these fish spawn, I would be interested in at least seeing us look into the literature; and see what information is out there.

As you said that could still be left up to the states to determine, based on whatever data are available to them. I would guess that if we do have sufficient information, it is probably going to show some sort of latitudinal variation with

fish further south spawning earlier; and so forth and so on.

DR. DANIEL: Next slide. Again current vessel limits vary by state up to four fish, and again as we've discussed vessel limits could impact the NMFS decision to open the EEZ. It does seem that everyone agrees that the FMP should include options to complement federal actions sufficient to allow the EEZ to open. One option is to include a request to extend state regulations into the adjacent EEZ. I'm not sure at this point where we are in the game, if we're requesting the transfer.

This is going to require action from the Council, and so I would wonder if we want to put our Council request eggs just in the transfer basket or ask for these various modifications. I'm not sure what the Board would prefer here. Otherwise, we would be relying on NMFS that if we were to implement a plan that constrained the harvest to the ACL; that there would be some agreement that we would be able to get the EEZ open at some level during the seasonality where the states are most involved in the EEZ fisheries.

DR. DUVAL: I agree with Dr. Daniel in terms of putting all the eggs in the transfer basket. I think you want to have that conversation first, so my recommendation would be to keep some component of this in here that could go out to public comment; because if the eventual decision ends up being complementary management or it is complementary management for some period of time.

I think this example here to include a request to extend those state regulations out into the adjacent EEZ provides some of that access and equity and parity for states like South Carolina and Georgia, where the major component of their fishery is in those EEZ waters. I guess it would be my recommendation to leave that in there as we have those exploratory conversations.

CHAIRMAN ESTES: Dr. Crabtree.

DR. CRABTREE: Yes, let me assure you that my goal in all of this is to get the EEZ open again, so we can have a season. We have a stock that is not overfished, not undergoing overfishing; and I certainly am not comfortable with having the EEZ closed under those circumstances.

There are a couple of ways to think about just mechanically how this would work. Currently we have an annual catch limit, and the fishery opens when the season starts, and then we close it in order to avoid going over the ACL. If we had the complementary plan in place, we could open when the first state decides their season is going to begin; and then the states would control the landings in their states by controlling when they allow landings to occur.

At least in theory the ACL should be caught when the last state closes their season down, because that would be what the full conservation equivalency would be based on. That would be one way to do it. The EEZ just opens. The states control their harvest by regulating landings in those states; and then the EEZ closes when all the states are closed.

I guess the other way to do it would be for the states to come in advance and tell us this is going to be our season, and then we could open and close the EEZ according to what each individual state does. I guess we would have to have some lines out as to what's open and closed. That is more bureaucratically cumbersome I think. But I think we could really do it either way.

But I think it is a good topic to discuss at the Council level, because it might require changes to the accountability mechanisms. But that is sort of my thinking on how mechanically two ways I could see this working in a complementary plan. Then the commercial fishery, which we haven't talked about very much, we would have to figure out how that would go as well. But I think that's a lot more straightforward.

DR. DANIEL: Next slide. This has been an issue that has been brought up in multiple boards over

many years, in terms of tracking the recreational ACL on an annual basis. Effort data are unavailable until after a wave is complete, and could result in significant overages; despite best efforts, as we've seen in the cobia fishery. The question would be should the FMP try to develop or discuss alternative ACL monitoring methods to track the ACL on a scale finer than waves?

I'm not exactly sure how to do that. That was a request from various folks, but I can tell you from the work that Mr. Wilson did in North Carolina, he was not very comfortable in looking at the data at any finer a scale than I believe it was monthly; for the majority of the data. I know there have been discussions around the building about ACCSP and other avenues, but I'm not precisely sure how we might go about making those changes specifically for cobia. But I bring it up for your thoughts.

DR. DUVAL: I think as Dr. Daniel indicated there are a number of balls in the air with regard to alternative means of at least reporting harvest recreationally. The Council has a pilot project that has been funded by the Fisheries Service that is looking at working with the Snook and Game Fish Foundation to modify their reporting Ap. It was specifically for red snapper, I believe, and discards of red snapper.

But we've had some discussions about possibly expanding that to include cobia on a pilot basis, you know to determine if anglers are amendable to that, what type of response we get; that sort of thing. Our chairman is probably familiar with multiple programs that are going on in the Gulf of Mexico, similarly looking at almost census type of reporting I think; in some of the smaller states like probably Alabama and Mississippi with regard to red snapper.

I think all those things are good, and we can probably learn from those experiences, in regards to recreational reporting for cobia. The state of Virginia has required reporting they're doing this year. North Carolina, our Commission voted to request anglers to bring fish to our

citation weigh stations; which we're sort of piloting that this year.

There are some alternative methods out there. I think there is a certification process that would probably have to be undertaken to be able to use those numbers, rather than MRIP to track harvest. I think the other thing that we are interested in pursuing, and I've brought this up a couple other times at the Board, are some of these alternative estimation techniques that the MRIP staff have developed for rarely intercepted species that they have applied to several of the South Atlantic Council rarely intercepted species.

Cobia does not happen to be one of them, but some of our deepwater species and that has been a presentation made to the SSC. We've had some back and forth on again, who is the decider, in terms of when those methods can be applied and how you would apply them. But given that at least at the federal level right now, our accountability measures are not in-season accountability measures they are post-season accountability measures.

It doesn't seem to me that there is a great need to track harvest on a wave-by-wave basis in season, because we can't track it quickly enough or accurately enough to actually take any action. Some of these alternative techniques that use annual or multi-year levels of catch estimates and effort estimates that result in greater precision in harvest estimates might be more appropriate. The Council is pursuing that. Dr. Van Voorhees referenced a workshop that the South Atlantic, Mid-Atlantic, Gulf are working on to evaluate those. Personally I would like to see cobia move along a little bit faster on that; but that is just my opinion, so thank you for letting me talk on a little bit. I'll shut up.

DR. DANIEL: All right, I think that is a long way of saying no. Yes, okay. I didn't mean it disrespectfully. I think I agree with Dr. Duval, and I don't know that we would get much traction if we just tried to do it for cobia. But

there is the need, and I think everybody is aware of that.

Just before I move on away from the recreational side, I will let you know that we have been working on putting together the document. We're very close to an FMP. I'm glad to at least see some light of day before any transfer of authority. All the states have submitted their information, and I'm hopeful that we can move forward.

We probably will not need another working group call, but if we do I will contact the Chairman, if we run into any problems. I will work up some language, because there was clear interest in the de minimis section, and get that out as well; so that folks can take a look at that and make sure that they're comfortable with that approach, especially for those states north of Virginia. Make sure they know they were not left out.

