SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Town and Country Inn
Charleston, SC

April 25-27, 2017

SUMMARY MINUTES

Scientific and Statistical Committee Members:

Dr. Marcel Reichert
Dr. Robert Ahrens
Dr. Carolyn Belcher
Dr. Jeffrey Buckel
Dr. Churchill Grimes
Anne Lange
Dr. Amy Schueller
Dr. Alexei Sharov
Dr. George Sedberry
Dr. Luiz Barbieri
Dr. John Boreman Jr.
Dr. Scott Crosson
Dr. Eric Johnson
Laura Lee
Dr. Fred Serchuk
Dr. Tracy Yandle

Council Members:

Dr. Michelle Duval
Mark Brown
Dr. Roy Crabtree
Zack Bowen
Chris Conklin
Ben Hartig

Council Staff:

Gregg Waugh
Myra Brouwer
Dr. Chip Collier
John Hadley
Cameron Rhodes
Julia Byrd
John Carmichael
Kimberly Cole
Dr. Mike Errigo
Dr. Kari MacLauchlin
Amber Von Harten

Observers/Participants:

Rusty Hudson
Dr. Erik Williams
Shepard Grimes
Dr. Mike Larkin
Dr. Kyle Shertzer
Dr. Joseph Ballenger

Additional Observers/Participants attached.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened at the Town and Country Inn, Charleston, South Carolina, April 25, 2017, and was called to order at 1:30 o'clock p.m. by Chairman Marcel Reichert.

DR. REICHERT: Welcome, everyone, to the spring SSC meeting. I also want to welcome everyone else in the room, in particular Dr. Duval, our Council Chair, and Ben Hartig, our council liaison. There are some other council members, Mark Brown and Zack Bowen, and, Shep Grimes, thanks for joining us again.

Before we get started, I want to mention that we have a full agenda, and Mike sent us a revision of the overview last week, just in case you missed that, and so let's do a quick around the table for voice recognition, and I also want to remind everyone that the meeting is broadcast via webinar and recorded. Fred, let's start on that side of the table.

1. INTRODUCTION

DR. SERCHUK: Fred Serchuk, SSC.

DR. BELCHER: Carolyn Belcher, Georgia Department of Natural Resources.

DR. SHAROV: Alexei Sharov, Maryland Department of Natural Resources.

DR. YANDLE: Tracy Yandle, Emory University.

DR. BOREMAN: John Boreman, North Carolina State University.

DR. BARBIERI: Luiz Barbieri, Florida Fish and Wildlife.

DR. CROSSON: Scott Crosson, NOAA Southeast Fisheries Science Center.

DR. SEDBERRY: George Sedberry, NOAA Office of National Marine Sanctuaries and Vice Chair.

DR. REICHERT: Marcel Reichert, South Carolina Department of Natural Resources, Chair.

DR. ERRIGO: Mike Errigo, council staff.

DR. BUCKEL: Jeff Buckel, North Carolina State University.

DR. GRIMES: Churchill Grimes, SSC.

MS. LANGE: Anne Lange, SSC.

DR. SCHUELLER: Amy Schueller, NOAA Southeast Fisheries Science Center.

DR. REICHERT: Thank you. I would like to review and approve the agenda. Does anyone have any comments or additions to the agenda? Seeing none, the agenda stands approved. As I

mentioned in an email last week, I asked every one of you to pay particular attention to certain agenda items, and I want to remind those assignments at the beginning of each agenda item, and I hope that you will help me with making notes and writing the SSC reports on those topics.

I would also like to spend a little time after each agenda item to go over the notes and the recommendations, and, before we adjourn, at the end of the SSC meeting, I hope we can go through the draft report, so we have at least a rough draft of the report ready before we adjourn on Thursday.

Unless anyone has any questions or comments, I would like to move on to the approval of the minutes of the October 2016 meeting. Shep provided a minor comment that we will include, a minor correction. Does anyone else have any comments on the minutes or additions? Seeing none, the minutes stand approved. We also have Attachment 2, the minutes of the November 2016 webinar meeting. That was on the spiny lobster, if you will remember, and are there any comments or corrections to those minutes? Seeing none, the minutes stand approved. Before we go to the first public comment, it's my understanding that Amber had an announcement or a question to the committee.

MS. VON HARTEN: Good afternoon, everyone. My name is Amber Von Harten, and I am the Citizen Science Program Manager for the council, and I just wanted to put a pitch out there to the SSC to consider applying to our new Citizen Science Advisory Panel. If you're not familiar with what the council has been working on over the last year-and-a-half, we're trying to develop a citizen science program. Hopefully you all are familiar with that, and I won't go into details of that, but the next step to building the program is to develop some of the program infrastructure, and so the council gave guidance that we need to form an advisory panel, and so that's our next step that we're working on right now. The application deadline is tomorrow, and so time is of the essence, if you are interested.

The way this AP will work is different than our fishery-related APs. This is going to be more of a pool, kind of like the SEDAR Pool, and so it will be a pool of individuals that could be tapped in the future to serve on action teams, which will be focusing on working on program development in five different areas, and those areas are volunteers, and so working with fishermen and those that would be involved in the citizen science projects under the program.

Then there is data management, how to design data standards and policies for the programs, to support projects. Then there is projects and topics management, and so how the council can identify topics that they're interested in to look at citizen science projects and also how to manage those projects. Then finance, and so how to support not just the program, but also projects. Then there is communication, outreach, and education of the program and the projects that fall under the program.

I know lots of you guys have expertise in some of those areas, and I highly encourage you to apply. The time commitment is only two webinars per month. There is not going to be any in-person meetings, and the way this will work is the action teams would be working in between council meetings, and meeting twice a month, and there would be a chair of each action team that would help coordinate some of the activities.

There is terms of reference for each action team that will be developed, to kind of give you your charge of what you are going to be working on, and then the very last webinar in between council

meetings would be a plenary of all the chairs of the action teams that would serve the purpose of informing everybody about what each action team and the policy recommendations that they will be bringing before the council.

Then the council's Citizen Science Committee would be reviewing each of the action teams' recommendations, and so I would really appreciate it if some of you all would apply. Even if you apply to the AP, it doesn't necessarily mean that you would be tapped immediately to serve on an action team, but it's just a pool that we could pull from as we need different types of expertise over the next year or so to serve on those action teams. If you're interested, please see me. There is an online application that is available on our citizen science page on the website, as well as the news release that went out about a week ago, and so you can get in touch with me or see John Carmichael if you have any questions. Thank you.

DR. REICHERT: Thanks, Amber, and we'll have a further update on Agenda Item 18 off of our agenda. With that, we will move to public comment. You may remember that we changed our public comment procedure a little bit, where we have now public comment at the beginning and the end of our meeting, but also at every agenda item, usually after the presentation, but before we start our discussions, and so I want to ask if anyone from the public has any comments at this point. Rusty.

2. PUBLIC COMMENT

MR. HUDSON: Thank you, Mr. Chairman and SSC. I'm Rusty Hudson, helping the Southeastern Fisheries Association, East Coast Fisheries Section. We provided a written comment in a timely way, and I hope that everybody had a chance to take a look at the two pages. We have supplied comment with regard to most, but not all, of the agenda items. Instead of belaboring the point with a long comment today, I would rather make comment after each discussion point, after the presentations and before the SSC discussion, and so thank you very much.

3. 2016-2017 LANDINGS, ACLS, AND ABCS

DR. REICHERT: Thank you, Rusty. Anyone else? Seeing none, let's move to Agenda Item 3, Landings. There will be a presentation. These are Attachment 3 and 4 of the briefing book, and our action items are to review and comment, with attention towards ABC recommendation updates.

Emphasis should be placed on Level 4 and 5 stocks, which have concerning landings trends as compared to their ABC values. As a reminder, Level 4 and 5 stocks are the level stocks from our ABC control rule, and they are the stocks where the ABC was derived from either the ORCS or the decision tree. Landings are all we have for these stocks, and so that's why that's important. I am also going to recommend to -- There is another action item to consider the assessment schedule and research plan implications, but, since we are going to talk about that in our next agenda item, I suggest that we hold off discussion to that next agenda item. With that, I think Mike is on the webinar.

DR. M. LARKIN: I am just talking about preliminary 2016 landings now. At your next meeting, I can provide more detail, and so just keep that in mind. I don't expect these to change drastically. My best guess would be 5 percent or less, but anyway, just keep in mind that these are preliminary.

First, I will talk about the commercial landings. These were summarized in April of 2017, and, again, these are the 2016 landings, and they are preliminary. They come from the in-season monitoring of the dealer-reported landings. Final 2016 landings are expected in July of 2017. Landings are compiled and provided by the Southeast Fisheries Science Center, and the landings are assigned by fishery-reported catch area rather than dealer location.

I am just going to highlight ones that have exceeded their ACL, and so you guys have seen this before, but I will repeat it real quick. The first column is the stock. Then the next one is, in this case, the commercial landings, the 2016 commercial landings. The next column is the 2016 ACL, and then the next column is the units for the ACL and any percent of the ACL. Then the last column there is the closure date.

I am just going to go through, and you can see that blueline tilefish was about 15 percent over the ACL. It closed on August 30. The next one is the cobia stock from New York to Georgia. It did not exceed the ACL, but we closed that on December 6. Then, if you go down to the golden tilefish, and you see these obviously highlighted in yellow, the ones that exceeded, but golden tilefish longline was 1 percent over. That closed on March 15.

Then gray triggerfish, January to June, was expected to go over, but that one was closed on June 30. You can see that one is actually 10 percent below the ACL. We closed it based on predictions, but it ended up staying below the ACL. The gray triggerfish for July through December, that one closed on December 16, and that one closed right at the ACL. You can see that 100 percent there.

Then if go down to the jacks, you can see the jacks was 9 percent over the ACL. We closed them on August 9. Then the next highlighted one is snowy grouper. That was 17 percent over, and you see that one closed on June 14. I skipped over it, but you guys are probably familiar with it, but the red snapper, both commercial and recreational, was closed all season in 2016.

Then the vermilion was closed on March 29, and that one was at just about 100 percent of the ACL, the January through June 30 fishing season, and then the July through December 31 vermilion snapper fishing season was 99 percent. It stayed below the ACL, but that one was closed on December 16. These are the ones that had the fishing year different than the calendar year. For both greater amberjack and black sea bass, in both cases, these were not closed, and they were below the ACL. King mackerel and Spanish mackerel, again, both of them were below the ACL.

Now I will move on to the recreational landings, and so this would be the 2016 preliminary recreational landings. They were summarized in April of 2017. Again, they are preliminary at this time. The MRFSS and MRIP landings are available from -- OST is the Office of Science and Technology. That comes about forty-five days or more after the end of a wave, and then the Southeast Science Center takes that data and they recalculate the pounds, and they compile the MRIP. They also combine it with the headboat landings, but they have a different estimate for estimating the waves.

It first comes from the Office of Science and Technology, and then it goes to the Science Center. The Science Center then provides it to SERO. Roughly, it seems to be about fifteen days later, after they get it from the Office of Science and Technology, and then the landings are summarized using MRIP or MRFSS. It depends how the ACL was defined. Then the landings estimates are updated by NMFS SERO to be consistent with the ACL monitoring.

In some stocks, we call it post-stratification. For some stocks, we don't include Monroe County in the Gulf. We make sure that it counts towards the -- For example, greater amberjack, in the MRIP landings from Monroe County, they're assigned to the South Atlantic. It has been assessed and determined that most of those landings come from the South Atlantic side of Monroe County anyway, and so, anyway, a certain number of species, we make sure that we follow what we've done in the assessment and make sure those Monroe County MRIP landings or MRFSS are assigned to the South Atlantic region.

This is, again, the same format. I did go through and highlight the ones that exceeded, and so blueline line is 97 percent over the ACL. That closed on September 1. Cobia, New York to Georgia, that one was actually 117 percent over the ACL. It was closed on June 20. Keep in mind some of these don't have -- These are federal closures, and so some of these don't have corresponding state closures, like the cobia from New York to Georgia.

It closed on June 20 in federal waters, but some of the South Atlantic states stayed open, and cobia is one where the majority of the landings come from state waters anyway. Some of the states took different measures other than closures, like changing the size limit or reducing the bag limit, but they did not close, and so that June 20 closure is just the federal closure there.

Then golden tilefish, that one, keep in mind, it's a very small ACL. It's in numbers of fish, but that one did go significantly over. You see that we closed that on August 27. Then hogfish was 37 percent over, and that one was closed on November 30. The porgies were 128 percent, and that one closed on September 30. Snowy grouper is another one of those rarely-intercepted species, and it also has a small ACL. Also, keep in mind that the snowy grouper ACL is in numbers, but that one was 115 percent over the ACL, but that one closed on September 1.

Then king mackerel and Spanish mackerel, these are ones that have different fishing years than the calendar year, and I apologize that yellowtail snapper also recently fell into this category. It's not in this presentation, but that one is only about 15 percent of the ACL, for yellowtail snapper in the South Atlantic. In this case, the ones you see on the screen here, king mackerel and Spanish mackerel, are also well below their ACL in the current data that we have for the 2015/2016 fishing year.

Greater amberjack was one that snuck up on us. It's got a May 1 through February 28, and that one, by the time we got the Wave 1, which is January and February of 2016, we had kind of a higher than usual landings, about 90,000 pounds, and it bumped it over the ACL, but we got those landings after February 28, and so the season was already closed, but you see greater amberjack was 3 percent over the ACL, but it didn't have a closure date, because we got the landings after the season was already closed. Then black sea bass was only about 36 percent of the ACL.

Now I am showing you what stocks exceeded their ABC and their OFL, and so there is only four of them. Really, to compare to the ABC and the OFL, you have to combine both the commercial

and the recreational landings. Here, I have those four stocks, and I have the commercial landings in one column and the recreational landings in another column. Then I add them up in the total column and then compare them to the ABC.

You can see, for example, blueline tilefish was 22 percent over the ABC. Then I also compared it to the OFL, and so you can see, when you take those landings and compare them to the OFL for blueline tilefish, you are 20 percent over the OFL as well. For these four stocks, all of the stocks that exceeded their ABC also exceeded their OFL, except for the porgies complex. They don't have an OFL, but, anyway, you can see blueline tilefish, snowy grouper, Atlantic cobia, and the porgies complex exceeded both their ABC and their OFL, except for porgies, because they don't have an OFL.

That is really it. My next slide is just questions, and so I would be happy to answer any questions, and I also want to point out that I will have more final data for your next meeting, which I believe is October, and so I can do it again with more inclusive landings, but this is the best we have available right now.

DR. REICHERT: Thanks, Mike. I have a quick question. Can you remind me, if you know, of the accountability measures for blueline and the snowy grouper? I know blueline is undergoing a stock assessment at the moment.

DR. M. LARKIN: I am actually looking that up right now. I think they're in-season, meaning that we monitor it in-season, but I know also there is some changing -- The blueline changing of the ACL, but, if you can stand-by, I can get by and confirm that. So you're saying for blueline and snowy grouper, what are their AMs, whether they're in-season or not, right? I can find that out.

DR. REICHERT: I was just wondering. Thanks. Anyone else? Any questions?

DR. SERCHUK: I had a question about this last graph here. I am surprised that golden tilefish is not included there. Is there any reason? Based on the information that was presented in the previous tables, it looked like that was a species that also exceeded their ABC and OFL.

DR. M. LARKIN: I think that one had a really high both ABC and OFL, and so even though you have a stock that exceeds its ACL both commercially and recreationally, if they have a very high ABC and an OFL, then they would have never exceeded it, but that could have been a mistake. You're saying golden tilefish, and I can take a look at that.

DR. SERCHUK: If you look at the first table of the 2016, you see that there was two categories of golden tilefish, and they were both at about 100 percent. Then, if you look at the recreational landings, you see that they were 405 percent of the ACL. I am just wondering if --

DR. M. LARKIN: True, but just keep in mind that the recreational ACL is a lot lower, I think. Let me confirm that. I think it is. Hold on. I am flipping through my pages.

DR. ERRIGO: If you're looking at golden tilefish, the recreational is in numbers, and I think it's only -- It's less than 10 percent, I think.

DR. M. LARKIN: Of the stock, yes. I can confirm that, but I believe, when I did that math, it was -- Even though they both went over, they were at -- Even though the recreational went way over, but you're looking at the recreational ACL is so much lower. Even though they went over, they weren't high enough to exceed the ABC.

DR. SERCHUK: The two categories from the commercial landings, one is 97 percent. The next one, which has a larger one, is 101 percent, and I am just thinking that they're about 100 percent combined. Then you have the recreational, which is still lower, but it's still higher than 100 percent. If you could just check it, that's all. Thank you.

DR. M. LARKIN: Okay. I think it's because the -- Hopefully there was a large enough buffer there between the ABC and the OFL, but I will check that. I will look into that and get back to you.

DR. REICHERT: Any other questions?

DR. BUCKEL: Mike, I think we asked this last time, and I can't remember the answer. The landings, that contains the discards?

DR. M. LARKIN: They don't. These are just the landings, and so it does not include discards.

DR. BUCKEL: But the ABC does? Are you discounting that somehow, based on historic --

DR. M. LARKIN: The ABC is landings as well. The only one that I can think of that includes the discards is the red snapper has its own ABC, which includes also -- We incorporate the discards, but both these landings and the ABC and the OFL -- Those are just landings, and so they're not including discards.

DR. BUCKEL: Thanks.

DR. REICHERT: Anyone else? Any concerns relative to our current ABC recommendations?

DR. ERRIGO: Just to let you know that the next attachment is simply the landings trends by sector for each of the stocks and the complexes up to 2015. Then these are the 2016 landings, in case you wanted -- If you were talking about these stocks and needed to look any further into any of the stocks, those are the landings trends from the Science Center for commercial and recreational, and so that's what the next attachment is, if you need any other information.

DR. COLLIER: Fred, in response to your question about the golden tilefish not exceeding their ABC, when the last stock assessment was done for golden tilefish, there was a weird recruitment blip, and so the council was a little bit conservative in their setting of the ACL compared to the ABC, and so I believe there's a buffer of about 30,000 pounds between the ACL and the ABC, and that's why it's not exceeding the ABC for golden tilefish.

DR. REICHERT: That is in addition then to the buffer between the ABC and the ACL.

DR. ERRIGO: The OFL.

DR. COLLIER: Yes, there is an additional buffer between the OFL and the ABC.

DR. REICHERT: Yes. Sorry. Anyone else? Seeing none, Mike, thank you for this update. It's always good to get the latest landings, and we look forward to your next report, and so thanks a lot.

DR. M. LARKIN: Okay. Thank you.

4. SEDAR ACTIVITIES

DR. REICHERT: Our next agenda item is SEDAR Activities, and we have a number of activities, and we will go through the action items item-by-item. What I would like to do is provide an opportunity for public comment at this point rather than at every single sub-item on the agenda. I am asking if anyone is interested in providing a comment. Rusty.

MR. HUDSON: Thank you. SEDAR projects, we recognize the importance of the MRIP recalibration using the 2015 to 2017 data, as it relates to the revision of the red snapper, red grouper, blueline tilefish, and black sea bass landings, discards, and, ultimately, stock assessment results. We look forward to the revision of the assessments as the recalibration becomes available next year.

Because the MRIP revisions are not going to take place in 2017, we hope you concur with the council that a golden tilefish standard assessment should take its place later this year, for the reasons outlined below. We also suggest that the fishing industry representatives are more actively involved in future research track SEDAR assessments, and I know that's the next agenda item, but I'm just putting it out there, as the SEDAR 25 golden tilefish update is an example of where that assessment could have benefited from industry involvement and input from fishing participants. Thank you.

DR. REICHERT: Thank you, Rusty. The first point is let me remind you of the attachments, and it's Attachments 5 through 9 for this agenda item, and the first item on this overview is black grouper. It is my understanding that there were some issues with the data, and, as the overview indicated, we will have a little more detail on that, and I'm not sure if -- Luiz, are you providing that information or, John, can you provide us an update?

MS. BYRD: I can give a quick update, and then Luiz may be able to provide more detail. Black grouper was a benchmark assessment. Florida was the lead analytical team. It involved both Gulf and South Atlantic folks. The data workshop was held in March, and there were a number of data issues that came up.

I think one of the data issues that caused the largest problems were the ratios that were used to divide the black grouper and gag grouper commercial landings and the uncertainty in those ratios, and so, at this point, due to the variety of data issues, I think the State of Florida has requested to not go forward and halt the assessment. At this point, what's going to happen is the data workshop report, kind of summarizing everything to date, will be written up, and I think that's going to be finalized in about a month or so, but that's kind of where things stand, and I don't know if, Luiz or John, if you want to add more details.

DR. BARBIERI: Not much more than what Julia just presented. It's really one of those things where, when we looked at the review -- First of all, in discussions with the Science Center, we realized that there were some issues. In communications with the Science Center in preparation of the data, in preparation for the data workshop, we identified a number of issues with those ratios that raised eyebrows, and then we decided to continue and go forward with the data workshop, because that would be the best opportunity, we felt, to have the data fully explored and any issues that would have to be identified and properly documented, that that would happen right there and then.

Sure enough, at that workshop, the team felt that the data just wasn't really supportive of a full-blown, quantitative, model-based assessment, and so I have written a letter to the SEDAR Steering Committee, and I will be giving them a brief overview of this issue as well, in requesting that we actually stop this project and do not continue with the quantitative assessment of black grouper.

DR. REICHERT: Thank you, Luiz. Just as a reminder, Carolyn Belcher and Rob Ahrens were the SSC reps for the data workshop and myself and Alexei for the assessment workshop and Fred and Amy for the review workshop, which now means that those tasks will drop, and so what's going to happen with black grouper, is my question.

MR. CARMICHAEL: This request or recommendation will go to the Steering Committee. They meet next Friday, and they will discuss it and discuss, I think at that point with feedback from Luiz, what the next steps are and where black grouper goes from here.

DR. REICHERT: Thank you.

DR. BARBIERI: One thing that I forgot to mention is that the analytical team is putting together a little working paper, a SEDAR working paper, that actually goes into more detail about what the issues were, so we can memorialize really what those issues were for any future attempts to assess black grouper. The data workshop report, as Julia mentioned, is going to be abbreviated, but, there, they are trying to put something as well that explains what that issues were.

DR. REICHERT: Thank you, Luiz. Any other questions or concerns?

DR. SERCHUK: I have no concerns with the decision to halt the progress because of the issues that were identified, but I am concerned that we try to move ahead, and I realize that this is not completely a black box. Before we move ahead, we should have some idea, in most cases, whether we have a high likelihood of having sufficient data to go through the process.

The process is an extended process, and it involves a lot of people and a lot of commitments, and I realize that we can never have full certainty about the inputs, but I am just wondering if there are lessons to be learned from black grouper that might be applicable to other stocks? It seems to me that we should have some indication, before we even plan an assessment, whether there is better than a 50 percent likelihood of succeeding in developing the assessment, and I know I'm speaking to the choir here, but we as an SSC put a lot of time and effort in terms of trying to participate in the process and make commitments, and it seems to me that, if there are stumbling blocks, we ought to make sure that they're stumbling blocks of a type that we can minimize their occurrence in the future, and that's all. Thank you.

DR. BELCHER: What was interesting, from my perspective, is we made a lot of forward progress with life history and indices and things like that, and it came down to the commercial and this issue of the misidentification. What I kind of got wrapped around the axle with was the fact that that percentage, or that ratio, that was gag grouper to black grouper, that value had been assessed and deemed usable for the gag, and so it was already in play and that number had been used.

The two are married together, and so I don't understand how you can have confidence in one side of a binomial distribution and no confidence in the other side of a binomial distribution, and it was three days that that thing kept -- I mean, we would keep coming back to plenary, and there was never any further discussion. We would go back, and we kept checking the boxes on the other three groups as we could, but, for me, that was just the hardest thing that I couldn't get through my head, is how you made that decision for gag and we're happy with that percentage, but now, all of a sudden, it's no good on the other side of it.

How you learn from that, I don't know, other than the fact that obviously, in this situation, those two assessments are kind of married. You can't make a decision for one without it impacting the other, and so I don't know if that means that you have to look at them in tandem or not, but, like I said, that was a huge frustration.

DR. SHAROV: I have just a clarification question. Should I take it that the assessment workshop is definitely off the books, the one that was scheduled at the end of June, for planning purposes? That is not going to happen?

DR. REICHERT: That is my understanding, yes.

MR. CARMICHAEL: The Steering Committee will talk about it next week, but I would be extremely surprised to see that group attempt to override the recommendation of the lead assessment agency. We've been in situations like this in the past, and it's more a situation of so what do we do with this assessment next and not that they're in the position to override this decision, and so I think that's the case, but obviously the committee hasn't talked about it and made it official.

DR. BARBIERI: I just want to make a couple of points, because I think Fred brought up some good points. I think there are lessons learned here for us to get to. However, it's difficult to look in detail, and it isn't until fairly close to those workshops that the folks start preparing all the data for the assessment and start revisiting some of those issues that had been previously discussed for other assessments and get to the point where they can evaluate that, well, now we are finding something that we didn't expect would be there.

I get your point, and I just wonder how our SEDAR process, given the lack of, I guess, as much manpower as we wish we could have in our region, be able to evaluate all of those things way in advance. I mean, we have had -- SEDAR 3 was one that I remember that I was involved, and there have been several other ones where, at the data workshop, the idea was to look at what was there and see if this was enough. The main purpose of the data workshop is to identify what kind of modeling approaches, assessment modeling approaches, can be pursued and whether the data is sufficient and appropriate to support a quantitative stock assessment. In that case, and in those cases, it didn't, and this one it didn't either.

To Carolyn's point, I think it does raise the issue with gag. My discussions with Steve Turner with the Center are that, yes, we're going to have to be fairly careful in going forward and looking at gag, because a lot of the things that were there seem to suggest uncertainties that had not been identified earlier.

Lastly, if you go back into the review workshop report from the last black grouper assessment and you look at the CIE reports and the actual SEDAR review reports, there are a number of comments from the reviewers that had already pointed to some of these high-level uncertainties that brought doubt to our ability to conduct a quantitative assessment, and so it's too bad that we got to the point that we had to go forward with a data workshop, but I think it would be even worse to go and have an assessment and a review and incur even additional expenses and time when, most likely, it wouldn't pass the red-face test.

DR. REICHERT: I agree with the last point. That was actually a point that I was going to make, in terms of it's better to recognize that at the data workshop level than having this go forward and having an issue with the review, either CIE or SSC.

DR. SCHUELLER: I guess my thought is this sounds like it's tied with gag grouper, but it's also tied with the last black grouper assessment, and so we're managing based on something that we have species ID concerns over, is what it sounds like. I don't know the details, but it's not just this particular assessment. It's this assessment, the last assessment, and the gag assessment, and I guess my question is what came up new this time that we weren't aware of last time? I mean, we didn't really get any information in this document to say anything specific, and so what specifically came up new this time, and has any work been done to address the concerns from the last CIE review to address those topics?

DR. BARBIERI: Because the data workshop report and the working paper are not ready yet, and we haven't even given the presentation to the SEDAR Steering Committee, I don't really know the details that the analytical team is preparing, in terms of the actual more technical issues. I know that they are working with the Center, with a number of data people, under Steve Turner, to prepare something that is structured specifically -- When I called John, John's reaction was let's put together one of those working papers, so that, later, we have that in writing and we can look at what the implications are for other species and for black grouper into the future.

It is unfortunate, but my perception of it, with this and many other species, is that's how science works. Something that we didn't know two years ago, we do now. We change course, because it's cumulative, another link to that chain, and what to do from there is going to be a little bit of a puzzle of how we handle not just black grouper, but gag and how do we handle this catch advice going forward with this many species ID issues. That's going to be complicated.

DR. SERCHUK: A number of problems arise during the time period when the SSC does not meet, and this was a case where an issue came up in March, after the workshop, and those participants at the workshop knew, at the end of the workshop, that we're not going forward with --

DR. BELCHER: Just a clarification. When we left, we still didn't know what was happening with commercial, and so there was actually a meeting, a webinar meeting, two weeks ago to discuss the progress that they were making on that, and so that really wasn't dead until two weeks ago.

DR. SERCHUK: Okay. Then let me make a generic point. We received, I and Alexei, and I believe Anne, received a request of whether we would be available for an MRIP meeting in June, and maybe it was -- We certainly didn't have any idea where black grouper was going, but there was an assessment meeting in June, and I believe, when the note initially came out, it said, well, this would not be a good meeting, because black grouper was going to be assessed in June.

Maybe the decision wasn't made at the time that memo went out, but it must have been very close, and my feeling is that, as soon as decisions are made, they have a knock-on effect to commitments that people either have made or are going to make, and I am just asking if we could be as expeditious as possible in notifying people that were involved in the process that either things are going to occur or not occur, because there are other commitments that have been made or should be cancelled, and we could make other commitments if those weren't already in place. I am not chastising anybody for that, but we're a very busy committee, in terms of our commitments, and so, if one thing comes off the agenda of things to do, it's really important to let people know very soon about that decision. Thank you.

DR. REICHERT: Thank you for that, and I think the timing was very unfortunate in this respect, and correct me if I'm wrong, Julia or John, that the decision is ultimately made by the Steering Committee meeting, which will not happen until next week, and so there is that little bit of a dilemma. Are we telling people to make other plans while the official decision is not going to be made?

I do agree that it would be good for the involved SSC committee, and other people involved, to get that information. On the other hand, there's also the dilemma of jumping the gun and then another decision is going to be made, but I think it's a good point to the communication is key in all of this, and so your point is taken.

DR. SHAROV: As you're discussing it, I am thinking that I wanted to ask Luiz, and maybe he knows and can provide any additional information, or at least we could think of as to where this could go from this point. Luiz, when you said that the conclusion was made that no quantitative assessment could be conducted, when you said that, did you mean in relatively complex -- Well, not relatively complex, but something on the order of either the age-structured model or surplus production models, but these kind of models could not be applied, because of the issues with actually separating the catch of the black grouper, and did you think or did the group think of the data-poor approaches? Is there anything that could have been tried that would have been useful and would be a step, or half a step, forward relative to the previous SEDAR assessment of black grouper, which was obviously limited in the scope as well?

DR. BARBIERI: Remember that every time that we engage in an assessment that we have approved terms of reference, and so it was a matter of whether the assessment parameters, as defined in the terms of reference, could be met or not and then inform all the folks along the way, and my reaction at the time, and I talked to John and the SEDAR program, and I called Dr. Ponwith at the Center and talked to Steve Turner at the Data Division of the Center, to discuss all of these issues and get their opinion.

Eventually, we decided the best thing would be to notify the Steering Committee, the SEDAR Steering Committee, and request that the project be terminated, and so whether data-poor methodologies -- I mean, I think that this is something that we -- My suggestion is that we

potentially put those reports that will come out, both the data workshop report and the working paper, as part of our October SSC review in addressing some of Amy's questions.

Then we have there all the pieces and we can see, from the data workshop report, do we have enough information to move on to a data-poor application, a data-poor methodology, or not, but when you're talking about landings information, that gets complicated, and so I think that those are very good points, but, in my view, the committee would evaluate those and make a recommendation perhaps at our October meeting.

DR. REICHERT: Fred and then John, and then I would like to wrap up this conversation, and we can certainly take a look at it at October meeting, but we have a full agenda.

DR. SERCHUK: It's because we have a full agenda that I am making this comment, Mr. Chair. There have been three issues that have been raised here that really trouble me. One issue is that there were problems with the assessment and so we cannot go forward. Then there were issues that were raised of, well, what does that mean for the existing assessment, and then there were issues raised about if the gag assessment is involved, and I think that we -- If the report is not written, or is being developed, I think, as an SSC, we ought to ask those questions of the people that are writing the reports, so that we have the benefit of their expertise.

I would hate to go ahead to the council and basically say we threw out the black grouper, but we don't know the effect on the gag, but it seems like it's the other side of the penny, and, if I were being regulated, and particularly if I was being regulated to a sense that it was constraining, and I found out that the basis for the assessment for both the black grouper assessment and the gag assessment has been questioned, I would feel a scientific responsibility to investigate that, and I think that, as an SSC, is our responsibility, and so I would not like to see this matter be delayed to our October meeting.

I think that we should ask the group that was involved with the data workshop to ponder this, and perhaps include it in their things, and I would like to see perhaps a webinar, a follow-up webinar, much like we had with lobsters, so that we can review and possibly think about a way forward, long before six months has passed, and I think there are a number of issues that this committee is doing that I think cannot wait for six-month reviews. We have a lot of things that we're thinking about, and I think we could make more use of webinars, in the way that we did with lobster. Thank you.

DR. REICHERT: My remark was not to cut off discussion, but --

DR. BOREMAN: I will be quick. A couple of points to Luiz's last point. I think not having -- I don't remember seeing the terms of reference or what was in the terms of reference, but in the future terms of reference, there should be a Plan B. If Plan A, like what happened here, if the assessment falls apart, then the managers are left with nothing. In this case, it sounds like they can't even fall back to the previous assessment.

The second is the SEDAR Steering Committee is meeting next week. Obviously we're pressed for time here, but it would have been nice if the SSC could provide them with some guidance, rather than just say it's done and we can't do anymore and just drop it and so there you go, take it

or leave it, but, if we can provide the SEDAR Steering Committee with guidance, in terms of a way forward that they can come back with, that would be great. Thanks.

DR. SCHUELLER: I just wanted to echo what both Fred and John said, and I think that it is important, as the report is written up and delivered next week, that that team make some substantial recommendations on how they think that this should be moved forward. I think it behooves them to not only say what the issues are, but what they see as the paths to move forward, and it would have been nice to have that. I know there is time constraints here, but so that we could have commented on that, like Plan A through C is reasonable and D, E, and F would never work, or something, but, as it stands now, we're sort of in a vacuum.

DR. REICHERT: I agree with that, and I think, to John and Fred's points, what is it that the SSC can recommend, in terms of currently? Obviously we discussed before that this is not the first time that the gag and black grouper identification issue came up. That was clearly identified in previous stock assessments, and so that is clearly something that needs to be addressed somehow before we can say, and I throw this out to the group, before another attempt is made.

Another recommendation that we can put forth is to potentially investigate the effect that this report or the outcome of this report may have on the gag grouper and how that may affect our recommendations to the council. There was a third, but I have forgotten that one now, but so, if you could capture those, unless people have issues with at least those two recommendations, and I would open the floor to other recommendations that we can provide to the Steering Committee and ultimately to the council.

DR. SHAROV: I would suggest that the SSC could recommend to postpone making a decision on what to do with this assessment until the SSC gets a chance to review the data workshop report and maybe a sub-group, potentially, of those who were supposed to participate in the assessment workshop could provide some thoughts, some consideration, to the SSC between now and the October meeting on whether they see if there is an ability to proceed with some sort of the assessment that could be useful to the management. Alternatively, we will have to wait until October, and we will come back to this very same point six months from now.

DR. REICHERT: A clarification. Postponing any decision by the SEDAR Steering Committee?

MR. CARMICHAEL: To add another wrinkle to this, this is a stock that is managed jointly by the Gulf and the South Atlantic, and so there were Gulf SSC representatives there as well, and so that's going to add another wrinkle to how we proceed on dealing with this, and I agree there is a lot of unknowns. We haven't seen the report, and we don't know the level of the issues. We don't know how they can be solved. Maybe we will know some of that by next Friday, or maybe we won't. I don't know what the Steering Committee will do.

One of the realities they will have to deal with is the fact of dealing with hotels and committing to space and having to pay money if you don't use that space, and so they may very well have to be in a situation where this assessment is on an indefinite hold until we go through this process of evaluating this and deciding what the next step is. Then we would restart that train and figure out where in the SEDAR schedule all of this can fit.

Don't forget we have the whole MRIP issue out there, with the revised data coming down the path too, and so there are a lot of things, and I think you guys have made good suggestions, but it may still become a halt, just for logistical purposes, while we work out what all of this means.

DR. REICHERT: Thank you, John. I am going to propose that we leave a potential webinar on the table, but I would like to wait until -- That's an excellent point that we should probably involve the Gulf SSC, but I am inclined now to propose that we wait with that until after the SEDAR Steering Committee meeting and after we have a chance to take a look at that report and if there is a need or a desire by the council for some recommendations that we can organize a webinar, potentially, with the Gulf. That is something that I would like to propose to the committee. Any comments or questions or concerns relative to that plan? Seeing none, any comments?

DR. SERCHUK: Just as a point of information. Are you, as the Chair of the SSC, part of the -- Do you attend the SEDAR Steering Committee meetings?

DR. REICHERT: I am not a member, but I try to attend, either via webinar or in person, but that is not always possible, due to scheduling.

DR. SERCHUK: I think it's important you or the Vice Chair or the designee from the SSC be involved with the SEDAR Steering Committee discussions, simply because they have an impact on the SSC, and, also, I think the SSC can be helpful there. That's not to say that staff can't be, but I would like to see the SSC formally, if possible, involved in the SEDAR Steering Committee process. Is that possible?

DR. REICHERT: That's a question that I can ask John. I am not sure, procedurally, where that would go.

MR. CARMICHAEL: There's been requests come up at various times over the years about SSC folks having a voice there, but the people who sit on that are the Regional Administrator, the Science Center Director, and the council representatives, and you as an SSC are advisors to the South Atlantic Council's representatives, and that is your role there, to give them advice.

The Steering Committee has discussed it, and they're not really interested or think it would be appropriate to put SSC and technical reps from all the different groups that are involved within SEDAR sitting there at that table the same as those folks, because you are advisory to them in nature, and I don't know if the Coordinating Council in the Northeast has SSC members that sit on that, but somewhat we function similar to them.

DR. REICHERT: Before I give the microphone to John and Luiz and Fred, I believe it's true for you, too. Whenever I have an opportunity to attend a meeting, it happens that the SEDAR Steering Committee is asking questions that are relevant for the SSC, and so there is involvement, but it's just that we are not a formal part of the SEDAR Steering Committee meeting.

DR. BARBIERI: I just want to have a point of clarification to Fred's question. A few years back, maybe five, but I know there has been more than once that both Gulf and South Atlantic SSCs have made formal requests to the Steering Committee to have representation, and both requests were denied, and so they basically explained what John just mentioned. I am not saying that I

agree or disagree, Fred, but just clarifying that we had that same thought. We had made that request, and they basically responded that they were not interested at that point.

DR. BOREMAN: In the NRCC, the SSC Chair serves at the pleasure of the council, but the SSC Chairs from the New England and Mid-Atlantic attend every NRCC meeting. We have a representative there, and we do sit at the table, even though we do answer to the council and we're there to advise the council. We're actually there to advise the whole group, because we have the best insights in terms of what the SSC expectations are coming out of assessments and assessment timelines, et cetera, et cetera, terms of reference and so on.

DR. SERCHUK: I can only echo John's comments. I was involved with the NRCC process from the very beginning until I left the Service, the NRCC process. The SSC Chairs were not part of the original process. They were added later, and I think they brought great value to the deliberations, particularly after the Magnuson Act was revised to give the SSC more peer review responsibilities that they formerly lacked beforehand.

It's a matter of workload for this committee, and the Steering Committee has a job to do, but, for most cases, it has to come to the SSC, in terms of the technical evaluations of council actions, in many cases, and so there seems to be a role that the SSC could fulfill by being at the meetings. I would prefer they be at the meetings, as they are in the NRCC case, as a full member, but I certainly think that they could be helpful to the process, and that is the reason that I asked the question. Thank you.

DR. REICHERT: Any other comments or questions? Seeing none, the next item is blueline tilefish. Julia, are you going to give us a little bit of an update? Just as a reminder, the data workshop SSC members were Anne Lange and myself. The assessment workshop members are Alexei, Luiz, and Rob Ahrens. The review workshop is Scott Crosson, Laura Lee, and Church Grimes.

MS. BYRD: I know you guys have a packed agenda, and so there are a couple of ways that we can handle this. I can give you a brief update. I wrote a brief update also kind of within each project, and so I can see if anyone has questions about any of the projects and then focus on SEDAR 55, which is vermilion snapper, where we want you guys to review the schedule and the terms of reference and get volunteers to hopefully participate in that assessment, or I can kind of walk through each project. I know you guys have a lot on your agenda, and so I don't want to take up too much time. Is there a preference? Do people want me to walk through each project, or, if you guys have questions about a specific project, I am happy to answer them.

DR. REICHERT: I suggest, since we've had the overview, if anyone has any questions -- That is relative to SEDAR 50, the stock ID meristics workshop, I assume?

MS. BYRD: And SEDAR 56, which is black sea bass.

DR. REICHERT: And SEDAR 56, black sea bass.

MS. BYRD: I guess and also the MRIP revision assessments. Those are on the schedule for late 2017. The calibration to the new effort survey is going to be a little bit later, and there is also

interest in having kind of three years of the side-by-side comparison before doing those revisions, and so those have been pushed off until 2018.

What we really need to get feedback from you guys today is on the vermilion snapper assessment, and so I am going to pull up the terms of reference and the schedule. Those are attachments -- The terms of reference is Attachment Number 6, and then the schedule is Attachment Number 5, and so SEDAR 55 is going to be a South Atlantic vermilion snapper standard assessment, and so a standard assessment, just as a quick reminder, will be updating the last assessment, which was a 2012 update of SEDAR 19.

With standard assessments, you basically update the data streams that went into the last model and then there is some flexibility for changes in kind of if new data needs to be added or if there are different configurations to the model, and those are laid out in the terms of reference, and so hopefully you guys have had an opportunity to review these terms of reference.

These draft terms of reference were put together in collaboration with the Science Center, and so I wasn't going to run through each one, unless you guys want me to, but I did want to specifically point out Term of Reference Number 2, because this lays out the specific changes in input data or kind of deviations from the last model, from the last assessment that was done, and so there are kind of three bullets under Term of Reference Number 2.

The first is considering the inclusion of the SERFS video index. The second is incorporating the latest BAM Model configurations and kind of detailing the changes that were made and the impacts of those changes. Then also the third one is reconsidering the error distributions for fitting the age and length composition data, and I know that's an issue that came up in the tilefish assessment, and, as you guys review the red grouper assessment during this meeting, that is another issue that will kind of come up. I basically just wanted to run through these and see if you guys have any input or feedback on the terms of reference for SEDAR 55.

DR. SERCHUK: I have a generic concern about a number of the assessments that we're now considering. As I looked at the vermilion snapper, about one-third of the catch comes from the recreational fishery, and it's more for black sea bass. I am troubled that we are proceeding with these assessments rather than waiting another year until we have the revised MRIP data.

My feeling is, if there are significant changes in the MRIP database, and I suspect for some species it may, and I'm not familiar with which species, but I've got an inkling that -- It's happened up in the Northeast. There have been some major changes, and it's likely that there are going to be some major changes here. We are going to be back on the treadmill again.

My feeling is we should have a discussion of whether it's appropriate to go ahead with an assessment now and then find out, within a year of having that assessment, because these are then going to be projected for five years in the future, that we're going to have to go back again and take another look at these assessments, particularly if there are significant changes to MRIP. I make that point now, and it's a generic point, because it applies to black sea bass, and it applies to several other species that are covered in this section.

DR. REICHERT: I agree, and thank you for that. I think that's a very important question, and I think we should spend some time discussing this, because it also has ramifications for the red

snapper decisions, and so it's a broader decision. When I was looking at the MRIP revision assessments, the terminal years for red snapper is 2014, red grouper is 2015, blueline tilefish is 2015, and black sea bass is 2015. Those were the ones that are on the slate to be looked at.

Currently, the documentation says there is no consideration of changing those terminal years, and so there is now a delay, and, by the time we would see those corrected assessments, some of those assessments would be four years old, or possibly five, and others would be three to four years old, and so we are -- I am afraid we are finding ourselves in that same situation, and so I would really like to open the floor to this question, and I think it's important to have some discussion about that.

MR. CARMICHAEL: Just to give some background on that, I wouldn't say it's a generic point. It's one of your action items to tell us what you want to do with these assessments, because this MRIP thing has come up rather recently. Certainly, at the time of our last meeting, we were anticipating having the calibrated data to bring into stocks like vermilion snapper, and the four that were slated for revisions are ones that have been done relatively recently, where it was felt that there was some value in doing the revisions to bring those up to the most recent data, as opposed to having to do some back-calculation or back-calibration to bring the estimates down to the old data.

The thought was certainly the stocks that are going to be planned for 2018 would have the benefit of having that revised MRIP data, and so now what we learned, about three months ago or so, was the intention to really not do any of the calibration stuff until the full three years of data are done, do one calibration, if the numbers are available, sometime in 2018, and that will provide us the information that we need and look at doing assessments using the revised MRIP data in 2018, and so that certainly affects our MRIP revisions plans.

I think that does have a big question for vermilion snapper. Is vermilion snapper one that should proceed as planned and have it also take advantage of the revised data and do a revision of vermilion snapper, once the data become available, or do you think there's a better way for handling that? The timing of some of the others, I think we'll have to look closely at the timing of things like greater amberjack and red porgy, to make sure that they're able to take advantage of that revised data, certainly, when it's initially available.

DR. REICHERT: Yes, because those are also stocks, with king mackerel, that are on the 2018 assessment schedule, and I know that's an item that comes up later, but all of them have substantial recreational landings, and so any thoughts of the committee on our recommendations relative to the MRIP adjustments?

DR. BARBIERI: I understand the issues that Fred brought up, and I think that they are important issues, but we've been doing assessments for a while, on a variety of species, and because these assessments, the timing for them, shouldn't go any longer -- The interval in between shouldn't go any longer than five years, and it's one of those things like why not wait a little longer, and I am saying this because I feel that, at times, this committee, and the Gulf SSC is the same way, really had some comments about the side-by-side and the ability of the side-by-side to be conducted in a way that was really informative for the calibration.

The program actually planned on this three years of side-by-side to address those concerns, and I feel that waiting for that, and I am talking about the FES, that I think that it would be beneficial,

because doing multiple calibrations, I think, and using different changes in that calibration methodology over time, has created more confusion than not. I just feel that waiting -- For some of the other, the MRFSS to MRIP and some of the calibration methodologies that have been used before, but, in this case, recognizing that this is not ideal, personally, I would prefer to see the three years of side-by-side data and have a calibration procedure developed that is more robust and lasting and intelligible to those involved than having to do something preliminary now that will require an adjustment later.

DR. REICHERT: Luiz, my question to you is, and I understand that, but do you recommend waiting with the assessments or holding off until that information is available?

DR. BARBIERI: No, I mean I think that we conduct the assessments. We don't know what the impacts will be at this point. I mean, it was the same thing last year, and actually the year before, that the side-by-side were already taking place. The side-by-side, the first year of the side-by-side for FES was 2015. We had 2015 and 2016 already as the side-by-side and being conducted, and we had assessments that needed to be done, and we got them done and provided catch advice.

Now, the process envisions this refreshing as we get more information going forward, and so it's just a matter of, the next time that we have an assessment, those calibrations will be taken into account, and corrections will be made, and so, to me, not conducting assessments this year, for those that are planned, may be more problematic.

I cannot reconcile that decision with the decisions that has already been made for 2015 and 2016. We already went into this, and the agency has announced that it's going to conduct a three-year side-by-side of the FES, and so that would be my recommendation, that we go forward with the assessments as they are and eventually, after the calibration procedures are completed, we go back and use them.

DR. SERCHUK: With all due respect to Luiz, I couldn't disagree more. My recommendation is to postpone these assessments until 2018, when the calibrations are complete. When we put these things on our schedule for 2017, I think we were under the impression that the MRIP calibrations would have been complete enough, and that has changed. It's the same way that we found out, for the black grouper, that, hey, something has changed here and we can't go forward.

Not only will it affect the assessments, even the three years of data, but it's how to use those calibrations. Do you go all the way back in time? How far back in time? What assumptions do you have to make? Moreover, it could have an effect, and most likely will have an effect, in some cases, on how the overall catch limit is divided between the recreational and commercial fisheries if the numbers really change that significantly for the recreational fishery.

This is not a small change. It has big consequences. I would say that, if your concern, particularly in the vermilion snapper thing, about including video indices, that's something that could go forward on its own. If we have another source of information on the stock that's independent, we could evaluate that on its own, whether there's any information on that, but I am very fearful that, once we do these things before the calibration process is complete, we will be doing them over again very quickly after that.

There is a saying that is often used in the military that you don't have enough time to do things right the first time, but you have plenty of time to do it over and over again until you get it correct. My feeling is let's think about whether we can delay it a little bit, so that we can do the right job the first time, rather than to revisit this again because we've come up with new information that's going to change the landscape. Thank you.

MR. CARMICHAEL: I think a lot has changed. Fred is right that this has changed, and, although it doesn't seem like it all the time, the SEDAR schedule does work a number of years in advance, and, when these were put on the schedule, the advice from the agency regarding transition was to expect to have the information available within a few months from now in 2017, and there was a real strong push to get the revised assessments done and get that new information into assessments as soon as possible, because that's better than doing the sort of back look and using the old way to adapt the numbers.

The other thing that has changed is, when all of those plans were put into place, we weren't certain that there would be a third year of side-by-side, and it ended up that we did get the third year of side-by-side, and so you also have that in play, and all of that has happened since we made those schedule decisions, and so I don't think that you would be a bad position of recommending, for all these reasons, and knowing what we know now and realizing that the third year was funded -- I think also probably -- Initial discussions suggested that the thought was -- The expert knowledge was the first two years would probably pretty well drive that and the third year would just be kind of refining it, but maybe that's not the case.

I haven't seen much of the information, but perhaps the first year and second year are more divergent than what was expected and we need to get that third year in there to do the calibrations. You do have a lot of justification of a lot of things that have changed since this original plan was come up with for the timing of these revision assessments.

DR. REICHERT: I agree with that, and so, just as a quick -- Currently, we are scheduled to review the changes -- Originally, it was April of 2018, correct, the MRIP?

MR. CARMICHAEL: Yes, the hope was that they would be done this year and you would get it at your April 2018 meeting, and this is another one of those situations where you have the experts saying that that shouldn't happen, and so I think the Steering Committee is also going to talk about this MRIP revision scheduling, and it seems, in all likelihood, that they're going to be delayed, because that's the recommendations of the transition group. Really, what I understand of the higher levels of people working on this, is we need to wait and get that third year and do it, and so you're not going to have the data available certainly on the timing that we had planned for these revisions.

DR. REICHERT: But what I was trying to get at is the revised schedule isn't known yet. We don't know when we as an SSC will see that, and we can review that, because that may have bearing on what the effect of a potential decision is going to be. In other words, how far are we delaying now everything and how does that affect our ability to make recommendations to the council?

DR. ERRIGO: According to what I heard from the transition team and how things are going, it looks like the revised numbers are going to be about a year later than what they were originally

thought they were going to be able to have them ready by. That is including the third year and including the review of the APAIS calibration, which was not going to be done originally, when they gave revised numbers.

DR. REICHERT: So we are looking at April of 2019 and June 2019 council and then whatever comes out of that.

MS. LANGE: I guess those were my questions. Is there any critical need for the particular assessments we're looking at now, to get them done immediately? Is it all right, for management purposes, to delay it a year or two? Then, down to the bottom line, is we're not really talking now about having information to start the assessments a year from now, which is what I thought we were initially talking about. It's more like two or maybe three years from now, and do we have a real sense of when the revised data will be available? Is it, again, next April or April of 2019?

DR. ERRIGO: They are thinking the earliest that they would have it is sometime early next summer, like June or July, but they're not 100 percent sure. It depends on how things go.

MS. LANGE: So we're not really confident that that's the timeline then, and so it may be two years from now before -- Since it was originally supposed to be available now, and now it's --

DR. ERRIGO: Well, there's a lot that went into it being delayed an entire year. It's not just like something went wrong. The transition team decided that they wanted to wait until they got the third year of side-by-side completed and until the intercept survey calibration was reviewed and incorporated into the revisions, and so that is what made it be delayed an entire year. I would say that I don't think it would go another year after next summer. I am thinking that it might go into the fall before they have the data ready, and so several months, but I don't know much later than that, but who knows?

DR. BOREMAN: From what I understand -- I have a clarification question. In the overview, it says that a standard assessment has been requested, right?

DR. REICHERT: For what species?

DR. BOREMAN: Vermilion snapper, but the terms of reference refer to updating an update.

MS. BYRD: The last benchmark assessment for vermilion snapper was SEDAR 17. There was an update done in 2012, and so this would be updating the model that was used in the benchmark and that was used in the update. I think there were maybe some minor changes, and I would have to go back and look, but that's the model that would be updated in the standard assessment, and so does that --

DR. BOREMAN: No, that doesn't clarify anything, because look at the terms of reference. You're just requesting an update and not a standard assessment. To me, a standard assessment is more than an update. It's reviewing the model, the underlying model.

MS. BYRD: Update the approved with data through 2016 and provide commercial landings. I guess it's a little bit confusing in how it's laid out. This asterisk here notes that it's a standard

assessment at the very bottom here, but I can understand why that would be confusing, and so we can change that the next time it comes around.

DR. BOREMAN: But still, go back to the question that was asked earlier of can we afford to wait. Well, we're updating an update that was updated from a benchmark that was done a lot earlier, and so we ask for another three years or two years, and so the last update was 2012. Right now, we're probably past due, I would think, for at least an update, and can we -- Rather than move ahead with a standard assessment, can we at least get an update in, to give the managers something to go with that has more recent data than 2011 or 2012? That will hold us over until we can do the standard assessment with the new FES.

DR. REICHERT: For this assessment, we have -- In terms of the inclusion of the video index, I believe we have pretty good data in the chevron trap, and so an update -- I think the incorporation of the latest BAM Model configuration is probably going to be -- I don't know, but that's my feel, is that it's probably going to be more significant than the first bullet point.

I don't know. That is a good point. What I am struggling with is a little bit of, okay, what are we going to do with the outcome of the stock assessment, knowing that, very shortly thereafter, we have an update or a correction or whatever you want to call it for MRIP, and that goes to a question that I have. If we decide on delays, how is that going to affect our recommendations to the council in terms of several critical ABC recommendations?

DR. BOREMAN: As a corollary to my comment, and being a former administrator in the agency, I can sympathize with Erik, because what's happening is that everything now is getting pushed back, but we're sitting here with the expectation that, as soon as these new FES is fully calibrated and up and running and the new APAIS is up and running that the Center will have the personnel and the time to just start cranking these updated and new benchmark and standard assessments right and left, and that obviously is not going to happen.

There is going to be another delay while they scramble to do some triage on the assessments, you know what should be done first and which should get the highest priority. That will depend on how ugly the numbers come out after the calibration is done, and so we could be talking more than another couple or three years here.

MR. HARTIG: One of the things that I am extremely worried about, and John alluded to it, is what happens when these estimates come out and they're much, much different? I don't think it's going to end there that day. There is going to be some investigations done into the utility of using these surveys.

In fact, the Center came out with a statement in red snapper, in one of their red snapper memos, that we further recommend a thorough investigation, possibly through a workshop, into the reliability and utility of mail-survey-based MRIP estimates of catch and discards for many of our offshore species, which are known to have low intercept rates relative to other species covered by MRIP.

Already the Center has come out with something that they want to look at, as far as these numbers are a concern, and I think that's a really healthy thing. As a council member, when Roy brought these forward and mentioned how different some of these are going to be, I said, well, I am not

going to be confident, as a council member, to just rubber-stamp these calibrations without anybody looking at them to give them some kind of further investigation.

Now, APAIS, we went through that and we did that. It didn't have major implications, and we only used one year, which I didn't think was the best way to do it. I mean, we should have used more years on APAIS, to get to the numbers that we should have proceeded with, but this isn't going to end at 2018. It's going to go longer than that, and so be cognizant of the fact that it's going to be longer than one year that you're going to have to delay.

DR. REICHERT: Thank you, Ben.

DR. SERCHUK: John brought up the issue of updated assessments and standard assessments, and I think we have to look at the language that we have for the MRIP revision assessments differently than we look at the vermilion snapper assessment, for the time being. As you pointed out, Chair, the red snapper, red grouper, blueline tilefish, and black sea bass assessments are not updates. They are going to same terminal years for these assessments and not update them.

Therefore, the red snapper will only go through 2014, as the current assessment does, and the red grouper will go only through 2015. The blueline tilefish will go through 2015, and the black sea bass will go through 2012. They are not updates, by any means. An updated assessment means you take it through the last year of catch data that you have, and so, if we follow the plan, those assessments are not going to provide any more use, in terms of the current situation, using more recent data, as I understand it from what is written here.

The vermilion snapper assessment is a hybrid here. It's a hybrid because another dataset is being proposed to be used in the assessment. Mostly, in an updated assessment, you use essentially the same data sources that you had in the previous assessments, and, normally, if you wanted to use a different -- Yes, Chair.

DR. REICHERT: Sorry, but can I interrupt you real quick for a clarification? You said red snapper includes a new -- Did you mean to say that --

DR. SERCHUK: Red snapper is part of the same terminal year as exists in the current assessment, which is 2014.

DR. REICHERT: But you just said that red snapper is different because it's a hybrid.

DR. SERCHUK: No, I'm saying vermilion snapper. If I misspoke, I am sorry.

DR. SHAROV: No, he said vermilion.

DR. REICHERT: Vermilion. Sorry. I may have misheard you.

DR. SERCHUK: The ones that are for revised will only be revised using recreational data before they are calibrated to the terminal years of the previous assessment. They are going to be old. They are not current, although they're not too far back, but they're not going to give any indication of the current state of the stock, and so that's a different type of assessment than we've talked about, a revision assessment.

Normally, we talk about standard assessments and updates and benchmarks, and this is a revision assessment. It's a completely different category, and so we're not going to be any better off, quite frankly, any more informative about current conditions, than we were from the last year, other than we'll be more current, in terms of the dynamics of the stocks, up to those terminal years.

That's another reason why I think we should wait. We could wait another year and then bring the whole series up two or three or five or six years. The vermilion snapper assessment, I said, is a hybrid, a proposed hybrid, because it talks about bringing in the SERFS video index, and, typically, when you bring a new data source in, it seems to me that you would either want a standard assessment or you would want to go back and have a benchmark, because it could change the landscape by having that in there.

Then I'm also concerned, by having gone through the red grouper assessment, where we have used different fitting procedures for the size at age compositions, that also can change the landscape, and so that's another reason why I think we should be very circumspect about moving forward on the vermilion snapper without having a more formalized review than sort of just an update and why I'm very leery on moving ahead on any of the revision assessments, because we're not going to get any insight into the current state of the stock that was any different than was provided in the last year of the assessment, other than the status that that last terminal year will be different.

MR. CARMICHAEL: A lot of this is about trying to manage the workload. We can't get everything, and we understand the concerns with terminal years getting old. We can't update everything within one year. There is a limited number of stocks that the Science Center can do on behalf of the council. The ones that were chosen for the revisions were based on the fact that they weren't that old, and so it was felt that that was a reasonable way about getting those up to date, because, starting in 2018, we won't have the old MRIP way of doing things available.

Right now, we have the old MRIP, and they're doing the side-by-side, but, starting in 2018, the numbers available for monitoring the council's catch limits are going to be the new MRIP, and so there will have to be some sort of back estimation to bring your estimates based on assessments using the old numbers, so that they're consistent with the new numbers, and so the idea of the revisions was to try to take some stocks for which that is potentially a bigger concern than the time since the terminal year.

That is why those stocks were chosen, because they are relatively recent. The ones that you see that have been scheduled for say 2018 and 2019 for like standard assessments are ones for which the council has come to the conclusion, and we've talked about this here before, that those are probably old enough that they need the full-on advance the terminal year standard assessment approach, and so it would be nice if we could wait and get all of those important stocks updated, but we know that that's not going to happen, and so we do need to make some progress when we can.

Vermilion may be one, as John Boreman and Luiz have mentioned, that trying to get some of these other issues addressed for vermilion, so that perhaps then it can be revised with the MRIP data, when they become available, and I will point out, on the ones that we have planned for MRIP revision, particularly red snapper, which we're going to talk an awful lot about probably tomorrow, it may no longer be appropriate to be in that revision assessment slot.

Perhaps vermilion snapper can go in there and we can still accommodate getting four assessments, and I will point out that the Center has not necessarily committed to saying that they could do all four of those within the time that we've allotted in the SEDAR planning schedule, because they don't know what those revision assessments are really going to consist of, but they have been going along with the idea that they could do four and that it will take basically a person's slot for that spot in that year.

We do have a lot of limited resources, and trying to keep some of these moving is good, as much as I think the council members would all agree wholeheartedly that they would like to see all fifteen stocks that have been assessed updated with that MRIP data within a year or so, but we have to balance the fact of knowing that it's not going to get all done and we're not going to have the existing survey after this year, and so we're going to be into the new survey, and what's the best compromise for getting the assessments on equal footing with that survey.