The final issue is commercial management options. The working group really didn't discuss commercial issues. The Framework 4 essentially maintains status quo, which is the current essentially bycatch allowance; which is a coastwide two fish at 33 inches fork length and six fish per vessel.

We've received very few public comments on the commercial fishery. In fact, I think all of the comments were maintain it as a bycatch fishery and essentially maintain it as it currently is, it's working. The quotas have not been exceeded to much degree, and just to maintain what we currently have.

The only suggestion that was put forward and it was by a commercial fisherman, I believe in Virginia, was to require that commercial landings be reported in whole weight. I don't know if that is something we want to consider or not, how that might conflict with the federal plan. But at the present time I would move forward on the commercial options; maintaining the Framework 4 options, which is status quo coastwide.



They have about a 50,000 pound ACL, and there was not the intent at least at this point, to try to look at allocations amongst the various states on that fishery. We could do that if you would like, but if we're not going to make any changes I didn't see the need to do that unless you request it. The information will be in the document so that you can look and see what the various states land; in terms of commercial landings.

MR. BOYLES: I think we need to think carefully about this. Before he left, Spud had suggested you know one of the issues with completely eliminating federal management is how do you manage the commercial fishery? At least in my experience cobia has been a bycatch fishery on the commercial side. The 33 inch fork length might be a problem and a problem in the following way. Are you fishing as a commercial fisherman, you can take a smaller fish. It is my understanding there is no permit in federal waters, and so right now we're dealing with some issues back home where folks are buying a state commercial fishing license to go out and access that commercial ACL. I think this is something that is going to require us to think about consistency, and I'm going to refute what I said last meeting. Quoting Oscar Wilde, "Consistency is the last refuge of the unimaginative." But the first refuge of the fisheries manager.

DR. DUVAL: Just a couple things, in terms of tracking landings and pounds whole weight. Right now coastal migratory pelagic species landings are tracked. They are tracked as landed, so it is a mix of whole weight and gutted weight. This was something that we had a discussion on at the previous Council meeting in March, and that we've asked.

I believe it's going to come up again on the mackerel/cobia agenda for this meeting; because we wanted to get some input from the Gulf Council with regard to, would you want it tracked all in whole weight or gutted weight. But the pitch I made was that really for the data providers, it would be good to have a consistent metric, because right now that causes some

confusion when they are pulling data down from ACCSP; you know which cell you're pulling data from to compile it. I just wanted to let folks know that.

Then in terms of the commercial fishery, at the Mackerel/Cobia Advisory Panel meeting just a few weeks ago, I believe there was a motion made to implement a commercial cobia permit. Now the council had considered this previously, and I think maybe in Amendment 20A, when we were looking at splitting things into northern zone and southern zone, and at that time none of the states were interested in moving forward with any federal permit at that time; given that it was more of a bycatch fishery.

But I think the motion from the Advisory Panel was to ask for a limited access cobia federal commercial permit, with requirements to have a history of commercial sales to qualify; or any other federal permit. This is something similar to what the Council has considered in the past, where I think if you had any other federal commercial permit you could land cobia. That is just an FYI for the Board that that topic, in terms of the commercial fishery has come up in sort of this loophole that has been created by not having a federal permit.

DR. DANIEL: Just to the earlier point, Michelle, the issue of whole versus gutted weight. It would be interesting to hear some discussion from folks as to which one provides more biological information. It would seem to me for cobia, with a pulse fishery during the spawning season that perhaps whole weight versus gutted weight might be more informative.

I'm not sure. But in the discussions on that if it's based on the ease of doing it or the quality of information received, you might want to err on the side of the quality of information received; since we do know so little about the reproductive ecology that could help there. Then my final comment would be, and I'm sorry Spud's gone, but it's to thank Kathy Knowlton put together a lot of good information.

She's been very helpful on the working group and the Plan Development Team, and there is a lot of information that she's provided that will be very helpful in developing the plan. I'm sorry she's not here, but I do want to shout out to her for the work that she's done for the state of Georgia; thank you.

CHAIRMAN ESTES: Thank you, Louis. I expect we'll see a nice, nifty document in August that will have all this information in it? Okay if we can move on then to a couple of stock assessments. Atlantic croaker, Chris is going to give a report on the Atlantic croaker stock assessment. Yes, sir.

DR. MALCOLM RHODES: Before we leave cobia, and I don't know if this is the right venue for it, but I didn't know where to ask. Last year the ACL was reached and federal waters were closed. After that point essentially another ACL was prosecuted, closing this season, which closed Georgia with 100 percent and South Carolina, since we follow the federal mandates.

Both of our states have no seasons for cobia fishing at all. What measures have North Carolina and Virginia put in place this year to try and prevent a recurrence of over catching the coastwide ACL, and possibly us looking at 2018 with a closed season also? I mean I don't know if this is the appropriate time to ask; but while we have the whole venue together.

CHAIRMAN ESTES: Michelle or Joe.

DR. DUVAL: Malcolm, are you asking what state specific measures our respective commissions have put in place?

DR. RHODES: Correct, because we're under the same.

DR. DUVAL: Our Commission established measures effective May 1st through August 31st of one fish per person up to four per vessel for both charter vessels and private vessels; and then you know we have a shore-based fishery that is probably the chunkiest on the coast, and that would be one fish per person as well.

It is different than what we had last year, which was a Monday, Wednesday, Saturday two fish per vessel, private boat season that ran from like May 23rd through September 30th. Then for charter vessels it was fishing seven days of the week, one per person, four per vessel; shorter on the back end by a month this year, but far more generous on the private boat fishery.

I will just say that was not an option. Staff provided analyses to the Commission that looked at different start dates of measures, different vessel limits, one fish per person limits; and that was what the Commission chose. That was not an option, it was advocated by staff.

MR. CIMINO: It was a difficult challenge for us as well. Michelle talked about the analyses, and I think that we've all been pretty much on the same page on how to do that. We did something very similar to what the Science Center was doing to predict harvest. We were concerned with what happened in 2015.

We put measures in place in 2016 that we projected would have a harvest estimate of about 330,000 pounds. That estimate came in at over 900,000 pounds; so it was a very difficult challenge to go to the public and to go to our Commission and give them projections. They went with something that they felt would be restrictive.

There is a three-fish vessel possession limit. We've been at one fish for a long time on the possession limit. We have a 40 inch total length, which we feel is a good conversion for the max fork length that is used in the South Atlantic; and they went with a season of June 1st to September 15th. Again, we didn't spend a lot of time on what those projections are, because they haven't been all too meaningful to us lately. But hopefully it will provide some reasonable harvest level.

CHAIRMAN ESTES: You good, go ahead.