DR. REICHERT: So what do we do? I am looking at the schedule for -- If we stick to the current schedule, if the current schedule comes to fruition, we will see this assessment in our April 2018 meeting. At that point, there is no report yet on the MRIP, right? That will happen after that. Okay. So what is the pleasure of the group?

We have several suggestions on the table, and one is to postpone and one is to potentially recommend making this a true update, and another one is to go ahead with the current schedule and, by the time this is completed, perhaps there is enough information that an update can be provided after the -- A revision can be done using the adjusted recreational information.

DR. SERCHUK: Let me put forth another alternative, recognizing the scheduling problem. The black sea bass assessment had a terminal year of 2012. That is almost as bad as the vermilion snapper's 2011 terminal year.

MS. BYRD: There is a black sea bass standard assessment going on right now, and so the terminal year will be 2015 when it's done, and it is on schedule to get to you guys in October of 2017.

DR. SERCHUK: So why are we having that under the revised assessments here?

MS. BYRD: It's under the revision assessment category, and so what I think the council did is they chose the assessments that were ending most recently and put them in this revision assessment category, since it's not advancing the terminal year and it's just updating the recreational landings information, and so they felt more comfortable doing that with assessments that weren't old, so to speak.

DR. REICHERT: Fred, that's why I mentioned earlier that the terminal year for the black sea bass, under the MRIP revision assessments, the terminal year for that black sea bass assessment is 2015. That's the one that is currently going on, and so that's not the one that we have seen several years back.

DR. SERCHUK: Okay. The option was to take the two assessments that were the oldest, but now it's only the vermilion snapper that's the oldest, and I think that should be done as a standard assessment, quite frankly, because I think there's a number of things that have changed there. The

others, I think -- I have no strong feelings about it, but I think we're going to be revisiting assessments significantly in the future, and I think that we're going to go over a lot of stuff again. If you think that people are overworked now, they are going to be overworked again when they have to revisit things, because the calibrations that are going to be used we know are incorrect, because they don't have the full calibration set. We know that.

DR. REICHERT: The current plan for vermilion is a standard, and so it's my understanding that the SSC currently recommends to go ahead with the standard vermilion snapper assessment as is in the briefing book. We looked at the terms of reference, and I would like to see if anyone had any comments on the terms of reference. Julia highlighted a number of significant terms of reference, especially on the Number 2. Are there any questions? Seeing none, then we approve the terms of reference for this assessment.

MR. CARMICHAEL: I would like to reiterate that I think John Boreman made a good point about this being a standard, but the first word being "update". I think we change the wording of that to conduct a standard assessment that, blah, blah, blah.

DR. REICHERT: That's a good point. Thank you. What we need now is some SSC members who are willing to participate in this assessment.

MS. BYRD: It's going to be just a series of webinars. The council needs to review and approve this schedule at their June meeting, but, right now, it's a series of five webinars from August of 2017 through February of 2018, and so we're looking to see if any SSC members would be interested in participating in this standard assessment.

DR. REICHERT: Any volunteers of people that have possibly been involved of previous assessments? Luiz. Anyone else? George. Julia, do you need two or three?

MS. BYRD: Two or three would be great.

DR. REICHERT: Okay. We may ask other members to participate, if needed, and so thanks, Luiz and George. That is the vermilion snapper assessment.

DR. ERRIGO: I just want to make sure that I got everything right. To clarify, the SSC recommends proceeding with the vermilion snapper standard and also to include that in the MRIP revisions, perhaps, or are we going to wait until we talk about red snapper?

DR. REICHERT: What is the pleasure of the group? I suggest that we wait, because that was the next thing that I was going to mention, because we have moved back and forth between the issues on this agenda item, and one of them was the four requested stocks for revisions, the red snapper, red grouper, blueline tilefish, and black sea bass. Currently, I personally don't see a need to, right now, add vermilion snapper to that. Was that your question, to change that list?

DR. ERRIGO: Right, to add vermilion snapper to the MRIP revisions. I heard someone say that perhaps adding that in, to revise the vermilion snapper standard, and perhaps move red snapper from that list.

DR. REICHERT: What is the pleasure of the group, given the issues we have, and we will discuss that on Thursday, with red snapper.

DR. BARBIERI: My suggestion is let's pencil that it for further discussion.

DR. REICHERT: Until after the red snapper discussion? That's a good point. Let's do that.

MR. CARMICHAEL: And red grouper.

DR. REICHERT: And red grouper, yes. Let's do that, and we will come back to that after we have had our discussion about red grouper and red snapper. I am sorry that earlier I forgot about black sea bass. You mentioned, Julia, that black sea bass is going on right now, and our SSC reps are Jeff, George, and Anne. We will see that, as you said, at our October meeting. Then the blueline tilefish stock assessment is going on. I mentioned our reps. Julia, do you have any comments on that one right now?

MS. BYRD: The assessment workshop is coming up here in May, and I think it's going to be a challenging assessment, just due to kind of data limitations. There is no age data and only fishery-dependent indices. There is uncertain kind of recreational catch from the Mid-Atlantic and very limited biological samples from the Mid-Atlantic, and so there are a lot of kind of data challenges that will have to be worked through for that one.

DR. REICHERT: As a reminder, this is the one that the stock was determined, and so we are looking at the Mid-Atlantic and South Atlantic as one stock. Okay. The stock ID meristics workshop -- Go ahead, Church. Sorry.

DR. GRIMES: Thank you, Marcel, and I think you just answered the question, actually. The stock ID workshop decided that it was one genetic stock throughout the Gulf of Mexico all the way through the Mid-Atlantic, right, and then you decided to -- One genetic stock, I said. Then you decided, or somebody decided, to do the Gulf of Mexico and the South Atlantic and assess them as separate stocks, and what was decided about the Mid-Atlantic and the South Atlantic?

DR. REICHERT: We discussed that at our last meeting.

MS. BYRD: I can -- It was kind of a multistep process that was used to determine stock ID in SEDAR 50. There was the stock ID workgroup meeting that was held in June, and that basically recommended one stock from the whole Atlantic coast to the Gulf of Mexico. That was an unanticipated result, and so folks from the Gulf Council didn't have any SSC representatives at that meeting.

Then there was an SSC kind of sub-panel meeting that had representatives from the Mid-Atlantic and the South Atlantic and the Gulf SSCs, and then, after that step, there was a third step that was a call -- We call them the science and management leadership group, and so it was the head of the Northeast and the Southeast Fisheries Science Centers, the Regional Administrators from SERO and GARFO, and leadership from all three councils that were included.

Their recommendation was to do the stock assessment using the Atlantic coast, the U.S. Atlantic seaboard, and then using a southern, or southwest, boundary, I guess, as the jurisdictional line

between the Gulf and the South Atlantic Councils. The terms of reference were changed to reflect that. The data workshop term of reference laid out the assessment unit stock, and then an assessment workshop term of reference -- Under the uncertainty term of reference, a bullet was added to do exploratory models using that Gulf data. That was maybe a little bit more detailed than you were looking for, but it was kind of a multistep process to determine the assessment unit stock.

DR. SCHUELLER: Just to clarify that, so the management jurisdictions that were specified, that was based completely on management needs, correct? I mean, there was no scientific basis to make that decision by those folks. I just want to get it on the record, because this group --

MR. CARMICHAEL: I think that depends on who you ask. There were scientific opinions based on the various steps that we went through, and people had various opinions as to how strong the evidence was.

MS. LANGE: I think also, since there hadn't been a specific analysis in the Gulf, there was some discussion that there was no clear indication of where the line would be, and so, if it was somewhere on the west coast of Florida, in the southern part of the west coast of Florida, which is what might have been indicated, there was no -- Again, there was discussion about there was no strong reason to leave it at somewhere around Fort Myers or something versus at the council divide, and so I think that was played into the leadership's decision, because there was no clear indication of what part of the Gulf would be separate or whatever, and so --

DR. REICHERT: Okay, and so --

DR. SERCHUK: I am still not sure whether Amy's question was answered. I participated in that stock ID workshop, and there was no evidence presented contrary to the evidence that existed that it was one -- They couldn't detect anything other than a homogenous stock throughout the area in which samples were taken.

Samples were taken along the Atlantic coast, and there were a few samples -- I think there were sixteen or seventeen fish that were taken on the west coast of Florida, and they were not any different from the ones on the east coast. It's a small sample size, but there was no other evidence that existed that said that they were different, and that was the conclusion. Now, Amy asked where did this other position come from and what was the basis for that, and I don't think anyone answered her. Is there an answer for it?

MR. CARMICHAEL: There was the workshop, and there was review by the SSCs. There is an SSC sub-group review, of Gulf and South Atlantic folks, and I would say that not all of the -- Certainly not all of the experts on that, and certainly some of the Gulf folks, felt that the genetic evidence was overwhelming and completely cleared the waters, in terms of where the boundary was.

As Anne just mentioned, there was a question about the number of the samples and the coverage of the samples and where the line existed, and so that left a bit of still some confusion to be resolved, in which case the leadership group, which consisted of Science Center as well as Regional Office as well as council representatives, decided that, okay, here's how we're going to proceed in the light of this uncertainty. We can provide you guys all the reports and documentation

and everything of that, and I think we probably already have, but, if you would like to look at it in greater detail, we can share all of that too, but that's kind of where it stands now.

DR. SERCHUK: I participated in the workshop, and I participated in the joint meeting. The lesson here is, for me, that we probably should have integrated the Gulf people into the workshop, because everything after that was political, quite frankly, as far as I can see. There was no new science that was brought to the table. It's very easy to criticize the science, but there was no new data that was presented, and so I understand where we are now, and we realized that, at the stock ID workshop, that considering it as a unit stock didn't mean that it had to be the same management unit. You could manage it within the purview of the different councils.

We realized that the amount of information to subdivide the productivity of the resource was going to be difficult, because it was uneven across the entire area, but, again, I am one for lessons learned, and the lessons that I learned, from having that joint meeting after the workshop, was we should have had those people from the Gulf that had some expertise on it at our workshop and that would have alleviated some problems. Thank you.

MR. CARMICHAEL: That's a good lead into the next couple of things that we need to talk about on that, because the stock ID meristics workshop was intended to do just that, to bring everybody in, and that's the lesson that has been carried forth from that to certainly the leadership level that looked into it in the Steering Committee and SEDAR, in terms of looking at things like the research track, is that everyone who is going to be potentially involved in this needs to have a voice in that process by which stock ID is decided.

That is the way we're going forward now in the future. We had hoped to have this workshop to deal with this upfront of those assessments. Due to primarily financial reasons and other concerns, we weren't able to have that this year, and so it's been suggested to handle stock ID, certainly for cobia and scamp, within those research track assessments.

Now, that means there's another facet to those research track assessments that we're not quite sure how to best fold it in and what it means, which is something else that the Steering Committee is grappling with, and certainly SEDAR is grappling with, and we can get into that, I guess, next, but I think the lesson has been heard loud and clear. We are just trying to figure out how to make sure that it can always happen.

DR. SERCHUK: Does this mean that we're going to get into the research track process next? Because I am thinking that people are putting the cart before the horse. People are making decisions about going into a research track process, which this committee still hasn't -- We discussed it our last meeting, but it looks like the decision has been made to put it in, but we have not commented on the desirability of that.

DR. REICHERT: Hold on, Fred. We will have an opportunity to comment on it.

DR. SERCHUK: I understand that, but you understand that someone says that these are going to into a research track process, and we haven't formally endorsed the research track process. Am I wrong?

DR. REICHERT: No, but let's go through the stock ID meristics workshop.

DR. SERCHUK: I fully agree with John's intervention about taking the lesson on issues that affect more than one council, and we ought to bring all the relevant expertise into an issue. Thank you.

DR. REICHERT: Thanks, Fred. There is a possible joint meeting of the South Atlantic and the Gulf of Mexico SSC, where we potentially discuss that, and the MRIP, John, was something else that was suggested as a possible topic for the uncertainty.

MR. CARMICHAEL: Yes, and I didn't want to get into that, Mr. Chair, at this time, because we are -- I am concerned about the time, and I would like to have some discussion of the research track and what we know about it so far, but, since you mentioned it, yes, there was support at the Gulf and South Atlantic leadership level to have a joint SSC meeting, the Gulf and South Atlantic SSCs, this year, primarily directed toward the MRIP estimation and the dealing with the very uncertain rare events and high PSEs, whatever you want to categorize them as, these stocks that we've been dealing with, and try to come up with a way within our region to do what the MRIP staff has laid out as alternatives for doing the estimates.

When we have that workshop and have everybody together, one thing that SEDAR would like to get out of that is, from the SSC perspective, what is the universe of stocks where we need to dig into stock ID in great detail? Some stocks, you may be satisfied, and some stocks you may have a lot of concern, and some stocks you may say we don't think there's any information in and we're not there yet, and maybe a least a research recommendation, but, as a first cut, we would like to get, from the SSC's perspective, what are the things that we really need to focus on with stock ID.

That will be discussed probably more later, and we're at the early stages. We're not sure, when, where or how we're going to put this meeting together, but the councils are in support, and so we're going to start working on that after this meeting is done.

DR. REICHERT: Thank you. That brings us to the research track with the Gulf of Mexico and South Atlantic scamp, Julia, the early stages of a research track assessment and -- Go ahead.

MS. BYRD: I guess you all will be talking about the research track, and John will kind of lead that discussion, but, just as an FYI to you guys, the SEDAR Steering Committee decided, at their last meeting in the fall, to move forward with scamp and Atlantic cobia research track assessments, and so John will talk more about that, but I just wanted to bring that to your attention, because, with the current timing, where these are laid out, the scamp assessment is currently scheduled to start at the beginning of 2018, the first quarter, and cobia is tentatively scheduled to start the second quarter of 2018.

We may have to come back to you with things like term of reference and detailed schedule before your October meeting, and so that's more of an FYI, time-wise for you guys, and once we go to the SEDAR Steering Committee meeting and we start to develop terms of reference and schedule, I will make sure to stay in touch with council staff and the Chair and Vice Chair, to kind of let you know how things progress and when we may need to have you all review stuff.

DR. REICHERT: Thank you. Before we get into the research track discussion, we're going to take a brief break for about ten minutes. We will come back at quarter to four.

(Whereupon, a recess was taken.)

DR. REICHERT: All right, John, the research track.

MR. CARMICHAEL: Thank you, Marcel. The research track, and I believe a lot of this will be updated from last October. At the September of last year Steering Committee meeting, the Science Center gave a proposal to the Steering Committee about this idea of a research track assessment approach. Now we have the benchmark, standard, and update, and the research track would be the way of doing first-time assessments and major changes in assessments.

Then would be operational assessments, which could range somewhere between the standards and updates, and they would bring in the most recent information, and one of the aspects of the research track that would differ is that the research track -- When the benchmark or the tool is being built, what we now call a benchmark, it wouldn't necessarily be focusing on the most recent information. That would come in during the operational that's done soon thereafter.

The Steering Committee received that, and they were intrigued by the idea that this could increase overall assessment productivity, but there were a number of questions about how the research track would actually operate, and we're using the term "research track", but I don't know that I could say at this point the vision of what this research track looks like is identical to the use of that term in the Northeast, partially because we haven't fully worked out what the vision for the research track in the Southeast is.

The Steering Committee is going to be looking at this some more when they meet next Friday, and our hope was to have a process fairly well laid out, if not the entire process, at least the first half, so that the assessments of scamp and cobia could get going, and we would know then what we need to tell you guys and the councils and others about terms of reference and schedules and what to expect, so all the constituents of SEDAR, so to speak, would know what's coming up and what this research track means.

It has proven difficult, despite a fair amount of effort over the last few months, to try to really reach a consensus within the various folks who are really involved with doing the bulk of the heavy lifting with regard to these assessments. It's been difficult to reach a consensus on just what the research track means and what role do specific deadlines -- We're very deadline-oriented now, and how much is that carried over into the research process versus how much of the process is devoted to hypothesis testing? Where is this idea of stock ID addressed? Is it addressed upfront or is it something that's addressed through the entire research process and thus carries itself through the whole thing and is reviewed in the end by the peer review?

A little sidebar on cobia is, in discussing that and thinking that, for cobia, if stock ID is carried through the entire research track process, that means that folks in the Gulf, as well as folks all the way up through the Atlantic, would need to be engaged within the cobia assessment, and the Miami Lab has not allotted resources to be engaged in the cobia assessment, and so there is some question as to whether or not the cobia assessment is going to be able to proceed as a research track, which we'll have to talk about next week at the Steering Committee as well.

We provided the presentation that we had from the Steering Committee last year, which I think you guys also -- I believe we would have provided that in October as well, and we had hoped to

have a more detailed document, but we just didn't have it available at this time. We're still working out a lot of the specifics.

There is some information on the SEDAR website and a decision document and a summary of what the workgroup that's been working on this has come up with so far that is part of the Steering Committee documents, and maybe I will ask Julia to send you guys a link of that, so that, if you want to look at that in detail, but that was just posted last week. That's hot-off-the-presses information, and we're not sure where all of this is going, but I think, at this point, if we could get some general feedback from you guys on some of the broader topics, like how important is structuring this thing around specific details versus more of an open, hypothesis-testing approach? How do we deal with stock ID and the research track? Is it practical to let a decision like that carry through the entire process?

This idea of the research track building you a tool and then you update it through the operational assessment and how you view that and what you think of the idea of an operational assessment that potentially could run the gamut from what we do now as a standard to an update, and with you guys as the peer reviewers of that and you having a pretty big role, in terms of, when you write terms of reference, specifying what that operational assessment will do.

Another key fact is that you want that operational assessment -- The vision is that that operational assessment will incorporate recommendations from the peer review and recommendations from the SSCs when they look at it, and so that's another benefit, that that brings those changes in sooner rather than waiting for another benchmark assessment.

I think some perspective from you guys on those things might help the Steering Committee deliberations as we go forward and then your maybe your thoughts of timing of these projects, given there are a lot of unknowns about the specifics, and maybe that's not important to you guys and maybe it is. The SEDAR perception has been that we need to let folks know what they're getting into when they get into the research track, and it's important to lay out the process and the timeline and the schedule and the expectations upfront, and we're struggling to do that as of today.

DR. REICHERT: I think as an SSC, and I think we discussed that when we started talking about this research track. The SSC is scheduled to be involved in that process, like we are involved in stock assessments, and then there is a CIE review, is the current plan, of that research track, and then, the operational assessments, it's the SSC who would review those, and so, again, we would be involved in that process, at a minimum as a body to review those, and so, John, a question I had is the scamp and the cobia are currently scheduled for 2018. Do you have any indication when in 2018 that process would start, because I think that's probably somewhat relevant for us, in terms of when we are discussing this, and, as Fred said earlier, planning for our involvement, relative to the workload, the SSC workload.

MR. CARMICHAEL: The thought was that scamp would start in the first quarter of 2018 and cobia maybe a quarter later, and so second quarter, probably, for cobia.

DR. REICHERT: So, right now, that means that we probably would have a more detailed discussion, or a discussion on the details of this, in our October meeting.

MR. CARMICHAEL: The concern within SEDAR is that, if we want until October to really have a detailed discussion, and certainly know what the first few steps look like, that's going to really put us at a great disadvantage to get schedules and terms of reference and meeting spaces and all of that type of thing lined up in early 2018. If we are still, in October, trying to decide what this means and what the project path looks like and what the schedule is, then it's likely they're not going to start the first quarter of 2018.

DR. REICHERT: So does that mean that once the discussions in the SEDAR Steering Committee are completed that we should have an opportunity to review that? What I'm hearing from you is that that would probably a require a webinar or an extra meeting.

MR. CARMICHAEL: I think that's correct, and we've thought about -- If it goes that way and we do have a sense of what the first half of these will look like, we would probably need a webinar meeting to talk about it, to get you to look at terms of reference, schedule, and discuss who will take part. Ideally, that would be probably in July or August, so that we have that information for the September South Atlantic Council meeting.

DR. REICHERT: John, remind me, what is the feedback that you specifically would like to have from us now? I think, personally, the stock ID is something that should have a high priority once the research track is developed, given the example of blueline tilefish. I think those are some of the decisions that probably need to be made early in the process. That was one of the things that you mentioned that you wanted some feedback on, or the Steering Committee wanted some feedback on. I also think it is very important for us, the SSC, or selected SSC members, to be involved in a very early stage, and I think that's the current planning, if I'm not mistaken, and so I will open the floor for questions or discussion.

MS. LANGE: Are we talking about the cobia or are we talking about the research track in general?

DR. REICHERT: This is the research track in general, because those are still -- The plans for that are still developing, correct, John?

MR. CARMICHAEL: Yes.

DR. REICHERT: So that's not specific to scamp or cobia.

MS. LANGE: I guess my first question is the difference between the benchmark, with the research cycle, or the research track, and the standard and update basically being the operational assessment, and are we really still looking at two types of those operational assessments, those where you're just turning the crank and adding another year of data and those where there are additional issues that may come up? Why combine them if you're really looking at potentially two different types of assessments?

MR. CARMICHAEL: I think we're looking at simplifying it to just take both of those and now put them under this new term of operational assessment and then to give the SSC the flexibility to decide where within that range you put this particular assessment. What things are you comfortable with having updated in this operational assessment? If you think it's great and it's just a matter of updating the data, then I think you say that in the terms of reference.

Then, if you have the opportunity, if you think there is some new information, a video index or what you have you, then that's the type of stuff that you could specify that is addressed, and you're the ones making the review of it, and so you're the ones really given the authority and responsibility to lay out, in the terms of reference, whether a particular operational is more like an update or more like a standard, as we currently call them.

MS. LANGE: To that, but then, if you're adding a new index, isn't that something that should go through the research track again, if you're adding a new part of the methodology or something else?

MR. CARMICHAEL: I think that gets into the gray area, and it depends on how different that index is. The general thought now within SEDAR is, if you already have a number of indices and you're just adding a new one, you should be able to do that without going through a whole benchmark, versus, if you're bringing in something new that maybe leads to bigger model configuration changes to accommodate that type of information, then that probably justifies a benchmark, but that's one of the things that now, under the process, is in kind of the gray area.

DR. REICHERT: John, at some point, the decision whether or not the next assessment of a particular species is going to be a research track or an operational assessment, that is a decision that the SSC is going to be asked to make or is that a series of decisions?

MR. CARMICHAEL: That's a decision would have a role in, just as now you have a role in should the next assessment be a benchmark or a standard or an update, and the thought is that, once an assessment tool has been built, then future advances of its terminal year should be done as operational assessments and not as an overall research track, unless there is a need to address bigger issues, bringing in a new model or what have you.

There is also a thought that a research track shouldn't always be individual assessments. You might have a situation where you have an overall comprehensive multispecies survey that becomes available, something like the video survey, and you could devote one to how would you best develop indices for the video survey and maybe combine a new survey with existing surveys and work those kinds of issues out for the assessed stocks, so that then you could bring that information that's been through peer review and evaluation and all of that, bring that in through more efficient operational assessments down the road.

DR. SERCHUK: Clearly I think the processes need to be specified rather clearly here, and, again, I don't mean to be a broken record, but the whole idea of operational assessments, the whole idea of the research track, at least had its development in the Northeast. That doesn't mean that you have to do it the same way down here, and I hope maybe you could learn from the Northeast.

The idea in the Northeast was, one, to give the assessment scientists some time to think about how to make a quantum leap in terms of looking at the assessment framework. That's what they're most concerned about, the modeling. If you were going to bring a new model in, particularly, but they could also be new data sources, rather than bringing it in at a time where you brought the new model into a benchmark and then, right from the benchmark, you would have management advice, people would be confused of whether any changes in the advice coming out of it were either due to a change in the status of the stock or a change to the modeling effort.

The idea was, well, let's take this out of the advice provision cycle and what we would do is have a benchmark type of review, but we wouldn't use the most recent data. We didn't have to use the most recent years' worth of data, because we were not providing management advice from that, and that we could test that model, or we could test a time series, or we could test any new information, or any new creativity, outside of an advice-providing context, which normally would happen from a benchmark assessment.

The other thing, coupled with that, was the operational assessments, and the operational assessments, as defined in the Northeast, were very, very simplified. It was that an operational assessment would be conducted by the lead assessment scientist only, and it wouldn't go through any committees like what we have now of a data committee, and the lead assessment scientist would present the update, and that is just provide new information to the agreed-upon framework. No new series would be put in, and then present that to a small group composed of some SSC members for their blessing, in terms of can we go forward with this.

It wouldn't involve large amounts of peer review after that, independent peer review, and so, for example, the twenty groundfish stocks that are included in the multispecies plan are taken as a lump. All twenty stocks are done in one operational assessment. Each of the assessment scientists do their update, and they have a standardized format, maybe two or three pages, and the blessing comes out of that, and so it doesn't go through the same sort of steps we do down here with a standard assessment that goes through a data webinar and then another webinar and so on and so forth. The time commitments have really shrunk, and most of the responsibility goes on the lead assessment scientists.

Having said that, and I think, in the Northeast, the operational assessment approach has worked out. We've been able to get through a lot of assessments without taxing a lot of people, but, unfortunately, they've all come out of benchmarks. They haven't come out of a research track process, and, having been involved with the development of the process, one of the reasons that the research track hasn't worked the way it's been envisioned is, if there is something different, in terms of the status of the stock, that comes out of the research track process, particularly if it sees that, wait a second, we used a new model and what we're getting is much higher stock sizes than we had in the old model, there is a great political impetus to turn that research track assessment very quickly into an updated assessment, because I want to use that information as fast as possible if the stock status is very much different than it had been before.

To the best of my knowledge, even though this research track process was developed maybe five or six years ago, at least, to my knowledge, there has not been more than one that has gone through a research track process, and I think the one that has gone through it was a U.S. candidate stock that was done because of the two countries.

John Boreman can fill in the details on this, but most of what I see planning in the Northeast involves benchmark assessments. I haven't seen any research track assessments appear on the agenda for the scheduling workshop, and so I think we need to think about does the research track replace the benchmarks? Is there a phase-in on it? How do we go about it? Will the SSC have to be involved in the operational assessments as a huge committee or can we just put two or three people on it? I think it all has to be specified in advance.

I also think that typically the impetus for a research track assessment is somebody has been working on a new model development or somebody has been looking at significant changes in life history or significant changes in the dynamics of the stocks that really make a quantum leap from the existing knowledge base.

I don't think you can have a research track and just say, look, we just need you to compile the information. I think you really have to have some basis for moving ahead with it, because it requires a lot of time, and so I hope that's helpful in setting the stage for it, because I think we're moving ahead a little bit too quickly, in my mind, without really understanding the logistics and the details and the involvement here. Thank you.

DR. REICHERT: Thank you, Fred, and, from the documentation that we've had in the past, and, John, correct me if I'm wrong, yes, the research track was not meant -- The SSC involvement is not meant as a whole committee. Like with benchmark assessments, there is a number of SSC members that are representing or are participating in that process, and then, at the end, it comes to the SSC for review, and, to your other point, in terms of involving people, I think the idea was to involve -- A number of people are working on that specific topic or species, whether it be life history or otherwise, to be involved in that process. Is that correct, John, or is that still something that is in development?

MR. CARMICHAEL: I think when Fred was talking about the subset, that was more the operational phase and the peer review, because we sort of envision the SSC as a whole, like you do with standards and updates, reviewing that, and he said it's even a bit lighter. They're having a subset of SSC, which I think is something to put on the table to consider. I like the idea of considering does the research track replace the benchmark, as opposed to something in addition to the benchmark process. That maybe has some potential.

I think the idea that -- Many of the ideas that have been put forth to try and work out how the research track works are building off of the existing process and having some type of data step, assessment step, and peer review, and leaning toward an assumption of having a CIE-type peer review. One of the challenges of that is that carries a lot of logistical constraints. You've got to decide when you want it and know when you're going to have these reviews, and that can impose some deadlines, and so there is some question as to how critical that is to the overall process, which your comments on that would be appreciated as well.

I think definitely Fred's point about laying this out in great detail is important, so everyone knows what they're getting into, and I think our Steering Committee reps, who are here in the room, Gregg and Michelle, are listening closely to this, because they're going to have to deal with this next week, and I think that will probably play into their thoughts as well, as to where we are in the research track and how we go forward with our next assessments.

DR. REICHERT: Thank you, John, and I thought you were talking about the research track, and I completely agree with you that I think it would be good if like a subset of the SSC could be involved in the operational, but I am still a little unclear how that would happen if that's a relatively short process, in terms of adding years and cranking the wheel, or whether that happens in a series of webinars, where SSC members and potentially others, will have an opportunity to look at model runs and comment.

Then, in terms of deadlines, I personally think, and that, I think, also goes back to what was said earlier, in terms of planning, both for the SSC and others, and I think it would be good to have a clear timeline for both research track and operational assessments, so that we know what is coming up in terms of review. Also, I think, ultimately, the planning of operational assessments will hinge on the completion of the research track, at least the first operational assessment, and so, in that respect, I think it's important that there is at least a clear timeline for both, and I am opening the floor for comments.

DR. SERCHUK: One additional question, Mr. Chairman. Although our overview indicates that scamp and cobia have been identified as candidates for the research track, it's not clear why those two species, for me, were identified as such, and can you explain why those two in particular were seen as necessary to go through the research track?

DR. REICHERT: I will ask John to answer that question.

MR. CARMICHAEL: Yes, I will. Scamp has been the initial target as the first research track for a while, certainly prior to last September, when cobia was added to the list, and the appeal of scamp was that, we knew going in, there was a Gulf/South Atlantic Council issue down there in the Keys as to whether or not it's one stock or two stocks and that we needed to have both entities together in dealing with scamp.

It was seen that, okay, this is one that's going to be done collectively, kind of like black grouper was done and kind of like king mackerel has been done, and so that makes it a real ideal candidate to put both the major entities and both SSCs on equal footing, in terms of doing the first research track.

Then, in September, the Steering Committee felt that they were ready to move ahead with the research track, based on -- Assuming the details would be worked out, certainly, further than they are now at this point, and seeing that it offered a promise to get productivity higher, in terms of assessments, and so they felt like, okay, that's good, then maybe we should do cobia like this, also realizing that cobia's other appeals were knowing that it has some complexity going in, in terms of what the stock structure is, and the South Atlantic Council had an interest in delaying cobia until data through say 2018 or 2019 could be involved, because of regulatory changes. They want to have a couple of years of that going into the assessment.

The research track really gave a way to get started on the assessment and start getting the tool built and then be able to come in, in say 2020, and bring in that more recent data that the South Atlantic Council was interested in having included, and so how much of that has panned out today is probably something we will have to debate, but that was the thoughts behind putting cobia on next, and the idea was that, from that point forward in September, what had been scheduled as benchmarks would become research tracks.

There was even discussion of the gray snapper in the Gulf, which got started late last fall, going through the research track as well at the Steering Committee, but them, upon further consideration with the Gulf staff and the Science Center folks and SEDAR, they realized they weren't ready for that, and so that one stayed as a benchmark, but that was kind of discussed as even becoming a research track. The thought was to just take all of the future assessments and put them into research track from this point forward.

DR. REICHERT: Two quick points. As you may remember, we, as an SSC, had put scamp on the priority list for quite a while, and it was kicked down the street, or the hill, several times, and that was part of that also. Then, for cobia, there is a couple of ongoing studies that may shed some light on the details of the stock distribution that would be available for this research track, and so that was, if I remember correctly, another reason for putting that on the schedule the way it is.

DR. SCHUELLER: I think that Fred is right that there needs to be a step back. My interpretation of what was going into a research track would be something like a new species, and so scamp is a new species to be assessed. Cobia isn't. Or, as John said already, a new data series comes online that's never been used and we're going to explore its use in multiple assessments, and those were the types of things that I thought were going through research tracks.

My understanding was that it was going to be used relatively sparingly and not that we're going to ramrod every species through a research track. That just doesn't seem logistically feasible, because my thought was that the research track was to allow for flexibility. For instance, you have that data workshop and you talk about all of the things you talk about, including stock ID, and then you figure out where to go from there.

You can't really have a schedule for that, and I know that makes it difficult under the rules that are set up for setting up meetings and such, but it does allow for the science to guide the decision-making process, and so, because it gives that flexibility, you want to use it sparingly, or you will never get anything done. Now, all of a sudden, cobia is in the line and other species are in the line, and, to me, it seems like maybe the group needs to step back and say, okay, what are we really using this for before we ever get off the start line.

DR. REICHERT: I've got a question. Was it your understanding that that research track was -- In addition to that research track, we also would have standard and benchmark and update assessments? Because it was always my understanding that the research track was ultimately going to replace the benchmark. Then I'm not entirely -- I don't quite understand how only new species or new methods would be part of that research track, because there's a whole bunch of other species that we are now running through with benchmark because significant changes have happened in a number of issues within that species that justifies elevating it to a benchmark, and so where would those stocks end up?

DR. SCHUELLER: My interpretation, and maybe I am misremembering, but the presentation that was given from -- I think Erik gave it from the Science Center, but it had research track taking over benchmark, and so no more benchmarks. Then standards and updates becoming operational, and so -- In my opinion, we put things through a benchmark more often than we probably should currently, and so maybe we're just renaming things. I don't know, but there is certainly not clarity, even amongst this group, who has seen the same presentation, about what these different options are.

MR. CARMICHAEL: I think the idea that -- It's a big question, to me, of whether or not research track replaces benchmark or research track is in addition to benchmark, as a way of doing the quantum leaps, as Fred has mentioned, and I agree that you can't schedule that kind of work. From someone who has to deal with the logistics of SEDAR, there is a lot of appeal to having something that can be freeform and open-ended that does that.

Then, once it has worked out the way that you can do the assessments, you have better ways of getting that in, and, in some cases, maybe a benchmark, if it's a first-time assessment or we have really a lot of concerns as to how we're going to assess that assessment and what the stock ID is going to be, because that is the stocks that lay ahead of us that haven't been assessed. We have a lot of challenges. They're not straightforward to assess. That's why they haven't been assessed.

I can see a lot of value to a research track that followed that path. Then, once they had worked out that this looks like how we can do it, to then go into something that's a lot like our benchmark, but it could be vastly more efficient, I believe, because you would have addressed a lot of those questions and you would know a lot more about your data and that sort of thing.

I see that as maybe a way out of the darkness, in terms of making this work, but the way it has been presented is correct. It's been viewed, at least to this point, that the research track replaces the benchmarks and the benchmarks go away, and maybe that's something that we should rethink.

MS. LANGE: I guess, to me, the research, as Amy said, is something totally different. When you've got something totally new, either a new species or some new set of data, looking at an ecosystem model or something like that for a group of species, where totally new, innovative things can be addressed and not having a timeline for immediate assessment advice, management advice.

The maintaining the benchmarks, as Fred said, in the Northeast, most of the assessments are benchmarks, or I think that's what he said anyway, and I guess, to me, it's two separate things. Having a detailed full assessment, as a benchmark currently is, I think is different than what I would consider a research track, where you're pulling in all kinds of new things. The benchmarks can be done relatively quickly. Not quickly, but it's not involving new analyses. It may be a new model or something, but it's not something totally different for that species.

DR. REICHERT: You mean benchmarks?

MS. LANGE: The standard ones. I'm sorry. To me, there is a difference between the benchmark and the research, and I don't think that one should be substituting the other. I think research, again, is like above a benchmark and totally more or a rare event.

DR. REICHERT: I would like to turn it around. Rather than trying to explain what we all think and what our understanding is of the process, let's see -- I think it's more productive to say what would we like to see in the process.

DR. BARBIERI: Erik might have that information already, but, if there is an action committee or group within the Science Center already working on this, perhaps they can provide whatever draft documentation they have developed. If there isn't one, my recommendation is that the Center would stand up a little committee or a sub-committee composed of assessment scientists from the Center that would be working to kind of lay out what they see, from their perspective as assessment scientists, knowing of the requirements that they have to address in terms of council needs and resources available and all of that, to give something that we can perhaps review.

Erik gave that presentation, but that was in the very early stages, I believe, and it would be nice to have something a bit more fleshed out. I can tell you that the Gulf SSC has had these same types

of concerns with the research track and has asked for this very document to be put together, because then, instead of discussing all of our own individual preferences on what this should be, we can comment on an existing document that the Science Center or the assessment teams or the sub-committee can put together.

MR. CARMICHAEL: There is a group working on that, and hopefully we will have something more to share by the time of the Steering Committee. If we do, we will pass it on to everybody.

DR. SERCHUK: I think the one area that actually you can save a lot of time on is, if you already have benchmark assessments, you can go immediately to operational assessments. There is no need to wait for this process, because there is no difference between essentially a benchmark assessment and a research track assessment.

You could make your standard assessments or your updates into operational assessments. You could take that today and bring that to the assessment scientists and say, look, we're going to allow you to run the updates with whatever new data has happened since the last time, using the model, and have that person go to a small meeting, a small meeting of two SSC members and some interested people, or you might have five operational assessments done at that time and then have that vetted. That's essentially the way it -- It gets the blessing from this operational assessment committee that is composed of SSC Chairs or individuals. John Boreman can speak more to it, and they do it.

You don't spend a year going through data updates and stuff like that. That would be the real savings, from my point of view. We can talk ad infinitum whether it's a research track or a benchmark, but if you believe that that's going to set the bar, then all you expect of your assessment scientists into updating the assessment is provide any new survey data, any new information from the fishery, in terms of size composition or age composition, and run the existing model and bring that to a small group. That would save enormous amounts of time.

DR. SHAROV: On the research stock assessment, the research track, it seems like everybody understands what it should be, but we are kind of struggling with the definition, but I kind of disagree that it should be outlined in large detail, because there could be a large number of details that you cannot think of right away, and I think that the initial description of it is pretty sufficient that it should be applied in cases where a new model hypothesis or question needs to be answered about the stock or the population.

In my mind, certainly the need for a research track comes up when the current model structure, or modeling framework, fails to provide a coherent, consistent description of population dynamics when there is an inherent conflict between the data or the model that causes us to not believe in the outcome of the modeling exercise.

We all understand when that happens, and the public understands when that happens, and, at this point, it becomes clear that either a new modeling approach is required or an additional driving factor of population dynamics, such as changes in climate, changes in oceanography, that are totally not considered in a standard modeling framework, and that's what -- Essentially, that's when we decide that there is a need for a research framework. That is when we're not satisfied with the current modeling approach.

MR. CARMICHAEL: Under that type of framework -- To me, that sounds like there is room for a research track, as you have described it, as well as a benchmark for just the more normal, everyday, less quantum-leap-type updates, and maybe even some first-time assessments, perhaps.

DR. SHAROV: Certainly I think that the benchmark -- The benchmark currently encompasses sort of two different types. One is when you change the model. That is what usually requires a benchmark, but often it was simply a required timeframe. That is, you had a sufficient time, like five years at least, and sometimes the period is being selected to simply check on the status of the stock and see, again, if there are any inconsistencies in the previous assessment and the new one, but that part is what Fred was saying and many others were saying, that that part could be completely removed from the category of benchmark and become part of the operational assessment, and I think probably everybody would agree with that.

DR. SERCHUK: I have asked Mike -- I think this would be helpful to us, and I asked Mike whether he could put up that schedule of assessments in the Northeast. The reason I have asked him to put that up there is it illustrates sort of the diversity of assessment products that are coming out of the Northeast, and I think it may be helpful here to think about whether there is anything that's done in the Northeast that may be applicable here.

Anything that says scup or bluefish or surf clams, anything that is not defined otherwise, that's a benchmark. If we move it up a bit, you also see that we have assessment updates, and we also have data updates. The data updates are things that say what is the updated survey index and what is the updated catch, and they normally go to the SSC, and they are basically used -- Again, John can correct me if I'm wrong, but they're basically used to say are we on track? We set specifications, and is there anything in the survey index this year, relative to specifications that we implemented last year --

DR. REICHERT: Fred, can I -- How many of these species have a substantial recreational component?

DR. SERCHUK: A lot of them do. We have a lot of them that do, particularly in the Mid-Atlantic. We have butterfish and we have fluke, and there are a number of others that do. Not all of them do. What I am saying is we have these data updates that the assessment scientist is asked to come to the SSC meeting and give us the latest index, give us the latest catch. There is really no analytical work, but are we on track? Are there any signals here that indicate that our plan specifications are incorrect?

Then there are these assessment updates. The assessment update is turn the crank, and the assessment scientist comes to the meeting and says here is the latest information through the model. That is another product. Then we have these groups, as I mentioned before, of operational assessments. In the second half of this year, twenty of the groundfish assessments will be presented at one time, in one meeting, turning the crank of the model, and out of that will come whether we accept these assessments or not.

MR. CARMICHAEL: So is the goal that every stock gets either -- Within the course of the year, it gets a benchmark or an update, and, if not, they get a data update?

DR. SERCHUK: No, this schedule is decided by the Northeast Regional Coordinating Council. John, did you want to answer that?

DR. BOREMAN: For the Mid, yes. For the Mid, the council would like either a data update, an assessment update, or a benchmark for every managed species every year, one of the three.

DR. REICHERT: How many managed species are there?

DR. BOREMAN: Fourteen.

DR. REICHERT: Fourteen? How many are there in the Northeast?

DR. SERCHUK: In the Northeast, there is about fifty species total, fifty stocks.

MR. CARMICHAEL: But, before we throw the baby out with the bathwater with regard to the South Atlantic, we have assessed thirteen stocks that represents 80 percent of our snapper grouper fishery landings, and so does the data updates get at you all's rumble strips?

DR. BOREMAN: That is basically what they are. If you look up there, you see research topic, retrospective patterns, and then, in 2017, you see cod stock structure, and those are basically looking for peer review, but those are, I believe, what we're calling now the research tracks. My idea of a research track is a little different than everybody else's.

To me, the original idea of a research track was to grab a stock assessment scientist and pull them off the treadmill for a while and get them out of being forced to do their thinking within a certain period of time and to tackle a particular scientific problem and not the entire assessment, but just a problem that is hindering an assessment, a bottleneck in an assessment, and attack that like we see here with retrospective patterns. Every assessment has that problem, but just to grab a handle on that. It reminds me of the old Jewish proverb of sleep faster because we need the pillows. We don't want to stay in that mode.

We would like the assessment scientists also to have an opportunity to go out and do some research, publish some papers, and not be bound by you have to get this research or this thinking done by January of 2018 or you get a bad mark on your performance plan. It's not turning the crank, but it's just allowing a separate track away from the timelines of assessments, away from the management timeline, to really do some deep, hard thinking about some of these bottlenecks that are killing us on the assessments, and one is stock structure and retrospective patterns and how to calibrate MRIP or whatever.

MR. CARMICHAEL: To what extent do they kind of pre-schedule the amount of time they have to be off the treadmill, and are they able to at all? Is it a year or do they give them eighteen months or two years or --

DR. BOREMAN: Yes, that's the fire drill that the Population Dynamics Branch Chief has to deal with. It's tough to pull people off when you've got all of these deadlines looming, but managing staff so that you can guarantee staff that a certain percentage of their time each is going to be -- They're going to be allowed to do some independent research, and that would work towards these

research tracks and get them off the treadmill of cranking out assessments, whatever they are, or data updates.

DR. SHAROV: I would totally agree with John. The only thing is that what he is talking about is pure research. This is a research track assessment, and that's the only difference.

DR. REICHERT: I agree, and I think that's why in our last meeting, or the meeting before, we actually recommended to take the assessment out of that name, because it's not an assessment, because we are not providing a true stock status.

DR. BARBIERI: Sure, it's different, but I was thinking about what Amy said earlier, in terms of them being used sporadically as a problem-solving type of thing. As you go through a process, and it could be like what we just saw with black grouper. It's like, okay, do we have enough data to -- What do we have enough data for? What types of models exist out there? Are the data inputs all available to be able to go forward with whatever or do we have to develop some additional methodological approach to deal with this or retrospectives or some other issue that could come up, but something that would be fairly rarely used, in a way, relative to the number of operational ones that have to be providing catch advice to the council.

DR. REICHERT: I want to go back to you, Fred. Other than some of the things that Mike has tried to capture, you said maybe there is lessons learned, and so what are some of the important lessons learned that we could probably use, in terms of our recommendations to this process?

DR. SERCHUK: One of the lessons learned, unfortunately, is that the Northeast hasn't really been able to implement a research track process. There are processes here that say cod, stock ID, or others, and those will probably be done, but they're not called a research track, but, essentially, they get at the essence of what a research track would do.

John also talked about giving assessment scientists sufficient time to do the research to improve their assessments or improve the inputs to their assessments. John well knows, and others in the Service know, that there are peer reviews done every year of different programs in the Centers. Some focus on protected species and some focus on ecosystem research. We have had one, several years ago, on assessments. One was on the collection of data and another was on assessments, and those were done by CIE-type people. They're also done by other managers coming in.

In the Northeast, one of the recommendations was that you guys do a lot of assessments, but you are falling behind on doing modeling work. You used to be at the forefront of modeling work, and now you're taking models from other places as well, and what we think we would recommend, and one of the recommendations was, assessment people need to spend 20 percent of their time doing research. That never happens, but the fact is that the peer review said that that's an investment that you should be making. Otherwise, you're going to be pennywise and pound foolish, because you're just going to try to get the most out of your data and information, but you're not going to be able to put it in the proper context.

I think every research facility has the same problem, that they're dealing with applied research, as opposed to doing some of the basic research that make the applied research better, and so I am happy to see things like stock ID up there. I am happy to see things that get a multispecies sort of stuff, because those are the forcing functions that when you go to a SEDAR committee or you go

to an NRCC saying, look, we have to make some tradeoffs here. If you want this thing to be done on stock ID, you're going to have to give up an assessment year, or you're going to have to give up something over here, because there is no free lunch.

I think that's part of the process that says, wait, the Centers have limitations, the management has needs, and how can we balance all of these different things, and so I think the research track -- Whether you call it a research track or you call it a stock ID workshop or you call it a new model exercise, but something has to give on the other end, because these require a lot of work. For example, when I see things here like, well, we have a stock ID problem in this species and a stock ID problem in that species, I am thinking to myself, where are the economies of scale here?

Why don't we have a workshop that maybe looks at two or three stock ID issues, because you're really dealing with the same types of data, in many cases. You can be looking at genetics data, or you can be looking at tagging data, or you can be looking at meristics data, or you can look at distributions, but we wouldn't we be better served by not doing these one-offs, but by doing these sort of themed type of things? I think that's another lesson that I think might be useful here in the South Atlantic. If we're thinking that there are certain things that could be done together in an initiative, that might be useful.

DR. REICHERT: As John mentioned earlier, that is what this framework is for also and not just to tackle species, but to tackle issues or a number of species that have the same issue. Alexei, before I get to you and Scott, what I heard you say earlier was that part of the reason why this research track never got off the ground in the Northeast was because of the management reality or the political reality, in terms of the management needs, and that was a large factor in that?

DR. SERCHUK: Part of the issue is that as soon as a research track would be concluded, and let's say it's a research track on implementation of a new assessment model, and that's the one that I think would cause the issues, and it came out and said there was a significant change in the status of the stock, there would generally be a very quick request from one of the management authorities, because the research track would have been done on old data, to use that new model within the next six months, to update it, because that would change the tenor of the specifications process markedly.

In that sense, it wouldn't be very much different from a benchmark, because a benchmark basically does it all on one type. It says we used a new model, we think this is a new model, and we used new data sources, and we present the assessment. From that, immediately, goes management advice on the status of the stock, and it would be used for specifications.

In that sense, I think it can be an illusion to think that you're going to be buffered from using research track assessments, particularly when there is a new model, and be out of the specifications process for long. They're going to take that new, approved model from the research track and quickly put that into the management system, as far as status of stock and advice. That's what I meant, Chair.

DR. CROSSON: I just want to observe that, when you're talking about a number of products that you want provided and an insufficient number of suppliers, and the consumers tend to want the most labor-intensive version of the product, whenever given the option, and you've got several different consumers competing for the attention of the suppliers, the normal answer for this is that

you need some sort of pricing structure to sort this thing out, where the highest quality version of the product would cost a certain amount of credits, and then then next lowest would cost less, and that the consumers would have the ability to store or trade these credits with one another, and that's all I have to add.

DR. SERCHUK: Just may I respond to that, Chair? Paul Rago, who is the leader of the pop dy group, basically said, yes, here's how we're going to do that. We're going to give you a million dollars' worth of our services, but once you use it up, you're done. He tried to use the same model that you just talked about, Scott, putting a valuation on the time and resources that could be provided by the Center, and guess what? Nobody accepted it. One of the things is, if you can get it for free, why pay for it?

DR. SHAROV: Again, I agree with what Fred said, as well as John, but there is a clear distinction here. One is how the Fisheries Science Centers will operate, and obviously nobody -- Everybody would say, yes, it's wonderful if they could have 20 percent of their time or 40 percent of their time to do research and let the Congress issue a separate law to require them to do so, but, nonetheless, I don't think we can prescribe to the National Marine Fisheries Service and NOAA Fisheries how to do this, but we are serving the council.

The council is the customer, and the customer requires management advice and assessment of the status of the stock, and that is what we're trying to address here, is that, with the presentation that Dr. Williams presented to us, I think last October, it's essentially the proposed way of making the process much more efficient, and although I would agree that, yes, certainly, as many have said here, that the operational track would be essentially a separate research topic, which is, of course, research topics and stock assessment population dynamics are important and required, but, nonetheless, I see this primarily still as the assessment, and I disagree with the suggestion of removing the word "assessment" from "research track assessment".

I think that's what -- From the perspective of the customer, the council, what's important is to make progress on assessing the status of the stock, which is of interest to the council, because they are required to manage it.

DR. REICHERT: Yes, but I believe we agreed to remove that, because that's the research track -- The result of a research track does not result in management recommendations, and so that came out of the operational. It may be semantics, but that's why we removed the "assessment", the word "assessment", because that's the general understanding, that, if you do an assessment, management advice will be the result of that assessment, which is not necessarily the case in the research track. Does that clarify it? Was that the right understanding?

MR. CARMICHAEL: Clear as mud. I think some of that gets down to whether the research track replaces the benchmark as we have it or whether the research track is in addition to the benchmark that we have, and I think that's a decision that the Steering Committee is going to have to come to grips with, and I think the workgroup at the Center that's hoping to have some things for the Steering Committee maybe will be considering it, since some of those folks are here.

DR. BARBIERI: Mr. Chairman, very briefly, I think that that one bullet there could be captured, in terms of that issue, and I think Amy brought it up earlier, and John brought it up, and Fred too, what may or may not happen in the Northeast, but it would be captured as whether we wanted to

have a replacement for a benchmark or not, but, going much beyond that, there are a few, I think, bullet points that we can present or offer to the Steering Committee as points that the committee has questions about, but any further, more significant, I guess, recommendations, I think we're going to have to review some kind of more solid documentation.

DR. REICHERT: John, I skipped you. You had your hand up earlier.

DR. BOREMAN: Fred covered what I was going to say with Paul Rago's assessment credits, as they called them.

MR. CARMICHAEL: One of the things with SEDAR that is different than the Northeast is SEDAR is a council-oriented process, and that immediately makes some challenges to the expectations of a council process versus the Science Center, and the Science Center is more able to pursue a research-type process, and that's one of the reasons why I think this idea of research track is existing as an accompaniment to what we do now, is it may be a good way to go, because it gets SEDAR out of this research business, which is a very troublesome place for us to be in as a council-driven process, and that's where we do differ from the SARC and the Northeast process.

DR. REICHERT: Thank you. Depending on the discussions at the SEDAR Steering Committee meeting and the documentation that we receive, we will send out an email to the committee to see where we want to take this, in terms of either postponing the discussion until or -- Resuming the discussion in October or potentially have a webinar, if there is a timing issue. The last point here on the SEDAR activities is the assessment priorities. Go ahead, Fred.

DR. SERCHUK: Sorry, Chair, but I just want to come back to the scamp and the cobia initiatives, because they are probably going to go forward irrespective of our discussions, and I am just wondering if they are going forward as -- I understand that the scamp one has something to do with stock ID, or at least stock ID will be a major component of it. I am unsure about cobia. I understand that there is a cobia assessment already, right? So I am not quite sure how long ago it was done, but are there other issues, apart from stock ID or distributional changes, I think is what was mentioned, that refer to cobia that we expect something different from cobia than we would from the scamp initiative? I am asking the question.

MR. CARMICHAEL: Cobia has had a lot of interesting developments since the last assessment. I think the terminal year on the last one was like 2012.

MS. BYRD: 2011.

MR. CARMICHAEL: 2011 was the terminal year, and so there's been a lot of water under the bridge. There has been a considerable increase in landings of cobia in the last few years from kind of the Chesapeake region, but I think even North Carolina, in terms of a few years back, and so there has been an increase in landings above and beyond what was seen at the time the assessment was done, and so the cause of that, how much that is increased effort versus how much is increased availability, isn't known.

Virginia is going down the path of mandatory reporting in the bay for cobia, which is going to bring an interesting new data source to look at. There has quite a bit of research into this stock ID issue and trying to better define cobia. It was recognized in the original assessment that the stock

ID recommendation was a compromise for an area where there was a very, very dark zone of where the line actually exists and also recognition though of multiple spawning units of cobia that are mixing out in the ocean, and so there's been a lot that has developed on cobia.

I think there's an expectation that things could be a bit different this time around and, honestly, the trajectory of the last assessment was toward SSB heading downward, and, if the recent landings are not the result of increased productivity, that could raise some concerns over the status changing of this stock, and so there's a lot of things at play in cobia.

DR. SERCHUK: Okay, but is there any modeling work that's been done that suggests that the model that might be used within the research track will be different from the model that was used in the last assessment?

MR. CARMICHAEL: Not so far that I'm aware, unless there is some attempt to try and be more spatially explicit with these different spawning units, but I don't know that we're there yet, either in terms of methods or the data that could allocate landings from a mixed stock out in the non-spawning times into those units, and so we may not be there yet.

DR. SERCHUK: Okay. Thank you.

DR. SHAROV: Just a quick follow-up. In my mind, the principle challenge on cobia, which may not be unique, but it's a very high uncertainty in the landings, and this is a primarily a recreational species with very high PSEs. Therefore, the estimates of the high landings are a concern, and one of the challenges is how to deal with it and how to incorporate the uncertainty in the MRIP estimates, considering that those MRIP estimates will change again, and that's probably one of the principle reasons for it.

DR. REICHERT: All right, John.

MR. CARMICHAEL: The last SEDAR topic is the stock priorities. If you will recall, we've been working on the NMFS stock assessment prioritization tool for quite a while. The council looked at it in December, looked at the results, and they wanted further details, which we went over with them in March. Mainly, they were interested in why some stocks seemed to rise to the top of the prioritization that were different than maybe had been in the long-term South Atlantic prioritization.

We kind of looked at that, to get a sense of what was going on, and one of the issues certainly that was at play was how much weight went to the stocks that had never been assessed before, and there seemed to be some that rose to the top as a surprise that were unassessed stocks, and that was carrying a lot of weight, in terms of the few metrics that actually had information of all the different things in that prioritization tool.

The council went through that and recommended some changes in the stocks that they have identified as what we call our primary and secondary species, and there is a list of these that we can look at in more detail when we get to the research plan topic, if you have any recommendations on what those stocks should actually be.

Generally, the primary stocks are ones for which an age-based type of assessment is desired, and the secondary ones are stocks for which some other type of quantitative assessment, perhaps a length-based and perhaps a production model, has been identified by the council.

There is a number of special stocks that have unique challenges. There are certainly things like goliath and speckled hind, ones that have been under long-term closures and ones that have other issues associated with them. Dolphin is one that is going to be moved into that category, because of the challenges associated with its stocks, since it is circling around the entire North Atlantic Ocean.

That is really the universe of stocks that the council is looking at with its mind to getting regular stock assessments prepared for, and many of those stocks have been assessed. There's a few that have not been, which those are the ones that are on the priority horizon to be assessed in the future, and so I think, overall, the council's priorities align pretty darned well with what comes out of that prioritization tool. In a few cases where things did not, they are looking at ways to maybe bring them better in alignment.

I suppose with the exception of how important it is to you to elevate the status of some of these stocks that have not been assessed, and that's something that I expect, as we consider overall assessment workloads and keeping things up to date, that we will have to address, and the research track is one way, hopefully, of getting some resources dedicated, maybe, to some of these stocks that are lower down in the rotation really that there are a lot of questions as to whether or not a successful assessment can be prepared.

Quite honestly, the reason a number of these stocks have had the can kicked down the road on them for so many years is the great uncertainty as to whether or not an assessment can be prepared for these stocks. Are we reaching too deep into the data?

I think any insight you guys have, when we go over the research plan, towards what the priority stocks are would be very helpful, and we've already talked about a number of the things, like the vermilion and the MRIP revisions, and we will have to work out what that means, in terms of Table 1, for our assessment projects, and I think, in particular, getting the MRIP revisions into there in 2018 may mean some consequences for other stocks that the South Atlantic had originally desired to have done in 2018.

DR. REICHERT: Thank you, John. I've got one question. Remind me why lane snapper was identified as a top priority.

MR. CARMICHAEL: Lane snapper came up as one that hadn't been assessed. We picked a suite of species based on landings and prevalence in landings and trying to reduce the number of stocks in some of the groupings that we have now, different species groupings that the council has in the Snapper Grouper FMP, and lane is one that was pulled out, and it rose up mainly because it hadn't been assessed before, and it has pretty decent landings.

DR. SERCHUK: Two comments, Chair. One of the difficulties in the scoring system, which we discussed last meeting, was one of the things that has weight is the number of years since the last assessment and whether it was ever assessed, and I think, intuitively, that makes sense.

Pragmatically, if there is no information being collected for fifteen years in the interval, you're not going to get anything, and so I think the research priorities is a good thing, the recommendations, but I think equally as important is what is the fate of the research recommendations? What is the fate of these research priorities, because that will also have to be triaged by either the amount of funds available, either to the councils to initiate work or the amount of funds available to the research institutes to take on that.

If you're talking about data collection, if you're talking about new initiatives, there is going to be some limitations on that, and so I think it's a good idea not only to put the research recommendations in, but I think it's really important to follow up in saying what is the fate of these research recommendations, and I was dumbstruck, quite frankly, and maybe it's because I am naïve, to see that, on dolphin, Mike Prager indicated that a couple of things needed to be done, in terms of a fishery-independent abundance survey and a stock structure ID, and, after sixteen years, we still don't have either of those two things. I am wondering how can we move forward with some of these things, even though we know it needs to be done, if it hasn't been done. Thank you.

DR. REICHERT: Thank you, Fred. Any other comments? In terms of the five bullet points, I actually can support all of those, in particular the white grunt assessment, as another species that we have been kicking down the street for a long, long time. As a reminder, the reason that that was not done was, again, a potential stock structure issue, which may require two assessments rather than one, and so that was one reason why that was moved down, and so I think it's important to assess that species, and so any other comments or concerns with the first five bullet points, in terms of our recommendations to the council?

DR. BARBIERI: No major concerns, but, about Bullets 3 and 4, as John explained what the secondary data collection species are, I think we need to put some thought into what are realistic expectations, in terms of getting quantitative assessments for some of these stocks. Having gone through the SEDAR 49, the data-limited application of the DLM toolkit process, and eight species were considered and basically one came out at the end, because, even for the toolkit application, really there wasn't enough information content there to come up with anything that was reliable.

It was really, I think, a reality check, and so, at one point, whenever that was, ten years ago, or maybe not that long, when we first started putting together our ABC control rule, our discussion of the point was that we're going to set up these tiers with the expectation that some of these species that fall under lower tiers would be moving eventually up, and, considering the lift that this represents, in terms of investment of resources, and when we look at the volume of landings and importance to the council in managing fisheries that are the most relevant, really, to the system, this is something that I think we need to do some self-evaluation and work progressively with the council.

For some of those, we're going to have to basically stick with data-poor methodologies, because I can't see, in the foreseeable future, us being able to do much more. When you look at some of the species for which theoretically we have a fair amount of biological data being collected, and, of course, as we go through the assessments, we realize there's not really as much as we first would expect.

I am just kind of pausing here a bit to kind of present this as more of like a philosophical thought process for us to start thinking, at some point, to get to the point that, perhaps in discussion of our

ABC control rule application and all of that, to get to the point where we realize that we need to see what those resources, like Scott presented, or how much do we have to play with and how much can we invest into all these different stocks to be able to come up with something at the end.

DR. REICHERT: I agree with you, and, of course, as we all know, methods are being developed, and so stocks that may be difficult to assess, or were difficult to assess in the past, are now maybe methods that you could potentially use to approach that. The other thing, I think, speaks to what Fred said earlier. At some point, we have to realize that, yes, we can continue to put that in our research recommendations, but the reality is that we will probably never get there, unless there is an unlimited amount of funding, which is unrealistic.

In that respect, I think the SSC also has a role in terms of advising the council of what would be some realistic or what may be unrealistic goals, in terms of where we are going with certain stocks, and so I think we have a role also in pointing that out, and where do we get the best bang for our buck. I think we've done it in the past in species, for instance, that are bycatch species. We will never have enough information to do a full-blown stock assessment for those species, but do we need to?