#### **ATLANTIC CROAKER BENCHMARK STOCK**

## ASSESSMENT 2017

### BENCHMARK STOCK ASSESSMENT REPORT

MR. CHRIS McDONOUGH: All right, are we all set? Just before we start, we're going to actually split this up. I'm going to do the data portion and then Laura Lee is going to cover the modeling section; since she did that. Okay next slide. I don't have the clicker, so Megan you are going to have to click it.

Okay so what we're going to cover is a little bit of basic life history; different datasets we looked at, commercial discards, recreational as well as the fishery independent index data. Then we'll cover the assessment model, the reference points and the stock status that their model estimated; and then research recommendations.

Okay spot are, oh spot, sorry. I apologize for doing that but going back and forth between those two species gets a little confusing. Croaker are demersal sciaenid and they're generally found nearshore waters from the Gulf of Maine all the way down to Argentina, and most abundant from Florida to New Jersey.

Relatively fast growing, they reach about 80 percent of their maximum growth within two years. Maximum age is 17 years. They typically mature between ages 1 and 2, and 100 percent maturity is reached by Age 3. One thing that confounds a little bit with croaker is the fact that they have this extended spawning season; depending on the area of the coast it can range anywhere from September to April, and there are arguments that could be made to stretch a little bit outside of that.

But that could sometimes throw some issues in the aging and some other things that we've dealt with in the past. Okay for the datasets, actually you can go two slides ahead. Start off with the commercial landings. The majority of commercial landings over the years have come from Virginia and North Carolina.

You've got periods of high landings that occurred in the fifties, the seventies, and then into the two thousands. In recent years you've seen essentially a steady decline from the peak that happened in about 2004 or 5. Landings by gear, early years you see the majority of the landings coming from haul seines as well as trawls.

The assessment time period shows a shift to gillnets and trawls in recent years, and then the fixed gear that's in there is primarily pound net, is the pound net fishery in the Chesapeake. Okay the commercial scrap bait fishery, these landings come primarily from North Carolina and Virginia. North Carolina is actually the only state that samples by species that gives us estimates for the species composition within the scrap and bait fishery.

We use the angle ratios of croaker to the total landings in North Carolina to estimate scrap landings; for landings of croaker in Virginia, and actually this was the same method that was used in the 2010 assessment for these scrap and bait landings. For the discard estimates, and this is one of the big sticking points that has happened, particularly with croaker for every assessment it's had; and that is the South Atlantic shrimp trawl fishery. We used a general linear model approach, which is the same basic approach that was used in the king mackerel assessment, which did pass.

Then we also looked at the Mid-Atlantic gillnet and trawl fisheries bycatch for discard estimates as well. One note, for some of the material we're covering here in croaker, some of the detail that I'm going to go into a little bit here for the shrimp fishery, I'm not going to cover in spot; because spot we basically did the same exact thing. To save time and just what we're covering, just so you're aware of that.

Okay the shrimp trawl observer program data was only available from 2001 onward. What we did was we used the SEAMAP survey, which essentially covers the same geographic range. It was used to estimate the discard rates for years prior to 2001. The way this was done was that

the GOM used that fishery survey catch rate to estimate a trend of relative abundance.

Then the shrimp trawl observer data catch rates was used to estimate the magnitude and the trend of the discarding rates in the fishery. The assumption is that as abundance changes the discard rates would change proportionately. As you can see on that graph, the discard rate and the SEAMAP survey, actually those two correlated fairly well.

Okay for the actual discards. Discards were relatively high in the beginning of the time series, but decreased through the early 1990s before bycatch reduction devices were required. There were particularly high discards in 1991; this was due to high effort and catch-per-unit effort that occurred in that year.

Discards were pretty stable through most of the 2000s, and then despite the declining or stable trends in effort during the 2010s, there actually was a slightly increasing trend in discards in the last couple years; and that is mostly driven by an increasing catch-per-unit effort over those particular years.

But the discard estimates generally followed the same trends as landings by the shrimp trawlers, your positive trend between the shrimp landings and the bycatch landings. The discard estimates from this assessment using this technique were actually greater than the discard estimates that were developed in the 2010 benchmark assessment; average is a little over 7.5 times greater. The 2010 assessment used a ratio estimator.

The gill net and trawl discards, this one we did use a ratio estimator expanded by reported landings. High discards occurred in the gillnet fishery in the late nineties, and the trawl fishery discards were variable; but there was really no consistent pattern there. We did see if there was a correlation between the gillnet and trawl net discards with the National Marine Fisheries Service Fall Groundfish Survey, which occurred in the same geographic area as the gill and trawl net fisheries.

But there really was no consistent relationship there. One thing to point out, the fishery discards for the gill net and trawl net were included in the model for removals. However, there was relatively low number of discards, particularly compared to the shrimp fishery; on the order of less than 250 metric tons annually. This was significantly less than the removals from the shrimp trawl fishery, so it plays a part but a very small one. For the recreational removals to the harvest, and this is total harvest as well as the estimated mortality from the recreationally released fish. Total recreational removals used in the model were the sum of the harvest, as well as the estimated discard mortality by number. Estimated discard mortality for the recreational fishery was fixed at 15 percent. We'll talk a little bit more about that. That was decided by the Stock Assessment Committee, and we'll address that a little bit more in a bit.

Commercial landings are included on this plot to show how well they track with the recreational harvest and mortality. For the recreational removals, total harvest and release mortality were done in number. Then recreational harvest in numbers and estimated annual discard mortalities was used as one of the annual removal factors in the stock synthesis model. Just to give you a big picture of the total removals that orange or yellow there that is the shrimp fishery discards.

You can note the difference in the scale, it's a huge, about a 24 fold difference in scale from some of the other; when you pile them all together and include them with the shrimp fishery. The shrimp fishery accounts for greater than or equal to 90 percent of total removals in all those years.

Then afterwards there is commercial and recreational essentially account for the next highest levels, but they're pretty much drowned out by those shrimp fishery removals. For the fishery independent data, the criteria we use to evaluate the surveys, the time series had to be –

we were looking for something that was at least 17 years long or one generation time for croaker.

No changes in methodology or the gear. The survey had to operate in a place and a time where croaker were present and typically available, and then have a relatively high proportion of positive tows. We reviewed 43 fishery independent surveys, and then we narrowed the ones we were considering down to six. These included the National Marine Fisheries Service Trawl Survey, the SEAMAP Survey, the VIMS Trawl Survey, and then the North Carolina DMF Program 195 Survey; all of which were used in the 2010 assessment.

Two additional surveys, ChesMMAP and NEAMAP were considered for sensitivity runs in the stock synthesis model, but they represented shorter time periods of 2002 to 2014 for ChesMMAP, and 2007 to 2014 for NEAMAP. The indices, the timeframe used in the indices was 1989 to 2014, 1989 was the start year; primarily due to the availability of that was the first year we had complete-removal data.

Just to cover the trends in the various surveys. For the NMFS Trawl Survey, the first 20 years for the croaker abundance was relatively stable, and then you start to see this beginning increasing trend in the early '90s, peaked at 2009 and has declined after that point. The SEAMAP survey, it has more annual variability compared to the NMFS survey, but has also shown a general increasing trend that began at about 2001 and into recent years; although the last two years in SEAMAP have also shown a decline.

The North Carolina DMF, the Program 195 Survey showed a high degree of inter annual variability, but given that this survey catch is primarily young-of-the-year fish that is not uncommon in a young-of-the-year survey. Then the VIMS index, similar to the North Carolina Survey, the VIMS Survey catches a high number of juvenile fish; so it also showed a high degree of inter annual variability. Both the North Carolina and the VIMS surveys actually correlated fairly well with each other. The

ChesMMAP Survey had peak biomass, actually wait, yes it is biomass. Making sure I got the right graph. Peak biomass occurred in 2002 and then in 2005 and 6, but otherwise it has essentially been a long term declining trend of croaker. Then NEAMAP, which was the shortest dataset we had, other than peak years at the beginning of the survey in 2007 and 2012 has been relatively stable with no clear trends.

In conclusion for those fishery independent surveys, what we used in the base run were NMFS and SEAMAP indices, as well as biomass; and then the VIMS and North Carolina Program 195 indices for young-of-the-year relative abundance. ChesMMAP was negatively correlated with the other indices.

It was basically a big conflicting signal, and so it was used in the sensitivity analysis but was not used in the base model. Then NEAMAP it was decided that the dataset or the time period was just still too short to be of much use in the model; but certainly will continue to be considered in future efforts for assessment. All right, and with that I am going to hand it off to Laura.

## **STOCK ASSESSMENT MODELING**

MS. LAURA M. LEE: Okay so we used the stock synthesis model, program rather, to assess Atlantic croaker. This is considered a state-of-the-art model, it is forward projecting. It is very flexible in that it can use all types of data, including length and age data, multiple indices, multiple fisheries.

We implemented a two-sex model and we use it to estimate stock size, fishing mortality, and our reference points. As far as our configuration, we modeled 1989 through 2014, and our unit stock was New Jersey to the east coast of Florida. We had four fleets, which included the commercial, the recreational, commercial scrap landings and the shrimp trawl fishery, which was modeled as a bycatch only fleet.

Then we had the five surveys that Chris described. I also want to mention that we did a

Bayesian prior on steepness of 0.76. This value comes from two sources. One, it was the value we assumed in the last assessment, and that value for that assessment came from a meta-analysis. Joseph Munyandarero on our committee, he also did a life history approach to estimate steepness, and it just happened to come out as that same value of 0.76. We included that in the model as a prior.

This is a summary. I apologize, this is difficult to read. Of all the data that was used in the model, including catch data, abundance indices, length compositions, age-at-length, mean-length-at-age, and discards. The width of the line gives an indication of the length of the time series for each different input from each different source.

Getting into the results, the trend in annual recruitment deviations showed the expected patterns; it was very variable over the time series, but it is decreasing in the very most recent years, and the variance is increasing over time; and that is typical of these models, where the most recent years are the most uncertain.

Spawning stock biomass started at a very low value, and just steadily increased over the time series again, just like recruitment the variability is greatly increasing with time. Those estimates in the terminal year are the most uncertain. Estimates for fishing mortality were variable with a general decreasing trend over the time series. The smallest fishing mortality was observed in 2005 at a value of 0.11. As I said before, we had that prior 0.76 of steepness for the stock recruit relationship, but despite that the estimated steepness value was 0.99 essentially, and you can see that the model is giving a very poor fit to the stock recruit relationship; so the data we have is just not informing that.

We did a number of sensitivity analyses. We looked at recreational discard mortality and the base run. We assumed a value of 15 percent mortality, and we varied that over a range in the sensitivity analyses. We removed one survey at a time in another set of sensitivity analyses. We

looked at different values of steepness. We looked at different assumptions relative to the shrimp trawl bycatch, and we also did the traditional retrospective analysis.

Now for each of these sensitivities I'm going to show you the spawning stock biomass and fishing mortality estimates. This first slide you can see that we varied the level of recreational discard mortality from 8 percent to 18 percent. For SSB fishing mortality and recruitment, which isn't shown here, varying that level had little impact on the model results.

Our next set of sensitivity analyses was to remove one index at a time and not just the index but all the data associated with it, so the biological data associated with it. You can see that there is just a small impact on SSB and fishing mortality. Removing the NMFS and the SEAMAP Survey probably had the biggest impact on recent recruitment, which isn't shown.

But recruitment and SSB in recent years appeared to be most sensitive to which survey data were removed. We looked at a range of steepness values from, I think 0.61 and I just want to note that we did implement this reweighting procedure, and the models wouldn't converge without doing that reweighting procedure when we varied the steepness value.

There is definitely an impact on recruitment and female spawning stock biomass. Assuming the smaller levels of steepness resulted in higher estimates of recruitment, especially in the recent years. Similarly assuming smaller levels of steepness resulted in higher predicted estimates of female spawning stock biomass, especially in the final years of the models; as you can see here.

Predicted fishing mortality tended to be smaller at smaller assumed values of steepness. For shrimp trawl bycatch we had the base levels and then we reduced that level by 10, 20, 30, 40 and 50 percent; to see what the impacts were on the models. Thirty percent is in the ledger, but the

estimates aren't shown because the model couldn't find a solution when we made that assumption.

But you can see there wasn't much impact on the model estimates of SSB and fishing mortality. When we showed the data that 1991 value from trawl bycatch was estimated to be really high, because I think effort and CPUE were really high in that year. We changed that value in two ways, one is we basically took that value out of the model, and that's the new 1991 run.

Then the dent in 1991 run is where we set the 1991 value equal to the median of the other values prior to the implementation of the BRDs. You can see there is not much impact on spawning stock biomass. There is a little bit of impact on fishing mortality in the initial years of the assessment. Finally the retrospective analysis shown here suggested there is no consistent over or under estimation of terminal year values for recruitment; which isn't showing female spawning stock biomass or fishing mortality. Reference for Atlantic croaker is defined in Addendum I to Amendment 1 of the fishery management plan, and they are shown here. The stock synthesis model was used to estimate the reference point values; which are also given here, the threshold and targets for spawning stock biomass in fishing mortality.

The overfished and overfishing definitions are based on the ratio of current F and spawning stock biomass to the respective thresholds. If F in the terminal year over F threshold is greater than 1 then overfishing is occurring. Likewise, if spawning stock biomass in the terminal year over spawning stock biomass threshold is less than 1, then the stock is considered overfished.