MR. CARMICHAEL: Luiz, along those lines, do you think a long-term priority, the SEDAR horizon being now about 2021, would be perhaps a SEDAR effort directed toward those secondary species, much as the Gulf did the data-limited, to try and figure out what's realistic for those different species and what that really means to be a secondary species?

DR. BARBIERI: John, I think, as an SSC, we have recommended that in the past, correct, to -- For instance, in the forum of assigning a slot to certain species.

MR. CARMICHAEL: You have recommended -- Yes, you have, as data-limited species, but we never really described what data-limited species meant. It may carry some more weight looking ahead to this group of species, and I think it carries more weight now that those methods are advancing further. I guess that's the explanation of what may have changed now versus the past.

DR. BARBIERI: Mr. Chairman, just to John's point, yes, I think that that was a very valid exercise, because you have to go through all the data. You have to see what indices are available and landings data. Almaco jack, lesser amberjack, and greater amberjack, it's just very, very confusing, when you go through the landings information, and so it's basically suggesting some formal application of some of those processes to start sorting out what sticks and what doesn't, so we can start providing some recommendations to those in terms of those tiers.

DR. REICHERT: All right. Anyone else? John, is that all you have for us?

MR. CARMICHAEL: Is that not enough for you?

DR. REICHERT: I think it is. Any other things that you need to know from us, in terms of the SEDAR activities? I think that's it and that completes that agenda item. It is 5:10. I would like to at least get through Agenda Item 5, Update on the Southeast Fisheries Science Center Research Efforts. We have asked Erik if he would be willing to provide us an update on some of the research efforts that are --

DR. SCHUELLER: One of the action items here says which of the 2018 -- Right below that, the 2018 assessments should be delayed to accommodate MRIP revisions, did we talk about that?

DR. REICHERT: We talked a little bit about that in our earlier conversations, and I believe the consensus was, right now, not to do that, unless I have misinterpreted our discussion.

DR. SCHUELLER: So, for this table that's up here, the MRIP revisions is bumped, just completely off the table, and is that what we're saying or it moved to 2018?

DR. REICHERT: Do you mean because that was an item on earlier schedules?

DR. SCHUELLER: So that just gets bumped completely from the schedule and it doesn't get moved to 2018 and then we're supposed to bump something from 2018 and is that --

DR. REICHERT: John, is this still the schedule, because the schedule for the MRIP revisions isn't known at this time?

MR. CARMICHAEL: I tried to get away.

DR. REICHERT: Sorry. Thanks for reminding us that we hadn't covered that.

MR. CARMICHAEL: This is the schedule that is on the books right now, and it's the schedule that the Steering Committee will be having to decide how to revise next Friday, and so, yes, the MRIP revisions is currently scheduled for 2018, but they need to consider moving those into 2018 from 2017, and so some of those things in 2018 may have to be shifted back.

A lot of that will depend on what advice the Science Center gives, in terms of how many resources they think it's going to take to do MRIP revisions and what happens with scamp and cobia with regard to research tracks and when those actually get started, based on the outstanding and helpful discussion we had here today about framing the research track, as well as what happens with king mackerel, which has a number of question marks about it as well.

I think there is a lot of things, a lot of balls, in the air for the 2018 schedule, but if you guys have a sense of some other things, beyond those few I mentioned, that might be considered, in terms of trying to get the research track, the revision assessments, in there, I think it would be appreciated.

DR. REICHERT: Okay, and so the question, and, again, I apologize that I forgot about this action item. If the MRIP revisions -- That is not going to happen in 2017, and we know that already, and so what's going to happen with that slot?

MR. CARMICHAEL: I don't know. The council, as we'll talk about with tilefish, the council has asked that the Center look at doing a standard assessment of tilefish, and the response is that it's just really not able to do that right now in 2017, but maybe doing something on tilefish comes in there or something else, but we really don't know at this point. I think, until we hear more from the Science Center about what can be done, we don't know. Perhaps a stock ID workshop comes back on the table, given all of these other changes, but, at this point, I really don't know.

DR. SCHUELLER: It doesn't sound like we can necessarily provide a recommendation, based on that, and that's fine. I just wanted to make sure we didn't miss something in our action items.

DR. REICHERT: Yes, and I agree. I think a lot will depend on the Steering Committee discussions next week, because that schedule may actually change based on those decisions.

MR. CARMICHAEL: I think the council may want to say keep amberjack as a priority over porgy, simply because it's quite a bit older than porgy, but amberjack is a big recreational fish, and so we don't want to do amberjack until we have the revised MRIP data available to do it.

DR. REICHERT: Yes, and, in red porgy, we're still waiting for the age validation study. That was an issue with red porgy. Anyone? Again, sorry that I missed that last action item there. We thought it was a good idea to ask Erik, if he was willing, to provide an update on the Southeast Fisheries Science research, in particular that research that was relevant for SSC discussions, and Erik said that that was actually a very good idea, and so I'm happy that he is joining us, and so Erik.

5. SEFSC RESEARCH UPDATE

DR. WILLIAMS: Thank you, committee. I'm Erik Williams. As Marcel just said, I was asked mostly to sort of update you on research that is more bent towards stock assessments, and so there is nowhere near an exhaustive list of research that is going on at the Beaufort Lab, but this is stuff that's probably most relevant to stock assessment.

One of the first projects I will mention is we've got funding from ACCSP to support a post doc who is going to be examining sampling strategy evaluations for a suite of snapper grouper species. You may recall that Katie Siegfried, myself, Kyle, and some others had a paper in the *Canadian Journal* a couple of years ago that was sort of an overall look at sampling strategy evaluation for sort of a generalized snapper grouper species, and basically the conclusions of that suggested that our biggest bang for the buck in investments of future data collection were going to be with age data collection and improving indices.

Now we're going to take that sort of analysis to the next step and actually look at specific species and look at the overall sampling design that we use to collect data for those species and then do sort of an evaluation of where can we tweak sampling. Do we need to boost our commercial sampling specifically or our recreational sampling and see where the bang for the buck is with respect to specific species?

We just hired a post doc this year, starting in -- I think he started in February, and so we're still in the infancy stages of that research. The next item to note is -- Stop me if anybody has any questions about any of these. I will just roll through. I saved the best for last, which I am hoping to get some input from the committee, but I will get to that when I get there.

The next one is Kyle and I are involved in a national model comparison study that you may not be aware of, where we're actually comparing BAM, Stock Synthesis 3, ASAP, and AMAK. AMAK, for those not familiar with it, is the Alaska model that's used. We are basically testing these models with similar data.

We are using the models to generate data and then swapping the data among the models, basically to see how they compare, using the same datasets. That is kind of midway through that. I don't know when we're going to complete it. We are having some stalls, because, as you can imagine, we are involving staff from Alaska, the Northeast, the Southeast, and they're all tied up at various stages of their assessment processes, and so their commitment or engagement into the process starts to wax and wane, and so we kind of move along in sputters and spurts, but I expect we will have results from that soon. I won't make any promises about timeline.

DR. SHAROV: Is the focus on trying this suite of models on different species, like applying them to different regions, but you mentioned the simulation datasets as well, and so how will that --

DR. WILLIAMS: It's mostly simulation data, and so we took each model and we generated data using that model based on loosely on a species of choice, and so each region chose a species they wanted to maybe tweak a little and generate data from that, and then we swap that data among all the models and then refit, and so that's sort of the idea.

Then where we're headed with this is to then start to look at -- Once we identify some of the differences and try to understand why some of the models might be coming out with differences, although some of the preliminary results, as you would suspect, are showing very similar results, because they're basically all forward-projecting age-structured models, but then to look at incorporating different sources of bias and uncertainty into the data and then see how each of the model constructs handles various configurations of uncertainty or bias, and so that's where we're headed with it.

DR. SHAROV: Quickly, how it different from the --

DR. WILLIAMS: It's very similar. It's based essentially on that, but we're just focused on those models specifically. The next research topic is that there is continuing work that's been going on for a while on N-mixture modeling for index analysis, and this is spawning directly out of sort of the SEFIS data and the MARMAP data and trying to find a method that would combine both the trap and video gear into a single index in a single analysis, and so one of the modeling methods that is being looked at is using N-mixture models.

Don't ask me about the details of those models. I am not familiar enough with them, but I do know enough that one of the issues with that is it requires a tremendous amount of competing time, and so to fit just one of these models right now is taking on the order of days of computation. Maybe there is some cloud computing that can be done to speed that up.

DR. REICHERT: Erik, I know the SEFIS group is looking at measuring length on the videos, and do you know --

DR. WILLIAMS: Yes, and I don't have much of an update on where they are with that. The first step is they've got to get stereo cameras down there and there is work on that, but that's at the very, very infant stage, I would say, and so that's probably why it didn't make this list. The next one is we have some folks looking into the evaluation of data-poor methods, although data-poor methods is kind of a bad name, but data methods that deal with sparse data.

We are using the DLM toolbox. One of the ideas that we have in mind is to basically take data from our data-rich assessments and then, based on that, run them through the DLM toolbox to see what kind of results we get from that and compare that to the data-rich assessment to see which methods perform the best, with best being judged by how they match up with the data-rich assessment.

DR. BOREMAN: Just a note on that. The Wilberg and Widman group basically did that with summer flounder.

DR. WILLIAMS: Right.

DR. BOREMAN: To test it out, and so they just got their paper published a few months ago.

DR. WILLIAMS: Yes, and I think that group is familiar with that work.

DR. GRIMES: Does that include Shannon Calay and her group down there in Miami that have done all these catch-based modeling or catch-based estimates for assessing status of stock with Islope and -- Does any of that sound familiar, and is that part of it?

DR. WILLIAMS: Some of the catch-based methods are in -- Basically, they are focusing primarily on this DLM toolbox, and it includes some of those catch-based methods in it. It's a catch-all toolbox that includes -- I forget, but it's like sixty-some methods.

DR. GRIMES: Yes, I am familiar with that.

DR. WILLIAMS: Any other questions on that? Okay. Good. I'm glad you guys are asking lots of questions. The next project is, and Amy can speak more to this, is sort of a simulation of spatial modeling and stock assessments, and I think it's mostly simulated data. Is that correct, Amy?

DR. SCHUELLER: Yes, it's a simulation study looking at questions related to spatial complexities and populations, and so, if you have these types of scenarios, what are the impacts on the outcomes for management? Say you make your boundary and it's in the wrong spot, and how biased and how bad is it going to be or not, and so it's a group of us. There is someone from each Science Center except the Southwest working on this. We're meeting next week, actually. I would be happy to chat about it with anybody who is interested.

DR. REICHERT: Amy, this is a simulation model. Do we have any species that may have enough data to kind of take a look at that?

DR. SCHUELLER: We have some case studies, and so some like species, and so sablefish in Alaska, Pacific hake in the Northwest, Atlantic menhaden, which I work on menhaden, which is why, but the thought is that this should be generally relevant to other types of species as well, and so we're trying to answer a broad spectrum of questions with this project.

DR. REICHERT: The reason I am asking is because maybe, at this point, steps could be taken to collect sufficient data to be useful for that approach in a couple of years, because it takes a while to get that going.

DR. SCHUELLER: One of the questions that we're hoping to address through the project is how much data do you need, and so, if you have this level of data or this level of data, can you get similar answers or not? If not, why and what are the biases? We have some models that don't have tagging data and then one that is integrating tagging data, and so there is a spectrum.

DR. REICHERT: Thank you.

DR. ERRIGO: That actually partially answers my question. I was wondering if you're using different modeling frameworks or are they all age-based models or that kind of thing.

DR. SCHUELLER: Right now, they're all age-based models, and so we're talking about, obviously, data-rich-type species.

DR. WILLIAMS: The next topic to update you on is, and this is mostly age validation, which has some bearing on assessments, but I just thought that I would note that we are in the second year, and sort of the last part of the second year, of a study to do some age validation work on gray triggerfish and red porgy, and so these are captive-held fish that have been marked with calcine, and I think the plan is to sacrifice them at the end of this summer and get the results then from that study, which will hopefully be out this fall, and so that's the progress on that one.

Then the last one is one that comes up with respect to red snapper, and it's at really kind of at the idea stage, but it's a topic that Kyle, myself, and Katie Siegfried are working on pretty vigorously right now, actually. That is looking at using the assessments to project out future index points with the catchability estimate that comes out of the assessment and then use the observed data as it comes in from an index and how can we use that to track basically management effectiveness. Is the data tracking with what our projections said it should be doing or is it above or is it below? How far is it above or below, which then gets into probability statements, which is probably the way we're thinking that this would be presented to managers, is there is X probability that you are below the track or there is X probability that you're above the track. Hopefully that can then be used for management.

It's not going to get you to an ABC, obviously, but it will give you -- It's like a rumble strip, but maybe one step beyond that, because we're actually using the projection from the assessment and then comparing the observed data to that projection. That is an idea that, if anybody has any thoughts on that, from any aspect of it, in terms of how we would present the results of that in a way that would be useful for managers, to how we might even do the analysis, because we're still -- We're thinking about how to properly characterize the uncertainty, which is going to be key for this, and we don't want to overestimate the uncertainty, which there might be a tendency to do that with this kind of analysis, but, at the same time, capture all of the important sources of uncertainty.

This might be a way to get us out of this conundrum with red snapper that we're in, which is that we're down to a discard fishery, and it's discards primarily from MRIP, which are probably their least best estimated source of data, and so the effectiveness of our ability to track the discards is not so good then, and so this might be a way to either supplement it or even dive right into this sort of method for tracking red snapper and its progress.

DR. REICHERT: Thank you, Erik. Any questions or remarks?

DR. BOREMAN: In the Northeast, we are sort of doing similar type work like your last bullet there, we meaning the SSC with the Center, trying to come up with a way that we can come up with a consistent way to estimate CVs for OFLs, and looking at the same thing. Probably the best way to do it is to look at the projected OFLs and then see what really happened and give you an idea of the variability to come up with a better coefficient of variation, but we're looking at the same type -- We're kind of zeroing in on the same type of methodology that you're using here.

DR. REICHERT: Thank you. I had a question. Last time, you mentioned the field of likelihood estimators was very active, and is that something that you guys have been looking into further?

DR. WILLIAMS: We have not. We have actually been in touch with Chris Francis, and we're sort of left with the most recent papers that came out is kind of where the state of the science has left off, and Chris was kind of interested in working with us, but, the more we thought about it, trying to set up a sort of simulation study to test those models is a lot more difficult than it seems, because we actually need to understand the actual error structures that we deal with in our region, but we don't know that, and so things like bias and autocorrelation, we don't know what they are, and so we would be making guesses at that.

Then we started to realize the utility then of the conclusions might not be that good if we can't nail down what the actual error structures are that we tend to see in our region, and we suspect those error structures may be regionally different, because it's partly based on the fisheries themselves and also on the data collection processes, in terms of what kind of correlation it might create or what kind of bias that it might create, and so it could be region-specific, and we kind of let that one go for now, until we --

DR. REICHERT: So the method that was used in red grouper, the Dirichlet, that is what you foresee using in the upcoming stock assessments in the foreseeable future?

DR. WILLIAMS: Yes, that's kind of our conclusion, that that seems to be the state of the art for now, yes, but with the caveat that even the paper that has sort of purported this as the best method agrees that more research needs to be done on it, and that's kind of where we're left, is somebody in the field needs to come up with a good way to test these different likelihood components, and the tricky part is, however you design that simulation study, if it's not designed to match the data that you actually are fitting to, you are going to bias it right upfront by choosing whatever error structure you do, and so that's the tricky part.

DR. REICHERT: Thank you, Erik. Anyone else have comments or questions? Thanks, Erik. I think this was very useful, and I hope you will be telling us about some of the outcomes of some of these research projects in the future, and so thanks. We appreciate it.

DR. WILLIAMS: Thank you.

6. UPDATE ON NATIONAL SSC EFFORTS

DR. REICHERT: It is 5:30. What I would like to do is there a couple of agenda items that are really brief that I would like to knock out. Also, Mike will send -- I promised earlier that we would go through some of the bullet points in our report, and Mike will send out the notes and the bullet

points from our previous agenda item, the SEDAR updates, to all of you. Please take a look at that and send us any additions or corrections or thoughts that you think we have missed. Then we can potentially look at that -- We can look at that later on in the meeting, and so, as I said, I hope we get at least a rough draft of the report out before we leave.

What I would like to do is update the committee on the National SSC efforts, and that is Agenda Item 14. Real brief, the decision was made that the meeting will be in San Diego on January 17 through 19 in 2018, early next year. The theme of the meeting is management evaluation relative to harvest control rules and model uncertainty and harvest control rules and maximum sustainable yield under a changing environmental condition.

There is a strawman agenda and a list of potential speakers. We have a conference calls. John, Luiz, George and I, and Mike and John are generally on those calls, and there will be a number of other calls the rest of the year. That is an update. We will probably talk a little more about that at our October meeting. Luiz or John, any essential other updates on that? Okay. I think, with that, I suggest we recess until tomorrow, and we will be back here at 8:30. We will move to the Agenda Item 6, Tilefish. Thank you.

(Whereupon, the meeting recessed on April 25, 2017.)

- - -

APRIL 26, 2017

WEDNESDAY MORNING SESSION

- - -

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn, Charleston, South Carolina, April 26, 2017, and was called to order at 8:30 o'clock a.m. by Chairman Marcel Reichert.

DR. REICHERT: Good morning, everyone. I would like to get started. We have a full agenda today. Mike was checking if there is some SSC members on the webinar, and I don't believe that's the case right now. I have a question. What I would like to do is move the agenda around just a little bit and start today with red grouper and then move to tilefish and do the ABC control rule after that. I just want to make sure that there aren't any objections to that.

With that, we move to Agenda Item 7, the Red Grouper Assessment Review. I want to remind you that John, Fred, and Eric were panel members for the assessment, and I have asked Rob and Tracy to be part of the group who pays special attention and helps us write the report.

The relevant attachments are Attachment 11, 12, 13, and 14. The action items are, I think, pretty standard for assessments, and there is a list of them, and so I suggest that I won't go over all of them now and we will discuss those when we get there. Dr. Kyle Shertzer from the Science Center has a presentation of the assessment overview. Thanks for joining us, Kyle, and take it away.

7. SEDAR 53 RED GROUPER ASSESSMENT REVIEW

DR. SHERTZER: My pleasure. This is SEDAR 53, and this was a standard assessment of grouper. This is an outline of the presentation. I will start with some background and then review the data sources that we reviewed for the assessment, including any updates or modifications since SEDAR 19 that were applied for SEDAR 53, and then a bit on the assessment methods and results, including updates and modifications since the SEDAR 19 assessment model.

Jumping right into the background, this assessment was originally scheduled as an update from SEDAR 19, and it was changed to a standard assessment, mostly to allow the inclusion of the SERFS video data, so that we could consider those data for developing an index of abundance. It follows the standard assessment conventions that the modeling decisions were made by an assessment panel, and most of the meetings were conducted via webinar. Actually, all of the meetings were conducted via webinar. There were no physical meetings for this assessment. Then, for the standard assessment, the SSC conducts the review, and that's today.

I wanted to highlight Term of Reference Number 2, which was that we consider the inclusion of the SERFS video index, and so that was, again, the main reason for making this a standard assessment, and that we update the assessment model that was used to incorporate any of the latest aspects of the BAM configuration. Throughout the assessment process, during the webinars, the panel really tried to strike this balance between sticking with what was done in SEDAR 19, but also considering ideas to the data and to the assessment model that might improve the assessment.

This is a summary of regulations. This is not all of the regulations. This is just to highlight some of the regulations that affected the assessment, either in terms of data input or in terms of the model. In 1984, there was a twelve-inch total length size limit that was put into place in both the recreational and the commercial. In 1992, that was extended to twenty inches, and then there was a five grouper aggregate bag limit applied on the recreational side, and so that wasn't just red grouper. That was for all of the shallow-water groupers.

Then, in 2010, that was reduced to a three-grouper aggregate bag limit, and that's when the spawning season closure was put into place for the four months of January through April. Then, since 2011 and beyond, there's been miscellaneous ACLs and ABCs and accountability measures that have been in place.

To summarize the results from SEDAR 19, the terminal year was 2008, and that assessment found that, in 2008, overfishing was occurring, with the ratio of F of 2008 to FMSY of 1.35. The stock was considered overfished, with a ratio of 2008 SSB to MSST of 0.92, and so it was just barely overfished, but below one.

That assessment used the definition of MSST that was based on M, where M was 0.14. Amendment 24 changed that definition, so that it was MSST instead of equal to 86 percent of SSB MSY, it was set equal to 75 percent of SSB MSY. With that change, the stock was not considered overfished. However, it remained in a rebuilding plan that was scheduled to end in 2020, and so it's sort of an unusual situation. That 75 percent SSB MSY definition for MSST is used in this current assessment.

To review the data, this may be a little difficult to see on the screen, and hopefully you can see it on your laptop a little easier, but this shows the data sources by year that were used in the assessment. This top group here, the grouping, shows the landings time series that were modeled, so that there is the headboat fleet, the general recreational fleet, and the commercial was split up into lines, which included handline and longline and then a commercial other category that was a catchall, and that included trap and trawl, when that was legal, and anything else.

The time series was 1976 through 2015 for this assessment. Recreational landings started in 1981, and the others went all the way back to 1976. Discard, we had data on headboat recreational and commercial handline, and, again, you can see the years that those data were available. For the composition data, the length comps and age comps, we had data for headboat for most of the time series and recreational for a good chunk of the time series, starting in 1995.

Commercial lines and then commercial other, we only had three years of commercial other, and that was for length comps. Then headboat discards, we had some length comps towards the end of the time series and then chevron, the SERFS chevron trap, we had length comps and age comps for all of the years, starting in 1997, except for one. The color coding here is the solid colors show the years of the length comps. The shading, the shaded bars, show where the age comps overlap the length comps.

For the indices, we had the headboat data, starting in 1981, for this assessment. We did have a MRFSS index from SEDAR 19 that was considered and a commercial handline index from the logbook data, and we had the chevron trap index and then the new index developed from the SERFS video data.

For this assessment, the assessment panel discussed, one, whether to include the old MRFSS index that was used in SEDAR 19 and also based on Term of Reference 2 and whether to include the video index, and so I'll go into that a little bit more in a future slide, but I wanted to give a sense of the scale of the landings and the discards from the different fleets. On the left are the landings, broken out by color. The purple-maroon color is the GR, or general rec, and then the light-blue is headboat. The green is commercial other, and the red is the commercial handline and longline combined. You can see here the proportion is the bottom plot, and so the majority of the landings are coming from the general recreational fleet. The right two panels are the discards, in numbers, and, again, the majority of the discards are coming from the general recreational fleet.

I wanted to review some of the decisions made by the assessment panel regarding the indices. The terminal year of the fishery-dependent indices was under consideration because of the potential for regulations to affect the indices, and so this wasn't an issue for SEDAR 19 with the spawning season closure, because it went into place after the terminal year of SEDAR 19, but in this assessment it was.

The reaction to that was that, for these fishery-dependent indices, those months were removed for all of the years, stretching back from before the spawning season closure, just so that there wouldn't be any convolution of when that went into place in 2010.

For the commercial, there was one closure in 2012, and that time period during the closure was just removed for the commercial index, and that was just a small percentage of the trips, and so

0.36 percent of all the trips in 2012 were removed, and so there wasn't much of an effect there, but we were able to extend the fishery-dependent indices through 2015, the terminal year.

We decided to exclude the MRFSS index, and this was based on mostly in an interest of parsimony and also not having an analyst available to update the index, but we compared the SEDAR 19 model runs with and without the MRFSS index, and it had really a trivial effect. The model was not really paying attention to this index anyway, and we considered it to be our weakest index, and, again, in the interest of parsimony, we dropped it from this assessment.

We did include the SERFS video index, after examining it further, and we combined it with the chevron trap index, and so a little bit more on that. The video data are available 2011 through 2015, and the standardization methods were the same as those used in SEDAR 41, where you had factors of year, season, depth, latitude, temperature, turbidity, current direction, biotic density, and substrate composition.

We compared zero-inflated Poisson and zero-inflated negative binomial models. The negative binomial performed the best and was used for the analysis, and uncertainty was computed using a bootstrap procedure, where we refit the model a thousand times to compute CVs. There was a camera gear change in 2015, going from Canon to GoPro, and so we evaluated the -- There was a calibration study that was done in 2015, and we used the data from the calibration study to adjust the index in 2015 to reflect that. There were only four red grouper observed in the calibration, unfortunately. We would prefer it to be species-specific, but, because there were only four observed, we used all of the fish that were seen during the calibration study.

This plot just shows the locations of where traps and videos were set. Those were the black dots, and then the red dots show where red grouper were observed in the survey, and they are observed throughout, really, most of the South Atlantic region, but primarily off of the Carolinas and then again off of northern Florida.

This is a little more detail on the calibration study, and this is a linear regression of the Canon mean count regressed onto the GoPro mean count, and, from this, we learned that about half -- There was about half as many fish that are seen on the Canon as on the GoPro, and so that regression coefficient was used for the adjustment to the index in 2015.

Then this plot shows the standardized index, and that's the solid line. Then the confidence intervals are the dashed line, and the blue line shows the nominal. One consideration we had was that the proportion positive for the video data was rather small, and this table at the top shows a proportion positive. The number of sets are in the range of generally around a thousand. It's fewer in 2011, and more than a thousand in other years, and then the number of positive -- The proportion positive is around 2 percent or less, 1 to 2 percent, and so it's relatively small, but we also consider that for the chevron trap, which we did use in SEDAR 19, and, again, the proportion positive is small. It's around 2 to 3 percent, and so it's small in both cases, and using the zero-inflated model we hope accounted for the small proportion positive.

This top table also shows the scale of the CVs that we're getting from the video index, which range from 0.3 to 0.53. I think the small proportion positive is -- These CVs are reflecting that small proportion positive, and we did decide to combine this video index with the chevron trap index.

The main reason for that is that the two gears are not independent, because the cameras are mounted on top of the traps, and so they're not two independent sampling methods.

Then were combined using the Conn method, which is essentially a hierarchical Bayesian model where each of the indices are assumed to observe the same underlying trend, and the model attempts to account for process and observation error in the indices themselves, and that underlying trend is treated as a latent variable, which, when it's uncovered, is the combined index that we are trying to estimate.

This next slide shows the two indices, the video and the trap index, and then the combined index is the one in orange, and so you can see it increases starting in the early part of the time series and then decreases at the end of the time series and really is following along with the trap index, where most of the years are available. Towards the end of the time series, the effect of including the video data is to increase the combined index relative to the chevron trap index.

This next slide shows all of the indices, the three indices that were put into the assessment, the headboat index, which goes back to 1980, and the SERFS combined index, which starts in 1990, and then the logbook index that starts in 1993, and there was fairly good agreement among these indices, perhaps with a bit of a lag in the commercial index, and then this decline at the end. That may be accounted for by selectivity, with older fish being selected in the commercial.

Other features that were in SEDAR 19 and were retained for SEDAR 53 were the growth function, the von Bertalanffy growth function and its parameters, the weight at length relationship, and that was a power function, age-dependent maturity schedules for both males and females, age-dependent sex ratios, natural mortality at age, which used a Lorenzen function, and that was scaled to a Hoenig estimate of 0.14. The maximum observed age for this stock is twenty-six, and then a discard mortality rate was applied to each of the fleets that was evaluated of 0.2.

To summarize the modifications and updates to the data, there were seven additional years included, 2009 through 2015. The starting year of 1976 was unchanged. That was the same starting year in SEDAR 19. The data queries use whatever the current methodology is, and so the time series of landings, for example, would use whatever querying method is now used for current assessments.

Model-based inputs, such as commercial discards and indices, were refitted using all of the relevant data, and so those early years were also subject to change, depending on the parameters that were estimated for those models. The general recreational fleet was represented by MRIP rather than MRFSS. Like in SEDAR 19, those general recreational landings and discards were smoothed, because of the spiky nature in the sampling.

The MRFSS index was not used for SEDAR 53, although it was considered in a sensitivity run, and then we did add the SERFS video data, and the index was combined with the trap index to make the single fishery-independent index of abundance. That might be a good place to pause, to see if there are any questions about the data inputs.

DR. REICHERT: Thank you, Kyle. Any questions? Seeing none, I guess we will move on.

DR. SHERTZER: Okay. Here's where it gets really exciting. The model we used is the BAM, the same model that was used in SEDAR 19. It's a catch age formulation, and it's fit using maximum likelihood. We applied a Beverton-Hold spawner recruit model with lognormal error. It's age-based natural mortality. Again, that was from the Lorenzen function. We had age-based selectivities that were allowed to vary across the different regulations blocks, at least for where we had data in those blocks and the comp data that we would need to estimate those selectivities.

For the dominant fleets, we used the logistic or flat-topped function, and dome-shaped selectivity was used for the commercial other fleet, which was shown to capture smaller fish than the other fleets, and then it was also used for the discards, under the assumption that discarding is primarily driven by the size limit. The fishing mortality rates were estimated using the Baranov catch equation, and the spawning stock biomass was based on total mature biomass, and it included males and females, because this is a protogynous stock.

The initial age structure in 1976 was estimated. That requires comp data to do that, and we did have comp data, length comp data, going back to the early part of the time series. The recruitment deviations were started in 1976. The ages that were modeled were one to sixteen, where sixteen is treated as a plus group. There was a constant CV of size at age around the von Bertalanffy growth curve, and that CV was an estimated parameter.

The years with missing landings or discards were predicted with average F from the nearby years, and this is something that is a little bit different from how we would normally handle missing landings, and I quite like it, but, essentially, instead of trying to compute data using say averages of surrounding years in the data, instead we predict those landings using an average F. The assumption here is that effort is similar in those years with missing data to surrounding years.

The reason I like it is because I think it likely has less of an effect on predicted recruitment values than if we say input discard values to try to estimate. I think that might have a stronger effect on recruitment estimates than this method used here. Then uncertainty was estimated using a Monte Carlo bootstrap approach that we've been using for South Atlantic assessments since I guess SEDAR 4.

Now for some of the modifications to the model. The SERFS selectivity for SEDAR 53 was considered flat-topped rather than dome-shaped, as it was in SEDAR 19. The reason for this change was that likelihood profiles gave more support to a flat-topped function. In addition, when we examined the age comps and computed the catch curves, the estimates of Z from the catch curves from the trap data were much more similar to the headboat and commercial estimates of Z, and that is an indication that the descending limb in those age comps are similar, and so, if we believe that the headboat and commercial fleets have flat-topped selectivity, then this is consistent with the trap data having flat-topped selectivity as well.