This graph shows the relative status over time, and you can see for relative spawning stock biomass we start out very low, below the threshold and increasing very optimistically in the terminal years. As far as the fishing mortality threshold, there were maybe three years where the stock was considered overfishing occurring; but throughout most of the time series and

including the terminal year, overfishing is not occurring.

You can see that below with the actual values of terminal year SSB and F to their respective thresholds. We developed a series of short term and long term research recommendations and ranked them according to priority. Start with the short term recommendations; high priority, increase observer coverage for commercial discards, particularly the shrimp trawl fishery.

Developing a standardized protocol for biological samples from this fishery, this is needed just to characterize what those discards look like; and better inform the model. The next high priority is to describe the coastwide distribution, behavior and movement of croaker by age, length and season, with emphasis on collecting larger, older fish; which is what is currently lacking in the available data.

For short term medium priority, the way I conduct studies of discard mortality for recreational and commercial fisheries. I don't think I mentioned for commercial fisheries any discards we had there we assumed 100 percent mortality, and for recreational those estimates came from meta-analyses. I don't think they were specific to croaker; the estimates that we came up with.

We recommend conducting these studies. In recreational fishery, we really don't have samples of discarded fish, so if we can get ages and lengths from that that would be good for characterizing those recreational discards in the model. Encourage fishery dependent biological sampling with proportional landings representative of the distribution of the fishery, so more samples from states with higher landings; and of course develop associated prototypes.

For the long term high priority, we're suggesting to continue state and multistate fisheries independent surveys throughout the range, and to continue to subsample for lengths and ages. Another thing, this might be written twice, is looking at factors affecting catchability and long

term fishery independent surveys, so that if there are significant factors affecting catchability then we would consider standardizing our indices, using something like a GLM approach based on those significant factors.

Next would be to quantify the effect of BRDs and TEDs implementation in the shrimp trawl fishery, by examining their relative catch reduction rates on Atlantic croaker. Continue to develop estimates of length at maturity and year round reproductive dynamics throughout the species range. Look at historical ichthyoplankton studies for the magnitude of estuarine and coastal spawning. Then we have out medium priority for the long term. One was investigating environmental covariates in stock assessment models, including climate cycles and recruitment of year class strengths, spawning stock biomass, stock distribution, maturity schedules and habitat degradation.

Utilize NMFS ecosystem indicators biannual reports to consider folding indicators into the assessment, and identifying mechanisms for how environmental indicators affect the stock. Encouraging efforts to recover historical landings data, this would be important for us to take that to a start year back in time; and maybe get a better estimate of initial equilibrium catch.

Collect data to develop gear specific fishing effort estimates. Investigate methods to develop historical estimates of effort. Investigate the relation between estuarine nursery areas and their proportional contribution to the biomass. This could eventually end up being used in weighting of the indices in the stock assessment model.

This is the last one. Continuing with the medium priority, develop gear selectivity studies. There is not a lot out there, but it will be great if we could get a better handle on the actual shapes of the selectivity curves for the different gears; and maybe get external parameter estimates to inform our models better.

Conduct studies to measure female reproductive output at size and age and impact on the

assessment models and biomass reference points. Developing sampling programs for state-specific commercial scrap and bait fisheries; in order to monitor the relative importance of croaker in those fisheries.

Currently North Carolina is the only one that does biological sampling of those fisheries, and we're not sure of the importance in other states. That's why we're recommending this. As far as the timing of the next assessment, the Subcommittee and the Technical Committee recommend that the next assessment be completed five years from the completion of this assessment, so 2022.

We also recommend that we not do them at the same time, because it was kind of a burden on the Subcommittee to have to try and complete two assessments at the same time. If you could recommend staggering them next time that would be great, and with that we would be happy to take any questions.

CHAIRMAN ESTES: Thank you, Laura and Chris. I think before we'll do questions maybe, I would like to have Pat talk about the peer review; and then we can get questions all together.

#### **PEER REVIEW PANEL REPORT**

MR. PATRICK A. CAMPFIELD: I am going to provide a summary of the highlights from the peer review of both assessments; starting with croaker. Just real quick on the process, the Stock Assessment Subcommittee and TC developed a new coastwide assessment. Our review panel consists of three reviewers; the Chair and then two technical reviewers.

In combination they had expertise in general population dynamics, stock assessment modeling, statistics, and croaker biology. Their charge or their task was to provide a scientific review, focusing on data inputs, model results, and sensitivities and the overall quality of the assessment. The review workshop was held down in Raleigh, and the Review Panel consisted of Ken Able from Rutgers, Dr. Shannon Cass-



Calay from NMFS Southeast Science Center, and Dr. Mike Wilberg from the University of Maryland. To start with the overall peer review findings, the Panel really reached two conclusions or looked at this at two different levels. They were in full support that the stock assessment provides the best available science; that the stock assessment team turned over every rock in looking for data that the suite of analyses and models that they attempted were very rigorous, in terms of comparisons to other assessments.

However, they found that the stock status determinations were uncertain. Although the biomass is increasing in most of the model runs, they didn't see sort of commensurate increases in the population age and length structure that you often see with a population that's increasing in biomass.

Under the modeling context, they noted that the stock status results were sensitive to some key assumptions; most notably the gear selectivity options for the commercial fishery, as well as the Northeast Science Center trawl survey. While the Panel does not recommend using the absolute estimates of population size, they were fairly comfortable saying that the trends in landings and surveys suggest that the current removals are sustainable.

Then I'll go quickly by each review term of reference and try to hit the highlights. The first term was essentially to evaluate the data that were collected and how they were treated in the assessment. The Panel concluded that all major sources of removals were accounted for and Chris described those in more detail.

The criteria and the process that was used for selecting abundance indices were adequate and correctly applied; leading to selection of a subset of five indices. Data source variances and uncertainties were well described; they were very thorough about that and that the procedures for data weighting meet typical stock assessment standards.

However, the Panel did note that model stability was highly sensitive to how the data sources were weighted; and you might get different model results depending on those weighting factors. The Panel recommendations related to the data, the assessment as Chris and Laura described started in 1989 through 2014.

But the Panel noted that there were of course significant removals of croaker prior to 1989, and they suggested trying to develop historic estimates and evaluate the sensitivities of the initial depletion in the assessment; by going back and looking to see if a longer time series might inform the trends and the overall model results in a different fashion. They are not guaranteeing that that would improve things, but they suggested at least looking at it.

Their second recommendation was to develop CPUE indices from the fishery dependent data. But of the overall concerns this was that the biomass seemed to be increasing from the model results. Landings have been coming down, and the Panel thought that using these fishery dependent CPUE indices may tease apart those contrasting trends.