The commercial other selectivity in SEDAR 19 was -- Since we had so few years, parts of it mirrored the SERFS or the trap data. In this assessment, we tried to separate those two, because now, since the SERFS were treated as flat-topped, we didn't believe the commercial other was flat-topped, because the length compositions show that it was capturing such smaller fish than in the traps, and so those were allowed to be separate. Commercial other was dome-shaped, and we did attempt to estimate it with the three years of length comps that we had, and, although the sample sizes in those years were very small, we were able to get estimates of commercial other

selectivity. Then we added a random walk to the fishery-dependent indices, and this was to account for time-varying catchability. The catchability in SEDAR 19 was a constant value.

The spawner-recruit deviations were estimated using log-likelihood approach. In SEDAR 19, it was a sum of squares, a penalized sum of squares approach, but modern BAM is using a more proper likelihood approach, and so that was used. It does require an additional parameter, which is the sigma R, or the standard deviation in log space, and we used a prior of 0.6 for that, but it was estimated.

The steepness was fixed in this assessment. In SEDAR 19, we were able to estimate steepness, and it came out to be 0.92, but, in this assessment, it was not estimable. It would hit the upper bound, but we did do likelihood profiling on steepness, and we found that it had a likely range of 0.75, up to its upper bound of values in that range were really indistinguishable, in terms of the likelihood, and so we chose the midpoint of that range, of 0.75 to 0.99, and we fixed steepness at 0.87, and so it's not far from the estimated value in SEDAR 19. It's also not far from values we have found in meta-analysis of other similar species that may be closer to 0.84, and so it's in the range of what we would expect. Then we did include this 0.75 to 0.99 range in the uncertainty analysis.

The comp data were fit using a Dirichlet multinomial distribution rather than the multinomial distribution, and so, since SEDAR 19, we have shifted from multinomial, which is maybe still the most popular distribution used, but we abandoned that in SEDAR 24, actually, based on recommendations from a CIE reviewer, Chris Francis, who recommended using the robust multinomial.

Since then, in the last few years, Chris Francis has come around and suggested don't use the robust multinomial. Rather use the Dirichlet multinomial, and that is supported by a paper that is in press by him right now and also another one by Jim Thorson and others that is also in press, and the reason for using this other likelihood is that it can better account for correlation in the sampling. For example, when you go out and haul fish, they are likely to be of the same size than perhaps when you go examine another haul of fish from another area, and so there is more variance across hauls than within hauls.

It has this nice feature of self-weighting, and so we don't have to go through the iterative reweighting procedure that we've been doing in the past, and it also allows for zeroes in the data. In addition, it's been implemented in Stock Synthesis, and so we suspect that it will sort of catch on worldwide as well. Another distribution that is being considered is the logistic normal, and it has some of these same features that the Dirichlet multinomial has. We did consider that one in a sensitivity run.

Looking at the effect of multinomial, of this shift in the likelihood for fitting age and length composition data, we applied the Dirichlet multinomial to the SEDAR 19 model and data, and this set of plots shows the effect that it had on that assessment. The top-left panel is the prediction of recruits, and the bottom-left panel is the prediction of abundance. The top-right panel is the ratio of F to FMSY, and the bottom-left panel is the ratio of SSB to SSB MSY, and, just sort of taking those all in at once, the effect here is small. The predictions are very similar. We actually saw a bigger effect going to the robust multinomial from the multinomial than we do from the multinomial to the Dirichlet multinomial.

Then these next set of plots are the fits of the SEDAR 53 base run to the data. I think most of you are familiar with seeing this fish graph output, but, just to walk you through it a bit, the panels here are the years. They're each year, and, where there is a name in the panel, it's showing which data source it is. It will show whether it's a length comp or an age comp and then the fleet, and so lcomp.cH stands for the commercial handline/longline combination of length comps.

I am just going to scroll through these. If you want to pay closer attention to any of these plots, let me know. I will just call out which one we're looking at as we go, but the years go down columns, and so, in this case, we're starting in 1986, 1987, 1988, 1989, and then it goes back up to 1990. Those are the length comps for the commercial lines, and these are still length comps for commercial lines, going from years 2000 down through 2014.

Then here is 2015, and then it changes to length comps for commercial other, and so, again, there is only three years here, but I should also say that, in addition to the year, in these panels it shows what the original sample size is, in terms of the number of trips that were sampled. It also shows what the effective sample size is, in terms of the self-weighting with the Dirichlet multinomial.

After the commercial other is the length comps for the headboat, starting in 1976, the first year, through 1984. Then 1985 through 1999. Then 2000 through 2015. The next set are the length comps from the general recreational and then length comps from the headboat discards. These started in 2005. Then length comps from the chevron traps, starting in 1997.

That is it for the length comps, and then the age comps are coming next, and so this first set is the age comps from the commercial lines. This goes 1997 through 2010. Then 2011 through 2015. Then age comps from the headboat. There was a few years in the early part, starting in 1979, that go through 1984, and then there's a gap in the years, and they pick back up in 2004. Then we had a few years of age comps from the general recreational, 2002, 2003, and 2004. Then age comps from the chevron trap, starting in 1997. That goes through 2015.

DR. REICHERT: Kyle, can I ask you a question? The length comps of the fishery-independent index, the model seems to be missing some of those peaks, and I assume that that was because you guys gave a higher weight to the age comps? Was that part of it?

DR. SHERTZER: Remember that we actually didn't do any iterative reweighting in this case, and so these are all sort of the natural weights that come out from the self-weighting, the Dirichlet multinomial.

DR. REICHERT: Thanks.

DR. SHERTZER: These are fits to the landings, and these are the commercial landings, and these are in pounds, thousands of pounds. The open circles are the data, and the closed circles and the lines are the model predictions, and it's hard to distinguish them, and that's by configuration. The model is configured to fit very closely to the landings. The commercial other really has been somewhat negligible since the early 1990s, and I think there was, before the trawl ban, probably more trawl landings in this early part of the time series.

This next plot are the fits to the landings from the recreational fleets, and this is in numbers and thousands of fish. The headboat is in the top left, and then the general recreational is in the bottom right, and so this shows what I was talking about earlier, where we have data for the general recreational starting in 1981, but we didn't believe that was the first year of recreational fishing for red grouper, and so we did predict the landings going back to the start of the time series, and this is based on average F from the early years to predict what the landings might have been prior to that.

These are discards. The top-left is the commercial handline discards. The top-right is the headboat discards, and the bottom is the recreational discards. These are all in numbers and thousands, and I guess maybe the take-home from this slide is the scale difference between the general recreational, which is an order of magnitude higher than both the headboat and the commercial.

Fits to the indices, this is the commercial handline index, and it fits very well. Remember there is a random walk catchability applied to this, and so every year the catchability is different, and so that's why the fit is so close. The same with the headboat index. It's a very tight fit and random walk catchability.

The chevron trap index, you can see here there is much larger CVs. The bars are plus or minus two standard errors, and you can see that it doesn't fit as closely as it did for the commercial, and that's because it's not a random walk catchability, and we did talk quite a bit in the assessment webinars about whether or not to fit more closely, particularly in this region between 2000 and say 2008. We did consider upweighting this index, and we still have the capability to do external weights. We did consider upweighting this index, but, for this base model, we did not, but we did consider it in a sensitivity run, where we upweighted the index to fit more closely to these middle years in the index.

This shows the estimate of spawning stock biomass, which decreased in the early part of the time series and increased. If you remember, the terminal year of SEDAR 19 was 2008, which is right here, and so we're in agreement with where we were in 2008 in this assessment of being above MSST, but, since then, the prediction is that the stock has decreased until reaching the low point in the terminal year of 2015.

These are predictions of recruitment through time. The left-hand panel shows the annual recruitment predictions in numbers. This is for age-one fish. I did want to draw your attention to this right-hand panel, and these are the residuals, the predicted residuals to recruitment, and what we're seeing in the last -- Say starting in 2006, is that it's almost all -- Well, it is all negative residuals, showing that we're getting below expected recruitment in the last decade. Never mind this terminal year. That is a fixed thing. That's a forecast that we don't have any data going into this, and so we're not actually getting expected recruitment. We don't know what recruitment is, in reality, for this terminal year, but, for the years we can estimate, all of the recruitment residuals are negative, and that is corresponding to these low values of recruitment in the time series.

DR. ERRIGO: Kyle, I just wanted to know, what is the age at which they enter the fishery?

DR. SHERTZER: They are being selected for around age-three, four, or five, generally.

DR. ERRIGO: So there's not a terribly long lag time for the age-one recruits and then seeing the in the fishery in a few years. Thank you.

DR. SHERTZER: Certainly the estimates -- As we get toward the end of the time series, these estimates get less and less certain, because they're not -- We don't see the cohorts going through. We do have full selectivity of age-one fish in the discards, and so there is some information on recruitment in the discards, and I don't recall -- We can look this up in the report, but to what degree -- Not full selectivity of age-one in the other fleet, but, if there is some selectivity, then there is some information on recruitment of say age-one.

DR. BARBIERI: Did you guys -- Going back to the fits to indices, and I was paying attention to what you just said about the recruitment and then looking at the fits to the chevron trap index, and did you guys ever discuss, looking at the residuals there at the bottom, that that -- I mean, they're all within expected ranges in magnitude, but they're all positive, and then they become all negative at 2005.

DR. SHERTZER: Yes, we did talk about that quite a bit during one of the webinars, and we looked at upweighting this index to different degrees. In the end, we decided not to upweight and just to accept this fit. It does have the large error bars on it too, and we just accepted this fit as not being an ideal fit and considered the upweighting in a sensitivity run, but you're absolutely right that there is this run of residuals, particularly at the end, where we're actually over-predicting what's being observed, and so, if we were -- In that sense, the results that we're getting are sort of optimistic, in terms of stock status.

DR. BARBIERI: But I was thinking in terms of the discussions with Marcel and George here and if there was anything that changed catchability, because it's basically an overfitting consistently and then a chance to underfitting, pretty much consistently, and was there anything that happened that could explain your view?

DR. REICHERT: I assume that question is for me. If anything, I would expect perhaps -- When SEFIS came online, we substantially increased the sampling size, and so, if there would be a signal, I would expect that, which happened around 2010 and 2011, when SEFIS was really ramping up. Prior to that, I really don't believe that we changed much, if anything, in the way we are sampling.

DR. SEDBERRY: But when SEFIS ramped up, there was, I think, increased effort in sampling off of North Carolina and Florida, which is where these fish are mostly found, as opposed to South Carolina and Georgia.

DR. REICHERT: I absolutely agree, but then you would expect perhaps a change occurring around that time, and the switch from positive to negative residuals started a little earlier than that, and so that's definitely a factor, but I don't believe that could explain that pattern. Do you agree, Kyle?

DR. SHERTZER: I do agree. You can see it showing up in the CVs starting in say 2011. The CVs are much smaller when the sampling increased. I mean, I can think of behavioral reasons why fish might have changes in catchability, temperature and other things, that could affect catchability even for a fishery-independent survey, but I don't know that there is any -- I can't think of any trends in those types of things that would account for this run of negative residuals.

DR. REICHERT: In the index development, sample size and temperature and latitude and those factors, those are taken into account.

DR. BARBIERI: Thank you. I just wanted to have some discussion.

DR. REICHERT: No, that's a good point. Anyone else?

DR. SHAROV: Since you have opened that discussion -- I wanted to wait until the end, but my understanding is the catchability for the combined -- It's a combined video and trap index, right? It's assumed to be constant, and so the question is what is the reason why you decided to assume that the catchability for the commercial indices could be variable by year, and obviously you get a near-perfect hit, while here it's not, and, to me, the math explains it, or the mechanics explains it, that if you are fitting -- If you are allowing the model to fit very well to your fishery-dependent indices, your estimates of the population size at age are obviously driven by those indices, the indices in the catch information, because you fit it well, allowing for the catchability to be variable.

Therefore, the fit to this index is also affected by your estimated numbers at age, and obviously, because you are using the catchability constant, you get your poor fit or positively biased and positively negative, but I want to understand the logic of why we're allowing for the variability in the catchability in the first case and not in the second case.

DR. SHERTZER: Because, in the case of commercial and recreational fishing, it's not a statistical design, and so the behavior is affected, the fishing behavior is affected, by economics and by fishing regulations, and we did have a fisherman, during one of the webinars, who gave a really nice description of how his behavior was affected, fishing behavior was affected, by regulations, even on other species, and so it's not just regulations on red grouper that is affecting how he is fishing for red grouper, but regulations on other species that affect where he was fishing and when he was fishing, and so that's the primary reason for the fishery-dependent indices.

For the fishery-independent, it's the opposite. Because it's a survey of statistical design on the survey and the sampling is consistent from year to year, we would expect it to be a more constant catchability over time.

DR. REICHERT: If I may, to that point, by allowing that random walk, you fit the fishery-dependent indices rather well, and we also are fitting, because of the assigned variability over the landings, we fit the landings very well, and did you guys have some concern over the potential combined effect on the model and the outcome of the assessment?

DR. SHERTZER: No, not really. I mean, the fitting the landings very well affects our estimates of F more than our estimates of abundance. The random walk on catchability actually absorbs a lot of the noise rather than driving our estimates of abundance, and so, in fact, it's the opposite. Because this fishery-independent index had a constant catchability, this one has more of an effect on estimates of abundance than the fishery-dependent indices do, even though they're fitting much more closely to those.

DR. REICHERT: Thank you.

DR. SERCHUK: I am appreciative of all the comments here, but this is a very noisy dataset, in terms of the confidence limits around each one of the data points, and so I think you have to look at that, going in. We have a fit here, but none of the adjacent years, for most of this time series, are any different. We have a very small range of variability in the index itself, and I think we're trying to make more out of this, quite frankly, than the actual data provide, in the sense of the questions that are being asked.

It looks like there is a trend. It's fits as if it's a trend. The last points obviously are much tighter, in terms of their confidence limits, than the earlier ones, but those error bars are pretty staggering, and so I think you have to go in with what is the dynamic range of the dataset we're using and how variable are the individual annual points, and that's a pretty noisy dataset, but that's what we have.

DR. BUCKEL: Just to add to the catchability that Kyle was talking about, in the commercial and those fishery-dependent fisheries, you also have the increase in electronics that have led to increased catchability, and so I was just curious, with the random walk approach, do you get estimates of Q that you can plot? Were those increasing over time in those fishery-dependent indices?

DR. SHERTZER: We didn't look at that in SEDAR 53. We did that exact analysis in SEDAR 19, and it did not show a trend in SEDAR 19, and so we, in that assessment, we estimated catchability as constant, because of the analysis that you just suggested.

DR. REICHERT: No one else? All right, Kyle.

DR. SHERTZER: For what it's worth, this was the spawner-recruit curve that was -- Again, steepness was fixed, but the other parameters are estimated, the R zero parameter is estimated and sigma R is estimated. This shows fishing mortality rates. The left-hand panel is the ratio of F to FMSY, which has been -- It shows a pattern of overfishing throughout the whole time series. It's at its lowest value, however, at the end of the time series. The right-hand panel shows the Fs by fleet, and I think the take-home there is that the general recreational, both in terms of the discard Fs and the landings Fs, are really dominating the fishing mortality.

The uncertainly analysis, we, again, attempted 4,000 MCB trials. Not all of those properly converged, and, if they didn't, they were discarded, but we ended up with 3,943 that were retained. The bootstrap components included landings and discards and indices that were resampled using a parametric bootstrap of the original data with the CVs that were applied in the fitting procedure, and then the comp data were resampled, where we drew the original number of fish that was sampled and assigned them to their length or age comp bins with the same probabilities from the original data.

That's how the data were bootstrapped to create new datasets, and there is also this Monte Carlo component to the CV, and here we draw values for key parameters that are fixed in the assessment. We draw them at random from distributions, and the natural mortality was drawn from a truncated normal distribution that had a mean equal to that base value of 0.14. That was the Hoenig value, and then the bounds were set at 0.1 to 0.2. Then this fixed value is what is used to scale the Lorenzen age-based M.

We, in the base run, had a release mortality of 0.2. In the MCBs, that value was drawn from a uniform distribution with a range of 0.1 to 0.3, and then that was fixed and applied to the different fleets. Then steepness was drawn from a uniform distribution that had a range of 0.75 to 0.99, and that was from the likelihood profiling.

The computed uncertainty and benchmarks are shown on this next slide. In each of these, the solid line is the base run estimate and the dashed line is the median estimate, and, in this assessment, they are fairly close, showing that the distributions weren't highly skewed. The top-left is FMSY, the bottom-left is MSY, and that's in pounds whole weight, and the top-right is SSB MSY in metric tons, and then the bottom right is biomass at MSY, in metric tons.

In this plot, each point is one iteration of the MCB analysis, and the crosshairs shows the 95 percent confidence intervals or set of values from all of those MCB iterations, and they intersect at the value of the base run. The X-axis is the ratio of current fishing, which we're taking the average of the last three years, the geometric mean of the last three years, relative to FMSY. That is showing that about 89.1 percent of those are in the overfishing category and close to 10 percent are not showing overfishing. Then the Y-axis is SSB in 2015 relative to MSST. The vast majority of those runs are below one.

This is showing basically the same thing as in the last plot, just by distributions. The top panel is SSB 2015 relative to MSST, and so most of these are below one, suggesting the stock is overfished. The bottom panel is ratio of F to FMSY, current F to FMSY, and, again, the majority of these runs are suggesting overfishing, but there is a proportion, close to 10 percent or so, that are suggesting that it's not overfishing.

I am not going to go through all the values on this table, but I did want to have it available, in case it plays into any discussions later, and I guess I will just highlight the point estimate of the relative fishing ratio is 1.54, and the point estimate for SSB in the terminal year, relative to MSST, is 0.38.

This is a set of sensitivity runs that we conducted. We looked at steepness, and so the steepness at 0.99, which is the upper bound in the MCB and in the likelihood profiling. A smaller value of 0.75, which was the lower bound in the MCB analysis. We looked at a high natural mortality rate, the 0.2 value, which was the upper bound in the MCB, and then 0.1, which was the lower bound in the MCB analysis.

We also considered natural mortality that didn't follow a Lorenzen curve, but instead followed the Charnov curve. This age-based natural mortality was quite a bit higher than the Lorenzen. In some cases when we've looked at this, we may rescale it. We didn't attempt to rescale here, and so it was left at a high value. I think, if we were to use this in a benchmark assessment, we might consider rescaling the value.

We considered upweighting the SERFS index, and, here it was by a factor of six to fit, which was enough to get it to fit closely, and so we didn't have that run of negative residuals at the end of the time series. We considered not including video data at all, and so just purely the chevron trap index without combining with the video data.

We did a continuity configuration. This was one of the terms of reference. This one included the multinomial likelihood for composition data. The commercial other selectivity mirrored SERFS.

Steepness was fixed at 0.92. The MRFSS index was included, and then we used constant catchability for the fishery-dependent indices in addition to the fishery-independent index. We did a sensitivity run that considered the logistic normal likelihood rather than the Dirichlet multinomial, and then we considered a release mortality rate that was higher than the value of 0.2.

I have plotted -- For each of these, I have tried to combine like sensitivity analyses with like sensitivity analyses. In this case, this is steepness. Then what's being plotted is F over FMSY in the top panel and SSB over SSB MSY in the bottom panel. The trends are similar and the results are similar across steepness values. Natural mortality rate, the high value of scaling to 0.2 and scaling to 0.1 and then the Charnov. The one that's the real standout here is the Charnov estimator, but again remember that value was quite high relative to the Lorenzen, and we did not attempt to rescale it.

The next plot shows the indices sensitivity runs, and so this is one where we upweighted the chevron trap index and then one where we dropped video data altogether, and so, when you get rid of that run of negative residuals at the end, you can see what the effect is there. The estimates of F are higher in the terminal years and estimates of spawning biomass are lower in the terminal years without the video data or fitting more closely to that index.

The continuity run, the results are qualitatively the same. There are some differences in the F over FMSY, particularly in the early part of the time series, with the continuity configuration. At the end of the time series, it would have estimated a higher F over FMSY than the base run did. The spawning biomass trends are quite similar. The logistic normal likelihood for fitting comp data, we get higher rates of F over FMSY and lower relative spawning biomass.

DR. ERRIGO: What are the significant basic differences between the logistic normal and the Dirichlet multinomial? They both self-weight and they both allow for zero data?

DR. SHERTZER: Yes, they can. Well, you have to adjust for it. In the observations, you have to adjust for it with the logistic normal, in some way, like adding a small constant, similar to the multinomial.

DR. ERRIGO: So what are the biggest differences? Is it just the shape of the distribution or something?

DR. SHERTZER: It's somewhat of a different shape on the distribution. I take the point of your question is trying to get some intuition into why this difference, and I'm afraid that I can't offer a good explanation for it. I don't myself have a good intuition for what is driving this difference.

DR. ERRIGO: I read the papers, and I also couldn't tell you why it made that change, and I didn't know if you had any more insight.

DR. SHERTZER: I don't. It may be how it treats outliers, because, if you use the robust multinomial, you get a fit that's much more similar to the logistic normal. The higher release mortality was considered, and this was -- A paper came out while we were nearing the end of the assessment webinars, a pretty thorough analysis of commercial data in the Gulf of Mexico, and it found a release mortality of 0.26 for red grouper, and so it wasn't too far off from the value of 0.2

that we were using, but it also was only the immediate release mortality. It didn't include any delayed mortality, and so there is potential for a higher release mortality in the Atlantic.

We chose a value of 0.4 not because we thought that that was a defensible value. We really don't know what a defensible value might be, but just to consider the effect of what if it were higher, what if release mortality were higher than the 0.2 value that we're using, and so this is a true sensitivity analysis, in that sense, of just what direction do results go when you have a higher release mortality.

The effect here was that the time series of F over FMSY wasn't different by much, but in the terminal years is where we saw the most difference, and then SSB over SSB MSY had similar trends, but some subtle quantitative differences. This next plot shows a summary of all of the results of fishery and stock status from the various sensitivity runs, and, again, the outlier here is this Charnov M estimator.

We conducted a retrospective analysis and did the peels on the years back to the terminal year of SEDAR 19. The top panel is the estimated F, which shows, in a few years, there may be some overestimation of F, particularly around 2010 to 2012, but, otherwise, there is not really a concerning pattern of retrospective error in F. The recruitment, on the other hand, does show some overestimation in the terminal year of recruitment going back, and this retrospective error is stronger going back to before 2011 and earlier.

It settles down in the terminal years. It's not as large, and it's very similar to the base run. I think that that value, those overestimates of fishing mortality in the terminal year, are perhaps driving what we are seeing in some overestimates of spawning biomass in the subsequent years, but, again, as recruitment settles down, then that sort of settles down, so that we don't see the retrospective overestimates in the last few years.

For projections, the idea was to carry forward all the uncertainties that we get from the MCB runs, and so we have uncertainty in the initial, in the 2016, abundance at age, in the spawner-recruit function, in natural mortality, in the release mortality, in the selectivities that are estimated, and in the recruitment deviations, and in the growth, the CV of growth, and so anything that's being estimated that might carry forward does carry forward, and, for some projections, where we choose an F-based projection that contingent on FMSY, we're using those estimates of FMSY from the MCB runs, and so those would be run specific. In other words, they wouldn't be based on the base run estimate of FMSY. They would be a -- A single run would be projecting forward from its own value of FMSY.

There is landings or this in-between stage, where we have a terminal year and then the year that the projections start. In those years, the landings are following an average from the end of the assessment, and so the 2013 through 2015 value are being assumed.

We did consider some additional projections from what was in our term of reference, and this was just based on the results that we got in the assessment. I mentioned that the red grouper are under a rebuilding plan, and the timeframe for that was to end in 2020, but, given the current results, it doesn't appear that the stock can rebuild by 2020, and so we did consider F equals zero as one of our projections, rather than F equals F rebuild that was in the term of reference, because there is no F rebuild to 2020, and the F equals zero might be useful for setting a new timeframe for a

rebuilding plan. Just as an aside, if it's needed, the estimated generation time for this stock is fourteen years.

We considered low-recruitment scenarios. Because of the low recruitment in the last decade, we did consider what if that continued into the future, and so we did projections that, rather than using the expected recruitment from the full time series, used expected recruitment just from the last decade.

The suite of projection scenarios that was considered is shown in this table. We set F equal to one of three values, either FMSY or 75 percent FMSY or else zero, and recruitment was set at either the expected value or at this low value that was reflecting the past decade. Then the start year was 2017, because the terminal year of the assessment was 2015, and so we either started new management in 2017, or there was some indications that it may take longer to implement something, and so we considered a start year of 2019 as well.

I will just show one example of these projection scenarios. This was Scenario 3, with F equals zero. I chose this one just to show that it's not -- Even with F equals zero, the stock is not -- In this top panel, the spawning stock biomass, the stock is not getting back to the value of SSB MSY by the year 2020, and so the indications are that the stock is not going to rebuild by then.

I also included a bunch of tables in this presentation, not because we're actually going to walk through these little numbers, but because sometimes you guys like to talk about projections after we're done with the presentation, and so, if you need the values, they will be on the screen.

That is pretty much in for the assessment. I did have this summary slide that reminds us that the assessment indicates that red grouper were estimated to be overfished and currently experiencing overfishing. This decrease in abundance over the past decade, it really appears to be due to a low recruitment starting in 2006, and there were some years with high landings, particularly around 2007 through 2009, and especially in the general recreational fleet, but, in the more recent years, the landings have not been -- They haven't been as high as they have been in the past, and so this low spawning biomass really appears to be primarily driven by recruitment failure.

We did discuss this possibility of a regime shift, and maybe it's possible that there is. I think it's premature, really, to draw that conclusion right now, and that's based on this paper by Klaer in 2015 that outlines what you might look for if you were trying to establish a regime shift in a stock or that one had occurred.

At least for now, we don't really have any mechanism that would explain the low recruitment, and, in addition, although it seems like it's been a long time, it's really been shorter than one generation for this stock, and so it may be premature to conclude that there has been a regime shift, but that doesn't mean that we couldn't consider these low recruitment values in projections, and particularly for the short-term projections, for say setting quotas in the short-term, even if those low-recruitment projections aren't used for say setting long-term goals, and that is it.

DR. REICHERT: Any questions at this point for Kyle?

MR. HARTIG: Thank you, Kyle, for that assessment. It certainly mirrors what the fishermen have been telling us. This is one of these assessments that the fishermen agree with what is

happening with the assessment results, but there are some extenuating circumstances in red grouper, in my observation and fishing history, that I am going to bring forward in a hypothesis, possibly, about why the highest landings in the time series occurred in 2008 and 2009.

I don't know of any reef fish species that we manage where we have had those high numbers later in the time series that I can think of, where we caught more fish later than we did in the early timeframe. The observations that I have had, and I have been interested in red grouper for some time, is the area that we live in, in Hobe Sound and Jupiter, there is a baseline population of red grouper. It's relatively low. You can't target them.

We see a number of juveniles, and we catch very few fish of legal size, and that's been about the same, and it was interesting, at the last SSC meeting, when we had the fisheries evaluation, performance evaluation, for red grouper. People from north Florida all the way through to the Keys, and even South Carolina to the Keys, had the same general observations. Red grouper is in relatively low abundance in those areas, and has been over time, and it's never been a fish that you could actually target.

Now, that all changes once you get to North Carolina. I mean, there is areas in North Carolina where they actually target them and they catch a lot of fish, and that's where most of the fish are caught, but, to get back to what possibly could be driving this abundance, in 2004, Hurricane Charlie hit the Captiva area and proceeded up the Gulf Coast.

After Hurricane Charlie -- It was a very strong hurricane, and there was a lot of damage, but after Hurricane Charlie, and we have seen this in my fishing history before, and not a lot, but several hurricanes of the past have forced fish out of the Gulf and into the South Atlantic. Right after Charlie, we had tremendous numbers of red groupers along our coast. I mean, there is no comparison to the numbers we saw in a short time after Hurricane Charlie.

Now, we had some legal fish, and we had a large number of undersized fish. The fish only stayed around for about a week and then they moved on. Now, whether they went back into the Gulf or whether they continued up the Atlantic Coast, that is the question, but it was a large number of animals that entered the South Atlantic.

Now, possibly they could have continued all the way up into the Carolinas and hit the area where they couldn't go any farther. That is a hypothesis that may represent part of what happened in that timeframe. The other thing that has bothered me about red grouper is in recruitment and in where they grow up. In south Florida and the Keys, they all -- In the Keys, they grow up in the grass beds, in the shallow waters, and then they move out into the rubble areas and then out to the reef. Where I am, they're all estuarine-dependent. I mean, they have to come into the estuaries, in the high-salinity estuary, because there is no grass or areas for them to recruit to outside in the ocean, and so they're all inshore-dependent and high salinity around the inlet type of grass bed habitat, where most of our reef fish grow up, gag as well.

The comparison between say gag, which has an extended spawning period from -- We see some gag spawn in late January in our area, and they will spawn all the way until March, but, after March, it's pretty much done, and so, those animals, their life history pattern has allowed them to use the estuaries farther to the north. They get carried farther to the north, and they are able to recruit to those estuaries and grow up, and we know quite a bit about gag.

I remember Baron's work in South Carolina, where he had tracked when they actually leave the inlets, but I haven't seen any of that work with red grouper at all, and I don't know how much we know about red grouper and if they use the high-salinity areas, like gag do, in the northern estuaries. If they do, they've always been at a disadvantage, because they spawn later in time. They are going to be smaller when they reach those estuaries, and so, when they leave, they would be smaller. In thinking about that, possibly more subject to predation or other things.

I just wonder if there is any information that you have run across, or the data workshop ran across in time, that had looked at red grouper life history parameters in terms of recruitment. Are there areas off of North Carolina where they are able to grow up offshore, in some rubble-type habitat? That I don't know, but there's some big questions to answer in red grouper moving forward, and I would just like to add that into the mix.

DR. REICHERT: Thank you, Ben. Kyle, do you remember some of those discussions?

DR. SHERTZER: I don't remember that we looked at particular parameters for that. We do see the big recruitment pulse near these years you're talking about, and, if these are young fish coming from the Gulf, this assessment won't be able to distinguish whether they are recruited from the South Atlantic or whether they're coming around from the Gulf, but that would certainly -- That would be really interesting to look at, and we're starting to, I think, make some good advances in modeling recruitment, particularly flowing through the Florida Straits and contributions from the Gulf into the South Atlantic, and I hope we can look at that for red grouper in particular.

We do see that they're estuarine-dependent off of the Carolinas as well, and I don't know if they're exclusive estuarine-dependent. I don't know if that's known. Maybe Jeff has some information on that, but I know some of the other species, I think like black sea bass, for example, that are estuarine-dependent are found to not be exclusively estuarine-dependent.

DR. REICHERT: Thank you, and, to that point, I also want to take a quick break. Then we can continue the discussions after the break. We did see red grouper in our gag study. Not in huge numbers. The numbers are generally low, and so we do see them, or have seen them, in our study. Luiz and then Jeff, and then we're going to take a break, unless any one of you just want to hold off until after the break.

DR. BUCKEL: Ben, that's something that I have been interested in. We see very few red grouper juveniles in the estuaries in North Carolina, and so echoing what Marcel sees in South Carolina, compared to gag, which are more abundant. They are still not extremely abundant in the grass beds, but the red grouper juveniles are very rare.

I looked in the literature trying to find out what's known about these age-zeroes, and I didn't do any extensive research, but the only paper that I found that talked about the age-zeroes was a paper from the Gulf of Mexico, and I can't remember the authors, but they had found these age-zeroes in offshore, hard-bottom habitat. They were very cryptic though. They were hiding during that stage, and so that's the only -- There is some use of the offshore habitat by the age-zeroes.

DR. REICHERT: Okay. Let's take a fifteen-minute break, and then we will be back here.

(Whereupon, a recess was taken.)

DR. REICHERT: Welcome back, everyone. Before we start our discussions, we will have an opportunity for public comment, and so I am going to look around and see if anyone would like to make a public comment. Seeing none, then let's open the discussion on the assessment. The action items under 7.4 are, as I mentioned earlier, pretty similar to previous assessments, and so we will get to them when we start making our recommendations.

Laura Lee has joined us on the webinar. We had some technical issues that we solved in the break, and so she is there, and, when she has a question, we will open the microphone. Before the break, we had Luiz and Alexei raising their hands.

DR. BARBIERI: Thank you, Mr. Chairman. My question was kind of sort of related to the same topic that Ben brought up. I was wondering, and I know that this was a standard assessment, and so everything was similar to SEDAR 19, in many ways, but I don't remember what was discussed in terms of stock structure, because I was thinking about the same thing, in terms of sort of episodic inputs of recruitment from the Gulf that could be happening into the Atlantic stock.

As we look at some of these slides, some of Kyle's slides, like Slide 46 that has the recruitment, estimated recruitment, trajectory there, and you see that, throughout the time series, until about 1987 or so, they kind of oscillate around MSY. Then, more often than not, they are below, and there are some episodic peaks above it, and, of course, that one that is 2004, I believe, it's pretty high and very unusual for the series, and so I was just wondering if you guys remember, maybe Marcel and George as well and Church, anything in terms of stock structure between the Gulf and the South Atlantic, if there are any tagging or genetics or --

DR. REICHERT: Off the top of my head, I am not aware of anything. I do want to mention that in the left-hand panel here, the last year, we should not really take into account. If you look at that, the last six years or so are at the lower end of the time series, and so those higher peaks that occur in this graph in earlier years, we don't see them, but your point is well taken, but I am not aware of any information. Anyone else?

DR. SEDBERRY: There has been some genetic work on red grouper, which I was a coauthor on, but I have to look up the paper to remember what was said, because I can't anymore, and there is no difference detected between the Atlantic and Gulf of Mexico red grouper. There is minimal genetic differences distinguished from the southeastern U.S. Atlantic or Mexican red grouper from other localities. I can look up the details, too.

DR. REICHERT: Thank you. Luiz, do you -- I was trying to remember red snapper in the Gulf of Mexico, and have you guys seen similar patterns there, in terms of low recruitment in recent years, as far as you remember?

DR. BARBIERI: No. I mean, very, very recently, it looks like landings have decreased some, and we just heard recently about some of the commercial folks not being able to meet their quota, I believe, but the last couple of assessments show the stock to be in a fairly high abundance level. The biomass is way above BMSY.

DR. REICHERT: Did you have another -- Before we go to Alexei, did you have something to that point or --

DR. BARBIERI: No, but for discussion later, I guess, when we get to the point of discussion, I think this is something that we need to explore further.

DR. REICHERT: Thank you.

DR. SHAROV: Very quickly, I had a question, which was on the selectivity, but I resolved it during the break, and so I have only two comments left, or maybe one combined comment, and that is that it appears that, based on the information presented, this stock is highly productive, and that is reflected, I think, to a degree in the projections.

When I say they are highly productive, it's that it appeared to start with relatively high biomass on SSB values in the time series and decline to a low and then, for the period of fifteen years, from 1990 through the mid-2000s, the stock continued to grow. It increased the biomass substantially, and it reached the highest peak in biomass and abundance for the whole time series while being exploited under the fishing mortality that was two to four times the FMSY. Clearly it can withstand quite a bit of the exploitation, well above the FMSY level, and continue to be sustainable.

In addition to that, and related to this, the current MSST is set as 75 percent of BMSY. In the early 1990s, the SSB was -- I am just guessing, but about somewhere between 20 to 25 percent of SSB MSY. Having the F four times higher than -- For a decade, it was four times the FMSY and the SSB has been increasing, and so what I am saying here is that the actual -- The MSST is currently selected as 0.75 BMSY, but the actual threshold for the SSB, biologically, is probably quite a bit lower than that, and so, in my opinion, the 75 percent of the SSB MSY is a very conservative measure of the threshold for the spawning stock biomass for this stock, just based on the history of this.

Overall, the assessment results seem to be very robust, and particularly because the fishing mortalities for the entire history of exploitation were several times higher than the natural mortality. Therefore, the signal that comes through the total level of removals is quite robust, and so I think, overall, the assessment provides a pretty good picture of the population dynamics of the stock.

DR. REICHERT: Thank you for that, Alexei. Anyone else have questions or discussion points?

DR. BARBIERI: I don't disagree with Alexei's general statement there, but, at the same time, I mean, if you look at the -- I mean, regarding the assessment, I agree completely. It's just in terms of our thought process and recommendations going forward. Looking at the trajectory of F over FMSY, that Slide 48, to me, that panel on the left is a red flag, and Alexei is right that exploitation shows a fairly consistent pattern of being above what would be considered sustainable. The stock is kind of humming along, but, to me, this suggests that the current pattern of fishing mortality is just not in line with the way that we can rebuild the stock.

Then we look, a couple of slides, or three, before, at that trajectory of biomass, and, with the exception of the mid-1970s, I guess the beginning, the 1976 and 1977, and then that blip of three years later, if it wasn't for that input of recruitment, wherever it came from, either from the local

population or from the Gulf or whatever, something there is just not working out as it's supposed to, and so that's just something, Mr. Chairman, that I think, at some point, as we get to have some discussion in terms of the current plan that the council has been using to manage this stock, that we may have an opportunity here to provide some input on potential readjustments to help address some of those issues.

DR. REICHERT: Readjustments to?

DR. BARBIERI: To the level of exploitation that is going on. I mean, this is, to me, what the results of this assessment, both in trajectory of biomass over time, but particularly what the trajectory of exploitation shows, and so I think the council may appreciate some input from us, in terms of at least raising a red flag that there is something here that either gets adjusted or changed or the stock will never be able to really rebuild.

DR. REICHERT: I would agree with that. One of the things that I am struggling with is that whole recruitment failure and whether this is a pattern where a stock has a good recruitment every ten years or every fourteen years, and some pointed out that pattern, in terms of a signal, and then how to deal with that, in terms of recommendations, because especially in recent years, as Ben pointed out, there may be -- There is probably a combination of biological factors and fishing pressure that may be underlying this, and I think that may be a little bit of a complicating factor, in terms of what management does, if there are some underlying biological aspects that we may not fully understand.

DR. BARBIERI: One recommendation, perhaps, would be that any future assessment explore the stock structure, because if those two units, the Gulf and South Atlantic units, are not really completely separate and isolated units and you have this -- It might be a challenge to come up with an assessment that really captures the dynamic and can explain it, because you are having inputs that are not being accounted for into the South Atlantic population, and so I'm not saying that we recommend that they be conducted together. What I am saying is that I think that, for the data workshop, that some evaluation, a more careful evaluation of stock structure, in terms of genetic structure and movements and connectivity, through tagging or whatever, might be warranted.

DR. REICHERT: I agree, and I would couple that to better understanding of early life history, because I believe that will go hand-in-hand, plus, if we have more information there, that could provide some information that could predict year-class strength, but I don't believe we are there yet.

DR. BUCKEL: On the recruitment, I think that's an important thing, if we can provide advice to the council on how that could be monitored, and I think Kyle mentioned that the discards in the general recreational, and maybe commercial as well, was -- There were age-ones in those discards, and so that may be a way to monitor that, to get an early look at recruitment.

DR. REICHERT: Thank you.

DR. SHAROV: Just one thing, to bring it back to what Mike Errigo said earlier, and I had the very same thoughts, when he reacted to Kyle's explanations of the most recent recruitment events. I don't think that we should qualify this as recruitment failure. This is just a period of lower

recruitment, just below the average, which you have the very similar level of lower recruitment back in the 1980s from which the population recovered and grew substantially.

As Kyle warned you, and that was Mike's thought as well, that we need to accumulate more exploitation history on recent recruits before we actually make a conclusion as to how low or not they are, because we just have not accumulated the exploitation history on these most recent recruits, which could be probably adjusted if we are to run the assessment four or five years from now. Just be careful with characterizing this as recruitment failure.

DR. REICHERT: Thank you.

MR. CONKLIN: To Luiz's point, and we've been hearing it from fishermen, and I have a couple of them listening in on the webinar and texting me. From the industry standpoint, when we encounter these fish in the month of May, they still have a lot of eggs inside of them, and so, from a management perspective, I think we have talked recently about changing some spawning season months and stuff like that, but, if you want to recommend something like that, that certainly would be helpful.

DR. REICHERT: Yes, and it may be good to remind the committee that red grouper spawns a little later in the season than some of the other groupers that are in the current spawning closure, like gag and the like, and so that spawning season comes actually -- The peak of the spawning season, I believe, comes after the spawning closure is actually opened, if I remember correctly.

DR. ERRIGO: I just wanted to try to point out an observation, and this comes from the experiences that I had with the tilefish assessment, when that gigantic recruitment peak disappeared and our MSY was re-estimated to be significantly lower in the update than it was in SEDAR 25. If you think that some of this recruitment might be influx of red grouper from the Gulf in some areas, or something like that, and you remove -- Let's say you remove some of the really tall peaks. Our MSY will go down, and so a lot of those peaks that you see that are now under our MSY might actually be over it, which might help explain -- First of all, it might help explain why you see increases in spawning stock biomass in certain portions of the time series, even though there is overfishing going on, but it might also adjust estimates of things like overfishing and something like that, but that's just an observation that I just thought of from the tilefish update.

DR. SERCHUK: I guess we can look at the same graph and come to different conclusions. I am looking at the graph of recruitment, which is Slide 46, and I am thinking that there is a period that begins between 1989, and actually continues through the early 2000s, where there is actually an increasing trend in recruitment, and this is the recruitment that led to the increase in the stock size that was referred to by Alexei.

The striking thing in the graph, to me, is the range of recruitment is not very variable except for those two year classes that are occur in 2003 and 2004. If you didn't have those year classes, there would be a declining trend in recruitment from 1980 through about 2014, and that would be of concern, or at least that's my interpretation of it.

I don't know what explains those high recruitments. It could be influx from someplace else, or it could be good environmental conditions. I don't know, but they seem to be very rare events in that time series, and so I am concerned. I am concerned, in another respect, that the previous

assessment overestimated in the projections the impact of recruitment on rebuilding, because we know now that it didn't happen.

That is another issue that, if I were a manager, I would be concerned about, because, putting myself in their shoes, if I could, just for a second, I would say, well, we expected this stock to rebuild based on your projections and now you're telling us that it hasn't rebuilt and that it can't rebuild by 2020 and what is going on here?

I was one of the people on the group that suggested, very strongly, that we provide alternatives for recruitment in the future, because, again, I'm a lesson-learned type of guy, and it seemed to be that, if we're mostly down at the lowest values -- Alexei said we weren't, but, if I look at the values in the most recent six or seven years, they are among the lowest of recruitment in the time series, and so I am thinking there are two issues here.

One issue is understanding the dynamics of the stock relative to recruitment, and the other issue is how do we go forward in projecting what we believe is the most likely scenario for recruitment relative to any management measures that are contemplated with respect to the development of the stock size in the future, and I think that's a big issue. Thank you.

DR. REICHERT: Thanks, Fred, and maybe I have missed what you were trying to say, but you were mentioning alternatives for recruitment, and can you elaborate a little bit on that?

DR. SERCHUK: As I understood it in the last assessment, the recruitment that was used in the future came from the stock-recruitment curve. We now know that those recruitments were not realized, and so one of the other ways -- There are many ways of thinking about what recruitment should go into the projections. One other way could be let's assume that the poor recruitment -- Let's look at the recruitment that we've seen in the last three to five years and use that range of recruitment.

That was one of the reasons that Kyle was talking about that we used a number of different scenarios, and I think it's important for the committee to think about, if we're going to provide advice, in terms of the status of the stock now and what we believe the status of the stock will be in the future, relative to what types of management measures, you really need to think about which of the scenarios are most likely to happen.

It's easy now, in hindsight, to say, well, the stock-recruitment scenario was way too optimistic, because we expected the stock could be rebuilt by 2020. Now we know that, even under zero fishing mortality, the stock won't be able to be rebuilt for some time, far into the future, and so I think there's a lesson to be learned here. One, we probably do need alternative recruitment strategies, and then we need to think about which ones we believe are most realistic, if we can even do that qualitatively. Thank you.

DR. REICHERT: Thank you, Fred. Any other questions or comments right now?

DR. SHAROV: We don't want to argue it forever, but I disagree with Fred's interpretation on the recruitment. That is, you could interpret the time series of recruitment as you have a stable recruitment, in general, for the red grouper, with occasional successful, particularly successful, recruitment events, and that's how I would interpret this.

As for the alternatives, I think there was a clear alternative made into the projections here where the low level of recruitment was taken for the last ten years and the projections were made forward, assuming that this lower recruitment level -- The recruitment level observed in the most recent years will be prevalent in the upcoming years, and so I think that was taken into account for the projections.

MR. HARTIG: As I get into another one of my hypothesis, I spent a lot of time in the Bahamas before we were kicked out, and we fished a lot on the very northern corner of the bank. Now, most of the Bahamas is characterized by steep shelves and is not good red grouper habitat, but the northern corner of the Bahama Bank has a tremendous number of red groupers.

If you think about that in the context of possibly some recruitment coming from the Bahamas, and I say this in the context of yellowfin grouper as well, because I have never caught a yellowfin grouper in south Florida. There is a baseline catch of yellowfin groupers, and not a lot, in the Carolinas, but yellowfin groupers do occur in the catch on a yearly basis.

That gives me another possible reason why this recruitment may be occurring, and so the only thing I would suggest is get some samples from the northern Bahamas. I can help, in that regard. I can partner with someone to get some fin clips from fish from that area, so we can look at the stock structure of that and compare it as well.

DR. REICHERT: Thank you, Ben.

DR. SEDBERRY: I don't know if this has anything to do with anything, but I am looking at the stock assessment for hogfish, SEDAR 37, and it shows a similar spike in recruitment for Georgia and North Carolina hogfish in that 2002 and 2003 time period, and I wonder if those things are related, since their distributions are kind of similar in the South Atlantic.

DR. ERRIGO: I would be wary about looking at the Georgia/North Carolina portion of that assessment, because it was not accepted. We used ORCS to come up with the ABC, because the amount of data that came out of that area was extremely thin. It was an extremely data-poor area for hogfish, and the recruitment is pretty much estimated.

DR. REICHERT: Thank you, Mike, and I agree with you. However, I think George did make a good point, in terms of perhaps in assessments, when we see these events happening, it would probably behoove us to see if we see similar events occurring in other species, especially those in similar environments, because that may get us to whether or not there is something going on in either the environment or, as Ben mentioned, a storm or a temperature pattern or something like that that may help us explain some of these patterns, rather than thinking, well, maybe it's anomaly or something in the data.

I think that may help us interpret some of these patterns, and so I think that's -- I would like to recommend that when these kinds of events happen, or when you see that in the data, to see if there are similar patterns in other assessments, because I think, in general -- Though, during our discussions here at the SSC, we generally do think about those things, but, more often than not, we look at these assessments in isolation, and there is a lot going on that perhaps may explain some of this. I would like to make that recommendation, in particular for future assessments.

With that, unless anyone has any comments relative to that, I would like to go to our action items. The first one there under 7.4, the first one for us, is to review the assessment, and there is three sub-bullets. Does the assessment address the terms of reference to the SSC's satisfaction? Does the assessment represent the best scientific information available? Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?

Let's start with the first one. Does anyone have any issues or comments or concerns about addressing the terms of reference? Seeing none, then the SSC recommends that that has been satisfied. Does the assessment represent the best scientific information available? Do any of the SSC members, given the uncertainty and the issues that Kyle laid out in his presentation and that are laid out in the assessment report, does any of the members disagree that this assessment represents the best scientific information available? Seeing none, that will be our next recommendation, that we, as the SSC, feel that this is BSIA.

Then the last sub-bullet is does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations? Do any of the committee members feel that this does not provide an adequate basis for that determination? Seeing none, the SSC feels that the assessment, as presented in the report and in the presentation, provides an adequate basis.

I would like to move on to the next action item to identify and discuss assessment uncertainties. There is five sub-bullets, and I would like to treat them one-by-one, rather than read them all. The first one is are key uncertainties identified? If not, indicate additional uncertainties and comment on the possible impacts on the assessment and fishing level recommendations, and I know we have discussed some of this in our earlier discussions, but do any of the SSC members have any additional comments or concerns or is there a need for discussion relative to whether or not the key uncertainties are identified?

DR. SCHUELLER: It would be useful to know what -- Obviously recruitment is one of them, but it would be nice to have a list here, so we could make sure that we're not missing anything, rather than just --

DR. REICHERT: Obviously the recruitment is one of them, and what are some of the other uncertainties, in particular relevant uncertainties, that were identified?

DR. BARBIERI: Just the way that the MCBs were configured takes into account some uncertainty in M, I believe, as well. I am trying to get to that slide. It's Slide 49 and then 50 as well. Natural mortality, release mortality, steepness, in terms of parameters, but there is a lot of other data components as well in Slide 49 that are being sampled as part of the MCB procedures, and so I think that uncertainty in this assessment was very well characterized.

DR. BUCKEL: I think Kyle and Erik could speak to this, but I think they've investigated this in the past, but, for the general recreational category, there was the creation of those first five or six years, by using the average F from the beginning years. I don't remember if that has ever been examined and the sensitivity of changing those initial catch levels for the recreational category. That would be one thing that I don't remember any discussion on how that impacted the assessment results, because that's kind of saying, well, this is where things were in the beginning, the landings.

DR. REICHERT: Kyle, can you comment on that?

DR. SHERTZER: No, because I didn't hear it.

DR. REICHERT: Jeff, could you repeat what you said?

DR. BUCKEL: Kyle, I don't think that it was investigated here, but I think you have investigated the effect of when you create -- Not create, but you calculate or you estimate the initial landings in the recreational time series, and so I think you used the average F, once you had F values, and projected that back to estimate landings for the first five or six years of this assessment, and so what we're discussing now is have uncertainties been captured, and so I was just curious if that was done a different way or if it was a lower landings or a higher landings and how does that impact the assessment results? If that's been done in a prior BAM, then that would -- I was just curious what the impacts are on the assessment outcome.

DR. SHERTZER: That wasn't done explicitly, to examine the sensitivity to that procedure, but it's captured in the sense that the landings -- There was bootstrapping on the landings themselves, and so the uncertainty in the F associated with those landings would get carried backwards in those backwards-projected Fs, but, no, we didn't look at that explicitly and what effect that had on the results directly.

DR. BUCKEL: Thanks.

DR. SERCHUK: I think the way we've captured recruitment uncertainty here is not really reflective of our discussions. It's not that we're uncertain about recruitment in the assessment, but it's we're uncertain about what recruitment to use in the projections, and that is covered on pages 30 and 31, where we look at comments on the projections and research recommendations. To somebody just reading that, recruitment is a large uncertainty in the assessment, I don't think that conveys, in my mind, where the uncertainty that I am thinking about lies, and I don't know whether that's what you meant, Amy.

DR. SCHUELLER: Yes, and I mean I don't think that we've come to a resolution with what our thoughts about what recruitment is doing or -- There is two different statements that have been made about what's going on with recruitment and then therefore how to treat that in the projections, and so I agree with you, Fred, that it's not necessarily characterized here very well, and I'm not sure if --

DR. REICHERT: Sorry to interrupt, but we can clarify the text. I also want to separate what is happening with the projections from what we meant here, because we will have that discussion when we are talking about projections, and so that's why I was asking you earlier to clarify what you meant with the scenarios or the alternatives. If I misunderstand you, correct me, but you were talking about the alternative scenarios for the projections.

DR. SERCHUK: I made comments about two different issues. One issue was that the norm is for recruitment to have a very small range, and that is between -- The range of recruitment seems to be double. It went from about twenty to forty-million fish. That's a very small range for many marine species. You often see good year classes are six, seven, or eight times. In fact, we saw one here that was way off the charts. That tends to be, in my experience, not the norm. You can

talk about it being aperiodic, but it's often not the typical response for recruitment that we see in marine stocks. That was one idea.

DR. REICHERT: But's relative to the projections or relative to what we are seeing in the population?

DR. SERCHUK: That's what the assessment has shown us. If you look at the recruitment figure, you can see the recruitment goes from about twenty to a little bit over forty for most of the series, except for that high period. That's a small range of variability for recruitment, in my experience. Then what I am suggesting is -- I also suggested, and, again, it's my interpretation, and Alexei disagrees with it, that, apart from these year classes that we saw for two years, the very highest ones, which would be off the chart if we took them away, I see a declining trend in recruitment. I see it coming up from about forty million and then going down through the period. That is my interpretation, and you can see it differently. As I said, beauty is in the eyes of the beholder.

I have no problem with -- One question is why do we get that great recruitment? Will it be something that is related to environment or will it be related to something that is due to influx or will it be related to just favorable conditions that occurred in those years? Then, if that is truly a characteristic of the stock, how do you fold that into other recruitment projections?

If, on the other hand, you think that that's not going to be happening in the next five or six years, in the short term, then it would be silly to use, in my mind, an average recruitment of that type, because that's on the high end of the range. You would use something more moderate, and, again, this is -- The last bullet point, under comments on the projections, gets to this issue, on page 30. It remains to be seen whether the poor recruitment will continue in the future, and it talks about how to handle that. Have I explained myself?

DR. REICHERT: Yes, thank you.

DR. BARBIERI: Fred, just to try and, I guess, organize our thought process here, as far as what Marcel was saying, basically we're looking at uncertainties broken up into these two components. There is an assessment component that is primarily retrospective in nature and there is a projection component. I mean, in our report, we can present those two separately, and I don't disagree with you at all, but it's just a matter of clarifying in our report that we are going to be considering those separately.

In terms of the characterization of uncertainty, taking recruitment into account, and, Kyle, correct me if I'm wrong, but, because you have a Monte Carlo component there in the MCB structure, there is a likelihood, a parabolic approach, as far as the draws from that distribution are set up, and so they are built in a way that those choices, in terms of the draws, are not really equal, correct, from the distribution, from whatever parameter space you are talking about for the draws, in terms of terms of recruitment?

DR. SHERTZER: It does include that range of values that would include the low and the high, but, if you think of the expected value, it would be more in terms of the full time expectation from the full time series, other than for those low recruitment value projections, where it takes the expectation from the more recent years, but it doesn't have -- Even though it would be included in the uncertainty, it does not have an autocorrelation component to it that you see in this run of low

recruitment residuals at the end of the time series, and so you might get a very low one in this year, and you could, equally well next year, get a very high value.

MR. BROWN: I was trying to understand whether or not there was a depth range associated with Kyle's presentation. I didn't really see one, and the reason I am asking about that is my understanding, from fishermen that I have talked to in the past about the aggregation off of North Carolina, is they were like in one specific depth of water. They didn't really see them over a broad range or a broad area, and so how does that play into this whole thing, if those fish are in one specific spot, one specific depth of water?

We see them scattered, from there all the way down to the Keys, and you don't see the big aggregations, but they are -- They are kind of spread out a little bit. When you get down into Florida, I have seen them in the estuaries before, but then you get up off of North Carolina and here they are in that one depth range, and I am just having a hard time wrapping my brain around that whole thing.

DR. REICHERT: Thanks for that, Mark. I don't remember the depth range. Kyle, do you have any feedback?

DR. SHERTZER: No, other than that. It's true that it's not an explicit component of the assessment model. The depth range is accounted for in the data inputs, and so maybe it's a consideration, in terms of trying to understand what is happening with recruitment or targeting.

MR. BROWN: It's like I mentioned, too. They were kind of like in that one area, in that one spot, and they just kept cutting the top off the mountain until we finally got to the base.

DR. SHERTZER: That could play into the catchability component that we talked about, at least for the commercial guys. It may be easier for them to specifically target red grouper, because of having that narrower depth range.

DR. BUCKEL: Off of North Carolina, in like 130 feet, there's an area, but those fish would move around, but not much, but that was the general depth range, and I do think Mark brings up a good point, and so maybe that -- I am not sure if there is a research recommendation there, but to compare that age structure off of North Carolina, or other attributes of the fish that were caught off of North Carolina, to the group to the south, maybe North Carolina and South Carolina to Florida or North Carolina versus areas to the south. That would be interesting to see, if those recruitment events were a group of fish in North Carolina, for example, and that wasn't seen further south.

MS. BROUWER: I just wanted to bring something up that the fishermen mentioned last week, the Snapper Grouper AP, when we were talking about red grouper. One of the things that they talked about was the possible impact of lionfish on red grouper populations, and that is something that I haven't heard you all talk about, and so I wanted to make sure that that was put out there.

DR. REICHERT: Is there any -- Does any of you know of any information relative to lionfish diet studies that indicate that they do eat grouper? The thing there is, and that comes back to the early life history of these species. If they are truly -- If there is an estuarine component, they may actually be less vulnerable, because that's generally not where you find the lionfish. However, if

there are nursery areas offshore in the areas where there is also lionfish, that may very well have a significant impact.

DR. JOHNSON: Several groups have been looking at that. We have looked at diet in northeast Florida, and we didn't find any in the stomachs of roughly 200 fish or something. We didn't find any red grouper, but we found vermilion, and we found black sea bass, and we found a fair number of species there, but red grouper was not one of those for our study.

DR. REICHERT: A question I had, Kyle, because I am increasingly realizing that, for instance, in the current model that you guys are using, the landings are modeled quite tightly and how that may play in with potential uncertainty of the model and our ultimate recommendations, and can you comment on that a little bit, maybe?

DR. SHERTZER: Yes, and they're modeled closely mostly as a convenience for estimation. A lot of stock assessment models fit them exactly, and so we're not fitting exactly, but we are fitting very closely, and the uncertainty in that is brought in with the MCB, with the Monte Carlo bootstrapping, and so we are bootstrapping on landings, in addition to all of the other data sources.

DR. REICHERT: Remind me. That variability comes out of the known variability of the landings for the recreational landings?

DR. SHERTZER: No, not in this assessment. It is a small CV, and that's to force the close landings, and so it does have some variation around those, but it's not a large degree of uncertainty that is accounted for.

DR. ERRIGO: How about for the MCB runs?

DR. SHERTZER: It's the same CV that's used in the MCB.

DR. REICHERT: So how does that affect the overall estimate of uncertainty? Would that potentially lead to an underestimation of the overall uncertainty?

DR. SHERTZER: By having a close CV or matching the landings closely?

DR. REICHERT: Yes.

DR. SHERTZER: Well, it would --

DR. REICHERT: Well, let me explain it, because, if that's not reflective of a potential true variability in the landings, then you may limit that, and so that's why I'm thinking how that carries forth in the overall assessment in terms of the overall estimate of uncertainty, which we are asked to comment on.

DR. SHERTZER: I haven't looked at relative contributions to the overall uncertainty of each of the data sources or other inputs, and I think the primary drivers are natural mortality and steepness, in terms of the uncertainty, and those, I think, are adequately accounted for. If there is some bias in the landings, we're not accounting for any bias that might be there, and we are allowing for some uncertainty, but the actual uncertainty may be larger than what we have, and so, if it actually

were larger than how we're treating it, then the uncertainty in the results would be larger, but I don't know to what degree.

DR. REICHERT: Thank you. Any other comments on the uncertainty?

DR. SERCHUK: Just I have a little difficulty in understanding the bullet that I think came from Alexei, but I don't think it expressed it in -- The increase in SSB since 1990, given the trajectory of exploitation, does not seem plausible, and I'm not really quite sure what that means.

DR. SHAROV: That's not what I said.

DR. SERCHUK: Okay. Then that's what I am saying. It doesn't reflect. It certainly doesn't reflect the -- I think that statement is problematic, and so we need to do some wordsmithing there, because I think it was in response to what Alexei said, but I don't think it reflects what Alexei meant.

DR. SHAROV: I was waiting to comment on this as well, but I was waiting until we were done with the uncertainties, but that is totally not what I was saying. What I was saying is that there is an indication of high productivity, high productivity of the stock, because we observed the growth in total biomass and in spawning stock biomass in the 1990s and the early 2000s, while the fishing mortality was high and exceeding the FMSY by two to four to fivefold.

That is what I was talking about, and I didn't -- That doesn't mean that it's implausible, because that's the outcome of the model, where everything, all sources of information and a description of the population dynamics, are all put together, and that's an outcome of that model exercise, and so there is nothing implausible in there. It just tells you that the population can grow while experiencing fishing mortality levels well above the FMSY. That's all it says.

DR. ERRIGO: I just wanted to clarify that I did not write this statement in relation to what you said there. It was in relation to what Luiz was saying about it doesn't seem to match -- The rate of fishing mortality during the same time period as the spawning stock biomass don't seem to match, especially since recruitment seems very low during the same time period, and it was just a note that I made, and it was much earlier in the conversation when I put it in there, but, if we don't agree, that is fine. I will just take it out or clarify it, because we have had much conversation since then, and it was also a summary, my own summary, of what was said, and so I can just remove that. That's fine.

DR. SHAROV: Yes, but they are matched by the model. That's all I can say.