Their third recommendation was to consider standardizing all of the survey indices. Again, not suggesting that is going to fix things; but it is worth looking at. The fourth recommendation was to develop criteria to better evaluate the reliability of each data source; again for model data weighting purposes. The second term of reference was to evaluate the methods used to develop discard and bycatch estimates. The Panel concluded that the bycatch estimation methods from the shrimp trawl fishery were innovative, and similar and consistent with what the most recent SEDAR assessments have used. They were completely onboard with that and noted it was a major improvement from the last croaker stock assessment.

As I think Chris described the methods, essentially taking observer data from the shrimp trawl fishery and combining that with trends in SEAMAP survey information, as well as sort of

calculating for the change of when bycatch reduction devices went in, again was innovative and a smart way to go about bycatch estimation.

Similarly, the Panel agreed with the approach for estimating discards from the Mid-Atlantic gillnet and trawl fisheries. Term of Reference 3, was to evaluate the methods and models used to estimate population parameters and reference points. The Panel concluded that the stock synthesis catch-at-age model configuration and parameterization were reasonable.

However, they noted alternative configurations that were requested and provided by the assessment team at the review workshop could result in different stock status determinations. The Panel's recommendations again were to look into starting the model prior to 1989, although the time period selected by the assessment promoted model stability, again it reduced the Panel's confidence in the initial depletion starting point.

One of the other recommendations or sort of a set of recommendations within the models was to look at the different selectivity options. I mentioned that in the earlier slide, but essentially compare results between dome shaped selectivity, which was used I think for all but one of the inputs in the assessment; and also to try asymptotic selectivity.

There are other recommendations there more technical that we'll spare for today. The fourth term of reference was to evaluate sensitivity in retrospective analyses performed in the assessment; to look at model stability and consequences of model assumptions. The Panel concluded that the range of sensitivity analyses that was conducted was reasonable; that they took a strong look at sensitivities.

It showed the model was insensitive to recreational discard mortality and index selection, but they did have a recommendation, again for additional sensitivity analyses around commercial fleet selectivity as well as effective sample sizes. You guys covered the

retrospective analyses, but in summary the Panel was not concerned about retrospective patterns.

Term of Reference 5 was to evaluate the methods used to characterize uncertainty in the stock assessment. The assessment team used asymptotic standard errors to characterize uncertainty. A minor recommendation from the Panel was to try likelihood profiles to better understand parameter uncertainties.

Term of Reference 6 was to recommend best estimates of stock biomass abundance and exploitation. The Panel does not recommend using the assessment estimates of absolute biomass abundance and exploitation, due to the model sensitivities that we mentioned; again on selectivity. However, they thought there were several important take homes that could be gleaned from the stock assessment; one that abundance indices are increasing across most of the stock range, and they were confident in that conclusion. That second catch appears to be stable and declining over time. That catch and indices patterns together indicate declining fishing mortality rates. It looks like the croaker stock in recent years is in better shape than the late '80s and early 1990s. Finally that shrimp fishery effort and croaker bycatch appears to be declining. Related to this the Panel recommended reviewing the shrimp bycatch estimates on an annual basis, given their substantial contribution to overall mortality; and to consider adding this to the annual-traffic-light analyses.

Term of Reference 7 was to evaluate the choice of reference points and the methods used to estimate them, and recommend the stock status. Again the Review Panel does not recommend specific absolute values for reference points, due to uncertainty in the scale of biomass and fishing mortality; although stock status cannot be determined reliably, because models with alternative plausible selectivity assumptions resulted in different stock status determinations.

Although we've used MSY based reference points to date for croaker, given some of the uncertainties the Panel recommended making a switch to spawning potential ratio reference points. Finally, the last two terms were to review the research recommendations that the stock assessment team developed; and help them prioritize them.

Both the Review Panel Chair and Chris, as the Assessment Team Chair, we spent a lot of time at the review developing top priorities. I won't repeat all those, but the take-home was that the most important research recommendations were to increase shrimp trawl fishery observer coverage and to increase collection of croaker lengths and ages from the shrimp trawl fishery.

It is fairly obvious, but definitely supported continuing the fishery independent surveys; and again to subsample to take lengths and ages from those surveys. The last term was to recommend timing for the next benchmark assessment, and the Panel agreed with the stock assessment team that the next benchmark should be in five years; continue the traffic-light-analyses, and again consider adding shrimp bycatch estimation to those analyses. Thank you, Mr. Chairman that is all from the Review Panel.

CHAIRMAN ESTES: Do we have questions about the assessment or about the review; Marty?

MR. MARTIN GARY: Well thanks, Chris and Laura and Pat for the update. It was really appreciated. From our little jurisdiction, PRFC, and then a little bit north and south of there where our constituents fish in the lower part of Maryland's Bay and the upper part of Virginia's Bay, croaker have been really, really important.

I have two questions, the first one, and I would like to follow it up if I could. I know it was stated up front that range of the stock is New Jersey south, and it may not have been an emphasis. But is there any indication in any of the data that this species is expanding northward like we see some? I was curious about that.

MR. McDONOUGH: Yes there was some data that showed that you see increasing, particularly in recent years in New York, Massachusetts, Rhode Island, a little bit here and there. It is not a consistent pattern. The most consistent pattern in terms of increase in about the last five years has been seen in New Jersey; but then that's pretty variable. One year they won't get a whole lot, the next year they'll triple to quadruple what they're seeing. But there does seem to be. It's not so much; I wouldn't call it a range expansion or anything like that. But it seems like the core of the distribution has broadened or at least gone north. I shouldn't say broaden, because the distribution in the south has stayed about the same.

MR. GARY: Mr. Chairman, could I have a follow up?

CHAIRMAN ESTES: Yes, sir.

MR. GARY: Then for this next question, it's a two-parter, and I'll put myself in the shoes of one of my for-hire constituents, just to throw it out to you. If anybody was around for the Striped Bass Advisory Board and you heard, like you have on several occasions, the frustration from our for-hire fleet. Part of it is driven by the lack of diversity of what they can fish for.

They're really restricted as you go from the mouth of the Potomac to Potomac and then north to almost striped bass and maybe bluefish and white perch, et cetera. But croaker, weakfish and some other species were available, spot, throughout the '90s a prodigious fishery for the for-hire fleet; really important to them, and your data showed all that as I was watching it.

By the time we got to like '03, '04, '05 that fishery was waning. They are catching some now, but it is a shadow of what it was. I think the first question, to put myself in their shoes, and I can go back and talk to them about what this revealed, is what caused that? It wasn't clear to me, was it environmentally driven? Did the

shrimp bycatch lead to some of that as a combination of factors?

One question is why did we go from that abundance and down? Again, I'm putting myself sort of in my constituent's shoes. Then the other part is I see some of the information suggesting that spawning stock biomass is increasing. Is there room for optimism for these folks to get back close to maybe what we had before? That is somewhat hypothetical, but I thought I would put it out to you.

MR. McDONOUGH: Well I'll start. I think we really don't have a clear picture as to that. The model was showing that biomass increase. We've seen increases in some of the fishery independent surveys. But those commercial and recreational rates have been going down. There are some differences in terms of the age structure between the fishery independent surveys; they tend to such a smaller, younger fish versus what the commercial and recreational fishery gets.

Recruitment has been pretty poor for croaker, and there is a lot we don't know about the recruitment processes along the coast. We know they spawn along the coast, but we don't know how those recruits distribute out and whether or not you're getting high recruit mortalities in some of those northern estuaries.

The Chesapeake has had the dissolved oxygen issues, although I think for the PMRC that is more concern with the center of the bay than back in the rivers, maybe not as much of an issue. But some of the work we did with the traffic-light-analysis, there was some differential between those commercial and recreational and the independent surveys. It pointed more to the difference in the age, you know the relative age structure of what the fishery was targeting versus what some of the surveys were finding. But there really isn't a good direct answer for that.

MR. CAMPFIELD: I would just add to that that we did see corroboration of that in the ChesMAP

index. You see a completely different trend from that index. I think we do recognize that there does appear to be something different going on in the Chesapeake Bay than from what we've seen elsewhere along the coast, and even in the NMFS bottom trawl survey that covers the mouth of the bay.

We do see that and we certainly don't know the mechanisms to explain those differences in trends. But the model is a coastwide model trying to give us a picture of what the coastwide stock unit is doing. The indices that we did use within the modeling framework are different than that and are showing what we hope is more so a picture of the coastwide stock. Until we can get to a more spatially explicit model that is kind of what we're held to and limited to, as far as trying to determine, as far as stock status from the coastwide population or stock unit.

MR. CIMINO: I would just like to add to the discussion. First, thank all of you for the work that you've done. I am a little concerned as well. If you look at the removals without shrimp trawls that is a pretty considerable downward trend in recent years. I put in a plug for NEAMAP and all the other surveys that are still tracking this, because that may be our only answer.

One of the interesting things that I've heard from quite a few fishermen now over the past couple of years, is that they really feel that the overwintering migration, where we used to have croaker and weakfish sitting just offshore, have moved into considerably deeper water. Now it seems that there are some fisheries that are fishing in 400, 500 feet of water for croaker and weakfish in the winter. I find that pretty interesting.

CHAIRMAN ESTES: Chris.

MR. CHRIS BATSAVAGE: Thank you for all the work that the group did on this assessment, as you know it is no small task. From seeing the results and the peer review, it of course showed that biomass has increased quite a bit here in recent years. However, just some of the

comments it doesn't really bear out as far as what people are seeing. If you consider like black sea bass being two times over the target, you know they're hard to get away from in certain areas; not really the case with croaker.

My question is, you know with I guess the uncertainty in the gear selectivities chosen for the model, specifically the commercial fishery where you kind of have a mix of dome shaped selectivity type fishery like the gillnet fishery versus more asymptotic selectivity fisheries such as the ocean trawl, long haul seines, and probably even pound nets to a certain extent. Is there I guess a future direction to maybe split the commercial fleets out by the gear selectivity, you know to maybe get a better idea of what the stock status is?

MS. LEE: Thanks, Chris, I've been thinking about that; because we talked about that a little bit. I think that that would be a good approach moving forward, because of the issues that we had with the selectivity modeling. I didn't completely agree with going to totally logistic for the commercial fishery, but he convinced me that maybe dome shape wasn't appropriate either, so I think that would be the best way to go.

MR. DAVID BUSH: The first question I had originally for Laura was answered when the Peer Review went over it, because I couldn't quite see some of the scales up there. But it looks like in general we can't use the numbers but the trends are there, and the trends are pretty substantial. They are increasing, spawning stock biomass is going up, and one of the biggest impacts could be the shrimp trawl bycatch side of it.

Looking at it for the past few years there, you know that trend has dramatically increased and it's probably the wrong place to do it, but I'm going to try anyway. My division here has worked very well with our fishermen in our state to get to the source of some of this discard issue, and over the past few years have really had huge impacts.

Hopefully that bears out in this. But I do have one question that was brought up by the comments earlier. I know that we check for where these fish traditionally were, and that is where we do our surveys, but have we ever made any efforts to try to see what the extent of their ranges are; because if they are moving out past our surveys, then we're going to get a very skewed perception of what the biomass of the stock really looks like?

MR. McDONOUGH: We have, as far as looking at those broader areas, we have on occasion looked at the NMFS survey; we look primarily from about New York Harbor down to Hatteras. That is what the index is generated from, because that is where 60 to 70 percent plus the positive tows for croaker occur. However, they sample all the way up to the Gulf of Maine in that survey. We have looked at croaker catches outside of the regular strata on occasion.

Those numbers still kind of bear out. You really don't see much. There is variability. Some years they might go up, but then you'll have a couple of down years where you might see them off of Rhode Island and Massachusetts. Then I think Joe's point about the depth distribution is a good one.

The NMFS survey does sample fairly deeply, however they don't sample the really deep strata on a regular basis, like they do, I call it the mid-shore strata, because NEAMAP took over their inshore strata from starting in 2008 and '09. Croaker weren't consistently caught at those deeper stations over the years, and that's another reason why that data hasn't been paid as much attention to. But that is probably something that warrants going back and looking at it, because certainly it is all available.

CHAIRMAN ESTES: Yes, John.

MR. CARMICHAEL: Laura, when I went through it I read the assessment report first, and I didn't get the same sense of it as I got once I read the review. I didn't get the sense of doubt that the reviewers cast upon it from the assessment

report, and I was wondering if the reviewer's opinions took the Technical Committee somewhat by surprise; or were they anticipating some of that?

MS. LEE: That's a good question. I think we were taken more by surprise than not. I think we were probably going in most worried about the shrimp trawl discards, just because that was such a concern at the last assessment; and we spent so much time trying to come up with really good estimates. The issues that they came up with were a little unexpected, but they weren't wrong in what they brought up.

MR. CARMICHAEL: Follow up if I could. I noticed one thing and I think it is important to the SSB trend, because in the introduction of the overview executive summary from the reviewers, they talk about the selectivity issue that Chris raised and the problems with, I think we're all well aware when you have a lot of dome shaped selectivities, you're older age fish can kind of do whatever they wish to do.

They mentioned the chance or the possibility that the increased SSB could be cryptic, and just be driven by the dome shape selectivity so the fish can get out past those selectivities and just continue to grow. I thought that raised some concern, because then they say later, well it seems like the trends are good, and fishing mortality is low, and spawning stock biomass is increasing.

But I have to go back and say well, if you tell me spawning stock biomass is increasing in the base runs, but you told me earlier that maybe the increase in the older fish was cryptic; then that might shed a little bit of uncertainty onto whether or not spawning stock biomass is really increasing that much.

But especially because they also in there mention that the length-in-age comps didn't really support the increasing population, they supported more of a static or potentially declining population. I kind of was disappointed

that they didn't delve into that more in the other terms of reference.

Because this chance that there is some cryptic population out there is really pretty critical, in terms of interpreting these results and what you might do, and how you view what is maybe increasing or is it the landings aren't there and the landings aren't increasing as much? Maybe there is something else at work here.

CHAIRMAN ESTES: What is the pleasure of the Board? It seems that we have an assessment that has quite a bit of data, folks worked really hard on it; yet the review says we really can't use it for management purposes. What is the pleasure of the Board?

MR. BOYLES: First of all before we answer the question. You know for Jeff, Kristen, Megan, Michael, Pat, all the staff, Chris, Laura, and everybody who has worked on this, thank you. I know it is disappointing when we find ourselves kind of scratching our head to try to answer Jim's question, Chairman Estes' question of where do we go from here? But I would like to say on behalf of the Board thank you. I know it was a long slog. We've got data limitations. I'm grateful, and I think I'll go out on a limb and say I think the Board is grateful for your effort.

Job well done, and we've got challenges before us and we'll make things better next time, but thank you. Mr. Chairman, at the risk of sounding really, really parochial, a number of us, I included, have a flight to catch and there is a lot to think about here; not only with this one, but with the spot assessment as well. I would like a little bit of time to think about this. If you want a motion to accept this, accept the assessment and the peer review and give us a little bit of time to chew on it. I think this probably warrants for some further discussion, maybe at our next meeting.

CHAIRMAN ESTES: Agreed, so how do we procedurally do that?

EXECUTIVE DIRECTOR BEAL: Well usually the peer reviews are accepted for management, and since the assessment wasn't upheld by the peer review, I don't think there is any necessary motion by the Board that has to accept the peer review results; or anything along those lines for management use, since that won't be the plan. I think if there is comfort around the table of waiting until the August meeting, allow folks to sleep on this for a few months and think about the next steps forward. That is the Board's prerogative for sure.

CHAIRMAN ESTES: Yes, Joe.

MR. CIMINO: Very quickly, Mr. Chair. I don't want Laura to have to leave without some sort of promise that we can decouple these two assessments. I think we'll hear a lot more about the challenges with spot. I would be happy to do this at the next meeting, but I probably think it's logical that spot could be a more delayed; and maybe give croaker another shot in the near future.

MR. CARMICHAEL: Laura, I think to that I would say, given the issues that they raised with the data and such, I don't think a year prediction for when you do this next; in five years or what have you. But when do you guys think you can actually make some progress on the real issues? You're not going to resolve the past shrimp trawl bycatch.

The numbers we have are the numbers we have, and they said that you used the accepted methods and appropriate methods, so the issue is with the data. Well you can't go back in time to fix the data, so I think it would be a better use of the Technical Committee's time to think about how you deal with that limitation within the tools we have to deal with making good predictions for croaker.

Maybe in the near term you guys could look at something like F max or some yield per recruit type approach for this, since there is not stock recruitment relationship that is at all discernible. I think dig into the selectivity issues, as was

mentioned, and maybe try to do some research to really determine what the selectivity is; and not have to estimate so many selectivities in this model.

Then maybe you can come up with a croaker model that will be informative and acceptable to those guys. It is a lot of work to go down this path, and I hate to see folks go do that when you can't resolve the issues that are standing in the way of its acceptance now.

CHAIRMAN ESTES: Okay, following Robert's suggestion. Oops, hang on a minute.

MS. KERNS: I think that's helpful, John, at least for the TC to look into some information on the path forward. I think one of the things that might be helpful for the Board, and if you guys disagree with me that is perfectly acceptable, but it is to update the traffic-light-approach with the last two years of data; because the assessment only went through 2014.

Have the TC work on that between now and the August meeting, and present the updated traffic light at the August meeting. Especially I think that there may be some hesitation with spot, and I think it would be good for the Board to see the information with the new years for spot on that; because we had seen some declining trends earlier. They can at least review that. We can think long term or even medium term for some of those suggestions of which John just brought up as well. There are also suggestions from the Peer Review Panel, I think from both assessments or just for the croaker assessment that we may want to consider adding the shrimp trawl discard information into the traffic-light-approach. I don't think we necessarily need to do that for the August meeting, but that is something that the TC could think about if there is some sort of possible way to do that or not. Those are some things that could happen between now and August, and then some things could happen between now and question mark end date.

CHAIRMAN ESTES: In the meantime I think we will postpone the spot assessment until our August meeting, as I think was suggested. If that is all right with everybody, does anybody have a problem with that? Okay it doesn't look like anybody has a problem with that.

#### **SPANISH MACKEREL ADDENDUM I**

CHAIRMAN ESTES: I think we will go to what is our last agenda item, it is Spanish mackerel Addendum I, I believe that Michelle would like to talk to us about.

DR. DUVAL: I will be very brief. If you all recall, Addendum I to the Spanish mackerel fishery management plan for the Commission allowed for seasonal exemption from the 12 inch minimum size limit, specifically for pound nets and only for the months of July through September.

The past couple years, so North Carolina is the only state that has utilized this particular exemption, and the past several years we've provided the Board with a report; generally at this meeting, with regards to the previous year's performance of the fishery. I had spoken to the Chairman previously about this.

We had a little bit of trouble trying to get that report together within that timeframe. This year we do have it together now. It should be finalized tomorrow, and so Mr. Chairman, I was simply going to ask and I believe we have done this in the past, if perhaps the Board will be amendable to reviewing that via an e-mail type of review.

I will put forward that North Carolina is indeed interested in continuing that exemption for this upcoming 2017 fishing year, so if I can provide that report to staff first thing Monday, and then they can get it out to the Board; that would be my recommendation.

CHAIRMAN ESTES: Is that acceptable to the Board that we should get it sometime in the next week or so? Okay, thank you, Michelle.

#### **ADJOURNMENT**

CHAIRMAN ESTES: Is there any other business to come before the Board today? Seeing nobody rushing up front here, I think that we are adjourned.

(Whereupon the meeting was adjourned at 2:53 o'clock p.m. on May 11, 2017.)