DR. SHERTZER: I wanted to offer one caveat on that, in interpreting the F over FMSY plot, and that is that the FMSY is computed from the terminal years. It's not a dynamic FMSY, and, if you go back in time, selectivities were different. If you were to compute FMSY under the different selectivity values, the FMSY would be different, and so that ratio of F over FMSY might be different.

DR. REICHERT: Before I get to you, Fred, I think that's why it's important that, if you feel, right now, that your comments are not reflected, let us know, because then we can change that. It also is important that we need your assistance, in terms of writing these parts of the report, and so, if

you bring up important issues, provide us with a little bit of language, so we can add that and then people can review that.

DR. SERCHUK: Just an observation, Chairman. If we look at this F over FMSY plot, sure it's always been above the FMSY level, but, if you look from the points from the mid-1990s through the early 2000s, you see the ratio goes from four-and-a-half to a little bit over two. You actually have a decrease in the ratio, by about half. That's the time when you're having good recruitment coming into the stock, and so you expect some -- All other things being equal, you expect some reductions in fishing mortality to be seen in growth potential and the survival of better recruitment during that period. I know that it's all above FMSY, but the fact is that's what I interpret from that chart.

DR. BELCHER: My question is just because Kyle was talking about selectivity, and I've been kind of going back to SEDAR 19 as well. The impacts of changing selectivity, relative to the MARMAP survey, you have a flat-topped in the current assessment, but it was a dome-shaped selectivity in the last assessment, and I know we've seen where you have from 1976 forward and from 1992 forward, and isn't there -- Isn't that kind of a big enough change? I mean, it just treats older fish very differently to say it's flat-topped versus dome-shaped.

Having the last assessment done with the dome-shaped, I am kind of losing how we can change selectivities for a survey and not account for it with the time breaks, like you did in the other selectivities, where they have changed because of other changes, and can you comment to that? I mean, for me, it's just confusing, because it seems like you're changing the assumption of what the survey does.

In one situation, you're expecting older fish and they are not present and so we've got a problem. Then the other one says we're not catching older fish, but that's okay, because they don't select for it. I guess, for me, I keep getting my head wrapped around it, and I don't know how much it throws it off, but, to me, it just seems like it's throwing a very different mix. If it's an important survey, it has the ability to kind of tell you that there's an expectation that is not there.

DR. SHERTZER: First, we don't have the time blocks in selectivity, because the regulations wouldn't affect the fishery-independent sampling. As far as the going from dome-shaped to flat-topped, the flat-topped was not based on an assumption, but based on the analyses that we did in this assessment, and that seemed to be the most consistent with the data, as opposed to SEDAR 19. I don't recall that any analyses were actually done.

I think it was an assumption that trap gear would have dome-shaped selectivity and not select the larger fish, but that -- When we actually looked at the data, that turned out to not be the case, and so we didn't do that direct comparison of what's the effect on the assessment of having dome-shaped versus flat-topped selectivity for this one particular gear. That analysis wasn't done, and so I can't comment on that, but that's the rationale.

DR. BELCHER: I think it was just in seeing there was the one sensitivity run where you weighted it, and the outcome kind of swung in such a way that it just -- For me, I didn't know how much that wrapped up into that, because it does -- I think about the gear selectivity in and of itself, and I would assume that, like you're saying, most of us would assume that the trap does have a dome-shaped selectivity of some sort, and so going to the other, to me, just seemed different.

I looked at the indices trends as well up to that point, and the scale is very different in the CPUE, the relative CPUE, between the last assessment and this assessment. Just giving a rough range, from low to high, you are looking at relative abundance in 1990 of around 0.5, with a max of about 1.5, and then, in that same time block, it goes from about 0.5 up to almost two-and-a-half, and so it's a more dramatic increase in that trend over that same time interval, and so I am just trying to think about consistency.

As people start looking for those consistencies from assessment to assessment and how you're looking at the importance of a particular fishery-independent and just seeing, at one situation, it's kind of stable. It's increasing, but it's on a lower scaling, where now, all of a sudden, it's this dramatic upswing with a master crash after it, and so, again, I was just focused on that one particular survey, but those are questions that just came to mind.

DR. REICHERT: All right. Any other comments relative to this bullet point? Then let's move to the next one. Are risks and consequences of uncertainties identified and evaluated? Then summarize the major uncertainties. I think, in part, we have done that under the previous bullet point, but are there any comments or questions or concerns? Are there any other additional uncertainties that we should summarize in our report?

DR. SHAROV: Very quickly, because I didn't see the Lorenzen curve in the assessment report, how much of a -- What is the range of the natural mortality that is in there? What is the highest value for the youngest age relative to the flat-topped part of the natural mortality? My question is related to the uncertainty in the natural mortality.

DR. SHERTZER: I would have to look at the data input file to be certain, but my memory is that it goes from about 0.3, at the youngest ages, down to about 0.12, at the oldest ages.

DR. SHAROV: The reason I am asking is that the question was what other sorts of uncertainty we have not talked about and what are the most important ones. While Kyle had done a very good job in exploring the potential variability in the natural mortality, that is still in relation to that flat-topped sort of range of the natural mortality that is applicable to the middle and older ages.

Most of the variability in natural mortality obviously occurs on the youngest ages, where the young fish are subject to the predation pressure from a number of predators, et cetera, et cetera, and obviously we have no means of measuring that, and so we are approximating it by just simply elevating the left part of the mortality at age, and that is a potential significant source of variability, as you probably all would agree. We never talk about this, but that, in itself, can absorb a lot of variability in the overall recruitment estimate. That's just another source of something that we have not formally identified.

DR. REICHERT: Alexei, if you can assist us later in writing some of the text of what you just said, that would help with the report. Anything else? Seeing none, the next bullet point is are methods of addressing uncertainty consistent with SSC expectations? I think we have seen these assessments in the past, and I think they were. Does anyone disagree with that? Seeing none, let's move to the next bullet point.

List and comment on the effects of those uncertainties that most contribute to the risk and impact status determinations and future yield predictions. Again, we have discussed some of that in the previous bullet points, and so I am going to ask again if there is any additional comments or questions or concerns the committee has relative to this bullet point.

DR. BARBIERI: I think that bullet there captures a lot of our previous discussion and has to do with the recruitment, and obviously the analytical team of the assessment panel have already identified this recruitment as a major component of uncertainty, and not just for stock status, but for future projections and catch advice, because they provided different scenarios of recruitment for the projections for that purpose, and so, if we want to be a little more explicit about that, we can, that basically we can consider two different recruitment scenarios or two different recruitment scenarios are being considered in the projections to try and be more explicit about the potential risks of variability in future recruitment.

DR. REICHERT: Do we feel that they cover a reasonable range? I assume that we agree on that. The next bullet point is, is adequate rebuilding progress being made? Comment on reasons why progress differs from projection. I think it's clear that that is not the case, that it doesn't look like the stock -- Well, it's clear that the stock is not rebuilt and will not be rebuilt under the current scenario. I think we commented on, in particular, the recruitment, in terms of why that is not happening. Any other comments?

DR. SHAROV: In my mind, the principle reason is the higher than required fishing mortality rate rather than the lower recruitment. We have not achieved our principle goal of reducing fishing mortality to below FMSY, at or below FMSY. I think that's a stronger force than the recruitment in itself.

DR. BARBIERI: I just would supplement Alexei's point there and basically say that, to some extent, this uncertainty about potential connectivity with the Gulf and uncertainty about this episodic input of recruits may be giving us -- It's like what Mike E. pointed out before. It might be giving us like a wrong picture of where MSY actually is, and so, to me, this is a major source of uncertainty in future management. Until we can get this issue resolved, it's difficult to see what is the rebuilding level that we believe is most accurate to represent sustainability of the stock.

DR. REICHERT: I am pausing a little bit so Mike can catch up with the notes.

DR. SERCHUK: I have a comment, Chairman. I am getting concerned that we seem to be stressing uncertainty so much that it looks like we have no confidence in this assessment and no confidence in the dynamics of the stock. That is the feeling that I am getting. The comment that Luiz made that maybe the reference points are incorrect suggests to me that we are losing the integrity of this assessment.

DR. REICHERT: I disagree with you. We are asked as an SSC to comment on the uncertainty. That doesn't mean, if we identify the uncertainty, that we imply to dismiss the assessment, and so I respectfully disagree, but Luiz had a comment to that point.

DR. SERCHUK: Okay, but I am suggesting that it could be read the other way, Chair. That's all I'm saying. We have a difference of opinion about it, but I think we need to stress those portions

of uncertainty that either have a significant impact on the assessment results or have a significant impact on the reliability of the projections.

To my mind, those are the most significant aspects. Now we're getting into -- If we get into how certain are we of the biological reference points, then I think we have to put a caveat on that. Do we feel that we know nothing about them or are we comfortable that we may not know the exact value, but we believe it's in this range, and that's the sort of thing that I think is most helpful.

DR. REICHERT: We can clarify that language. All I was saying is that commenting on the uncertainty, which is what we were asked to do, does not necessarily imply that we are dismissing the assessment. If you look at the plot on page -- I think that's on PDF page 52 of Kyle's presentation. That indicates, the MCB indicates, that there is 0.3 and 10 percent of the runs that fall outside of the block that the base run fall in, and I think that's an indication in terms of -- That's one indication in terms of how confident we may be in the stock assessment, in terms of our faith in the stock assessment.

DR. BARBIERI: If I may just clarify my comment. Fred, I am surprised, because you're a lesson-learned, right, type of guy. You told us that you are lessons learned, and, basically, I think we need to recognize that the definition of best scientific information available and the fact that the assessment team and the assessment panel had in front of them, and this committee as well, in terms of all the science that is needed to address issues that had not been even anticipated in this assessment, and so I think that this assessment captures well the retrospective dynamics of the stock.

It is appropriate, but some discussion of issues that -- If we don't make a recommendation about something that we feel might be really, really important in the future, I think we are ignoring an opportunity to improve on the process, and so I don't want to overemphasize the uncertainty, in the sense of not considering this assessment valid. I think it is the best scientific information available. However, there are questions about -- This is how science works, right? Tomorrow, we should know more than we did today and yesterday.

Moving forward, there is a direction here that suggests that stock structure and recruitment inputs are two issues that need to be further explored, and that those issues could be critical in identifying what the true productivity of the stock is and how our idea, current idea, of the estimates of reference points are, and so it's basically -- This more in line with the last bullet that says how can we make recommendations for research into the future of issues that can be addressed, so the next time that we do this, we do it with an even better informed set of data and all of that.

I get your point, because, with council members here and in the presentation to the council, perhaps the tone of our report might give the wrong idea, and so I appreciate your comment that allowed me to clarify on this issue, but it's just something that I think that we need to be aware of, that it is the role of this committee to identify potential improvements for the future, as far as research results and data for future assessments.

DR. SERCHUK: I am a little bit surprised now. If those people that were familiar with this resource thought that stock ID was a problem, or was a large source of uncertainty, that should have been in the terms of reference, quite frankly, and I'm a little bit taken aback now that we're

talking about things -- We talked about some other stocks yesterday, where stock ID was, first and foremost, a large source of uncertainty.

We made sure, talking about those assessments, that those be looked at as part of the assessment, and I didn't see that in this assessment, quite frankly, and now to come back and say, well, gee whiz, stock ID is an important thing, stock ID is an important thing in almost all assessments. Some we know more about stock ID and some we know less, but I am thinking to bring it up now -- Sure, we can talk about stock ID in all of these stocks, but I am just thinking that it's most helpful then, if we feel that stock ID was an important thing, to have it upfront in the terms of reference and not on the backend and saying you didn't consider it or it was a big issue. That is where I am having some difficulties.

In terms of the research recommendations, there are six or seven bullets that the group put together that I think cover some substantive areas in which we felt further research could clarify some of the uncertainties, and I asked people to look at page 30 and 31 of the report, because I think the group spent some time deliberating about what are the things that we believe could give the biggest bang for the buck in the future to try to improve the data that went into the assessment and some of the techniques that were used. Thank you.

MS. LANGE: I think you touched on this a few minutes ago, Marcel, but identifying the uncertainties is one of our terms of reference, and I think that's what we're doing, but, in the assessment, each of those items that we have been raising -- Not the stock ID, but the issues relative to recruitment, whatever the issue was with recruitment -- Just now, we were talking about stock ID, but there were other issues, other reasons, for these spikes that were discussed.

Anyway, the assessment handled these by all of the sensitivity analyses, and so each of the areas of uncertainty were addressed in the assessment, and so I don't think that, by identifying the uncertainties, we are disregarding the results of the assessment. We are supposed to identify where those were and acknowledge that the assessment addressed those through the sensitivity analysis. That is my perspective.

DR. REICHERT: Okay.

DR. SHERTZER: I wanted to comment on this idea of the effect of this recruitment pattern on benchmarks, in particular. I think Fred pointed out one of the primary patterns, is this relatively low variation in the recruitment, and then we have these couple of years of the big spikes that are, at this point, unexplained, but there appears to be evidence in the data for these big recruitment events, but they're small, in terms of the number of them.

This is accounted for in the assumption of log-normal distribution. We would expect to see some outliers like this in the log-normal. If you go to the next slide, I think you can get a sense for what effect the variation has, the estimated variation has, on the benchmarks, and so this is -- The benchmarks are coming from the spawner-recruit curve, and this is what the expected, the bias-corrected curve, and the dash where the benchmarks are coming from.

If the variability were smaller, if those two spikes had not occurred, it's going to shrink the curves to be closer together, and so they're already pretty close right now, relative to what we typically see, because of that pattern of low variability in the recruitment, but the effect of those two points,

if you want to think about it in this context, would be -- Without them, those curves would be closer together and, so, in other words, the uncertainty in the benchmarks, due to those two points, is pretty low.

DR. REICHERT: Thanks, Kyle. That's a good point to make. Kyle, the second part of this bullet point, comment on reasons why progress differs from projections, obviously recruitment may be part of that, and do you feel -- Well, we looked at that. I am thinking out loud here, but whether the differences in the two models, the changes you made --

DR. SHERTZER: No, I think it's recruitment. At the end of SEDAR 19, we had no indications that future recruitment was going to be low, and so the assumption of expected recruitment seemed reasonable then, but it didn't play out that way.

DR. REICHERT: Remind me that you used the average recruitment for your projections, correct?

DR. SHERTZER: Yes.

DR. REICHERT: Okay. Thanks.

DR. SHAROV: I would remind you that the projections were made using a 0.75 of FMSY that was estimated back then, for 2008, was 0.166, and so that's what the projections were based on. The estimated fishing mortality for the seven years, plus three more years, to go to 2020, was three to four times that. What is the most important factor of underperformance? There is probably no need to argue, and Kyle could probably easily check that by running the projection both ways and seeing, but we identified both sources of the underperformance.

DR. REICHERT: Any other thoughts? Let's move on to the next bullet point, and that's provide our fishing level recommendations. That is asking of us to apply the ABC control rule and complete a fishing level recommendations table. The ABC control rule -- Correct me if I'm wrong, but this is now a Level 1 stock, and the uncertainty is Tier 2, and does anyone have any comments? Mike is pulling up the ABC control rule, so we can all take a look at that.

The first level was a 1. The uncertainty characterization is high. That is because of the environmental conditions. They were included in the indices, in terms of looking at the effect of temperature, but I think that's the only inclusion of environmental conditions in this assessment, correct?

DR. ERRIGO: What did you say for Level 1, assessment information?

DR. REICHERT: 1.

DR. ERRIGO: I only asked because, in previous assessments, when age is in an input variable, that basically -- You guys discussed that that was basically setting a proxy for MSY values.

DR. REICHERT: You are absolutely right.

DR. ERRIGO: They are not freely estimating steepness or any of --

DR. REICHERT: Thanks for catching that. Yes, and so that's a Number 2, because we have a proxy. Thank you. Stock status, and so Number 2 was 2, and Number 3 was overfished and overfishing, and that is a 4. Then Number 4 is -- I looked it up, and the PSA score is a high, and we generally kind of pause there to take a look and see if we feel that any of that information in the PSA score has changed relative to what was published. Looking at it, I couldn't think of anything, and so I still believe that that's a high-risk stock. Any questions or comments or concerns? Mike, where does that get us? That is an overall score of 22.5.

DR. SHAROV: I have a question, just for me. I have not spent that much time going through the ranks here, but how is it defined -- Like, for example, you characterized this as a low productivity, and what would be the moderate productivity stock compared to this? Why is this one defined as low productivity? What is the criteria?

DR. REICHERT: There is the -- Remind me of the report name. The Lenfest Report that we take our PSA scores from. What we have done in the past is take those scores and, unless we feel that, in particular, since the completion of the report, information has become available to change the score to either a high or a low risk, and that's what we've done in the past, and there is a variety of factors that is taken into account. For instance, maximum age and reproductive strategy and size -- Help me out, anyone, with what are other --

DR. SHAROV: So it was already predetermined, right, that the species was --

DR. REICHERT: Yes, that is already predetermined.

DR. ERRIGO: With red grouper, it is in a rebuilding plan. We can recommend probability of rebuilding. However, from what Kyle showed us, the current rebuilding plan is supposed to go to 2020, and, even at F equals zero, it's not able to rebuild within that rebuilding timeframe, and so we're going to have to -- There are going to have to be changes that are made.

I am not sure what the criteria are. It may fall under the same category as red porgy, where, if you're unable to rebuild within the rebuilding timeframe, you can set it at the 75 percent of FMSY until it's able to rebuild, and so we may be able to do that. This is kind of a special case here, and I'm not sure if we will be able to reset the clock on red grouper. I am not sure how that would work.

DR. REICHERT: I am not sure how that works.

DR. BARBIERI: I think that, in terms of what happened with red porgy, we set something in the interim that supposed to be an interim value that was yield at 75 percent of FMSY until the council revisits the issue of setting up a new rebuilding plan that will set the clock again, because, right now, we don't have an estimate of F rebuild, and so, to that extent, just since I have the microphone, I think that Scenarios 2 and 5 that Kyle presented on Slide 68, and so it's yield at F equals 75 percent of FMSY, by considering expected and low R.

DR. REICHERT: It's PDF 68 of the presentation. I would agree with that, and that's actually the next point I was going to make, in terms of the scenarios. I think that is a reasonable recommendation at this point, until the council has come up with that plan.

MR. HARTIG: For your risk analysis, just for us, could you elaborate a little bit more? Could you document why you think red grouper -- You mentioned some of the reasons of what is pointing in that direction, but what is it in red grouper that makes it a higher-risk species? Do you understand what I'm saying?

DR. REICHERT: The PSA score?

MR. HARTIG: Yes.

DR. REICHERT: Yes, we can -- I think we can look at the report and go through those numbers, and we can potentially pull that up later, or I can distribute that, and then we can comment on whether or not we agree with the current scoring. Is that what you're asking?

MR. HARTIG: Yes, but I just -- If it is a risk and you figure that out, I just would like to know what -- Well, you'll have it document, and so it will be in the report.

DR. REICHERT: When we complete the report and talk about that tomorrow, remind me that we pull that up, and we can check if there is any red flags that may cause us to reconsider that. Thank you. Any other comments or questions?

DR. ERRIGO: To be clear, the recommendation would be an ABC value at the yield at 75 percent of -- With projections at 75 percent of FMSY, and so first is do you have a recommendation of recruitment scenario or how to determine which recruitment scenario the council should use? Two, for OFL, would you recommend the projects at FMSY, F equals FMSY, if these are ABC values?

DR. SCHUELLER: All right. I am confused about what's going on. First of all, the math up there isn't correct, and so the P* is 22.5, and so the P rebuild is not correct either, and so ten plus five plus 7.5 is 22.5. I see. So what are we doing? I guess I'm not sure where we're going, and so we have established a P*, and do we now request some P* projections and then decide the recruitment scenario?

DR. ERRIGO: The issue is that, under F equals zero, it doesn't rebuild, and so you can request that P* value, but it won't rebuild, and that's why I was saying this is kind of a special case. I don't know what the F values are and the P* value is. You could do that. You could ask for projections at the P* values. It's completely up to you.

DR. REICHERT: Amy, you still look confused, and so that doesn't address your concern or does it?

DR. SCHUELLER: I am just not sure exactly what we're doing, and so maybe Luiz is going to comment on that.

DR. BARBIERI: Since this is a rebuilding stock, and there is a rebuilding plan in place, there should be an estimate of a rebuilding timeline and an F rebuild, but, in this case, as this assessment just was completed, they realized that, if they followed that trajectory of F rebuild and that same rebuilding trajectory, the stock is not going to rebuild. Basically, this triggers a response from the agency to I guess recommend to the council to do another rebuilding plan, because this stock is not expected to be making positive progress towards rebuilding. In this case, where there is no F

rebuild, what we are doing is presenting some interim catch levels until this issue of a new rebuilding plan gets resolved.

DR. SCHUELLER: So do we have to provide an interim catch level? I mean, how long is this rebuilding plan going to take? Don't you have a certain amount of time in order to implement that? I guess, in my mind, it seems like the council would want to avoid doing two things here instead of just doing one, but all in the same amount of time.

DR. REICHERT: I guess what you're basically saying is that this is a different recommendation. This would be then F equals zero, to close the fishery, and there is no fishing in 2018 and 2019 or however long it takes, and the fishery gets completely closed, because, if we don't make that recommendation, they won't be able to --

DR. SERCHUK: The stock can rebuild. The projections show that, but it can't rebuild by 2020, and so let's get that in the bullet points, because, if you look again at page 28, it talks about the different scenarios for the rebuilding, and so I understand the current rebuilding schedule was meant for 2020. Clearly if the stock won't --

DR. REICHERT: Fred, sorry to interrupt, but page 28 of?

DR. SERCHUK: Page 28 of the document, A-11. There is a paragraph in the middle on projections. They talk about, if recruitment remains low, that stock recovery is expected to be slower. With reduction in F from the current level to FMSY or 75 percent of FMSY, there is no chance of recovery by 2030 and so on and so forth. It's all laid out here, quite frankly, and I don't know whether they need a --

We have also been told that a stock can't rebuild with one generation time, and I thought the generation time was fourteen years, and we know that stock cannot rebuild in fourteen years, and these are provisions that can alter your rebuilding plan now, and I think we need to think about it in that context, because clearly the current plan is insufficient, based on the new stock assessment, and so there are ways to move forward with extending the time period for rebuilding, because, even at F zero, you can't do it within one generation, and I think those are the scenarios that we have to put in our comments, Chair.

DR. REICHERT: Fred, can you please explain -- I'm sorry, but either I am going to have to ask Kyle to come back, but, Fred, can you explain -- There is a rebuilding plan in place for red grouper, right, and that rebuilding plan is expected to have the stock fully rebuilt by when?

DR. SERCHUK: 2020 was the date.

DR. REICHERT: Right, and so do we have any scenario that rebuilds by 2020?

DR. SERCHUK: No, it's impossible. That's the reason that I suggested that a date needed to be put in here, because the current rebuilding plan, I thought, expected the stock to be rebuilt by 2020.

DR. REICHERT: So what Fred is -- I don't mean to put words in your mouth, but I think what Fred mentioned earlier, in terms of there is -- We can rebuild, but not under the current plan. That would be a new rebuilding plan. It's my understanding, of the way things work, but someone may

come to the table and correct me, that we can potentially recommend scenarios, and I think we probably should, to the council under what conditions we could potentially rebuild, but doesn't it require a new rebuilding plan? John, help us out.

MR. CARMICHAEL: Not to overcomplicate things, but you have a rebuilding plan that was supposed to be done in 2020. You have proven now that it can't be rebuilt in 2020, even at F equals zero, and so you state that. That means the council needs to consider a new rebuilding plan and how to respond in the face of a rebuilding plan that's not going to do what it should do in the time allotted.

The Magnuson Act gives the council guidelines of what to consider when you have an existing rebuilding time that's not making adequate progress. It talks about criteria the council has to consider, and then they have the option of developing a new rebuilding plan, and so that's where I think Fred's comments of noting the time that it takes from where the stock is now to rebuild at F equals zero, how that relates to a generation time, those are all the important factors the council needs to weigh when it considers what's its new rebuilding time.

It's going to have to have a Tmin and a Tmax that specify the quickest and the longest that it can rebuild, and, somewhere in there, it's going to pick the appropriate rebuilding strategy. That is really all that you guys need to worry about giving them, because the council is going to get a letter from the agency that says they need to address this stock and having a timeline. They will prepare an amendment that does all of this, and they will bring it to you look at, and they will have time to work how they deal with this.

I don't know whether or not they will consider doing anything interim. They can. They can take emergency action or they can do other things. That is something for the council to consider, but, in this case, where the landings are so much lower than the ACL, it's most likely that they will just try to continue with the basic regulations that they have in place at this point while they work out what to do with the plan, but they may decide to do something precautionary. If they were concerned that maybe a good year class were on the horizon and that might get exploited and they want to protect it, that could be a reason to do something, an interim rule or an emergency action or something, but I think, for now, just get some of the basic parameters in place and the council will figure out how to deal with it.

DR. SCHUELLER: So I think that answers my question. We don't have to do anything in the interim. We can just recommend a new rebuilding plan. That makes sense to me.

DR. REICHERT: Yes, thank you, and that's why I -- Thanks for that clarification, John. Now I think it's still --

MR. CARMICHAEL: Actually, you should recommend that the existing rebuilding plan will not work and the stock cannot be rebuilt under the parameters of the existing rebuilding time even at an F equals zero. If you state that, that's the probably best way to move forward.

DR. REICHERT: Okay.

DR. SERCHUK: I would like for us to be a little bit more helpful, and I would like us to look at the third paragraph on the projection page. It says, if projected fishing rates were modified in

2019, the F equals zero scenario achieved recovery with at least 50 percent probability in 2025 and at least 70 percent probability in 2027. Then it goes further and says, with fishing rates of F equals 75 percent FMSY, starting in 2019, recovery was achieved with at least 50 percent probability in 2032 and at least 70 percent probability in 2036. I think that is the sort of bounds that we can provide without recommending any one of them, and I think that's helpful to the council.

DR. REICHERT: Okay. Anyone else to that point?

MS. LANGE: I agree that it's in the assessment and there's no reason not to include two more sentences, just to give them a range based on the outcome of the assessment.

DR. REICHERT: I agree with you, and we can certainly add that. The other thing is I think that it would be helpful for us if the council considers projections that possibly, at least -- Until there is an indication that recruitment has changed, that it would probably be good to consider a low-recruitment scenario at this point.

DR. SERCHUK: To that point, Chairman, I think the last bullet on page 30, under comments on the projections, might also be included. It addresses exactly what you talked about.

DR. REICHERT: I agree. Thanks.

MR. CARMICHAEL: We were just saying one of the options available to the council is to maintain its current rebuilding plan approach. Right now, it's based on 75 percent of FMSY, and so the projections that you have on that are one way the council could move forward on catch limits, because that's the existing rebuilding time, and so having some sense, as Fred mentioned, about what recruitment level is probably a good estimate for those projections would be helpful information.

DR. SHAROV: I would just remind you that -- I agree, in general, with the recommendations that were proposed here, but keep in mind that, the projections that are based on the lower recruitment, that is one of the options that should be considered as the risk-averse projection, but, nonetheless, we have no idea whether the recruitment is going to continue to be at that low level.

We have the history that shows us that, in a short three or four years, the population could recover. That is what we have observed in the early 2000s, and I am not saying that this is exactly what is going to happen, but that has to be evaluated in the probabilistic terms, which it is in the assessment analysis of the uncertainties, but you just have to remember that you clearly describe the assumptions that you are making in making those projections, and I guess that's what I am trying to say.

DR. REICHERT: Thank you for that, and I agree, and I think that actually gets to the next bullet point, because I think that may be important, is what indicators and metrics should the council monitor and could the SSC evaluate to evaluate the stock until the next assessment, and so what can we use as indicators that recruitment may have changed that may provide us an indication to potentially recommend or change our recommendations to the council, in terms of fishing levels? Then is there a recommended trigger level for these metrics? Currently, given the information, I am not entirely sure what we could use. We have the landings in the fishery-independent index, and I am not clear as to how we could formulate triggers.

DR. SERCHUK: Earlier, I think there was some discussion about discards of younger-age fish. Assuming that that was monitored and there was a large increase in the discarding of small fish, that might be some indication that recruitment has improved. If that scenario is true, I think that might be a useful way of trying to get some qualitative handle on whether the recruitment has resulted in a good year class, or a better year class.

DR. REICHERT: Yes, I agree, and I think that's a good idea. I am thinking about the fishery-independent. I don't think we get a lot of age-one or two in our survey, and so, in terms of an early indication of recruitment, that may not be useful, and are there other potential indicators or metrics that we could use?

DR. SCHUELLER: I don't really know if this is one or not, but something that I keep looking at is the landings are not anywhere close to what the ACL is. I think one sector was 13 percent and one was 37 percent, and we've discussed this in the past, and so not only are we concerned about those yellow landings that go over, but why are some species so far below? Maybe that could be because they're just not targeted and they're sort of randomly-happened-upon species, but maybe it's because -- Perhaps, in this case, recruitment has been low and there just aren't any fish out there, and so you start to wonder why, year after year, are we not getting anywhere near the ACL, and so that might be one thing that we could look at, and perhaps for other species as well, to have those discussions on a more general basis.

DR. REICHERT: I think that's a good point, and maybe you will remember that the fishermen, as Ben and others have mentioned, the fishermen have told us, for a while now, that they just simply can't catch them. Then, when that changes, that could be a signal that something is changing in the population that may be related to recruitment.

One thing I thought is if the -- That gets to Fred's point for the discards, because you always have that information, but if the landings are zero, then you miss that signal, and that was one of the earlier conundrums we got into with red snapper, for instance. You lose a potentially valuable data stream. I see several hands.

DR. SEDBERRY: I was just going to ask if there are any state seagrass or other kinds of inshore estuarine monitoring programs that might be picking up red grouper that could provide an index of recruitment.

DR. REICHERT: I am not aware of any.

DR. BOREMAN: To your last point about looking at catch, or Amy's point that you were expounding on, you've got to temper that with the distribution of the fishery, because the fishery itself may change its spatial distribution and therefore accidentally or purposely wind up on a load of fish that weren't targeted or weren't caught in the past.

DR. REICHERT: I think, and we will talk a little bit more about that later, but that's I think where, potentially, those fishery performance reports may play an important role in informing us to those processes, and so I agree with that.

DR. SHAROV: The goal of the rebuilding is to rebuild the spawning stock biomass to MSST. Why are we talking about monitoring recruitment? The projections that we have are based either on the average recruitment for the full time series or the lower recruitment, the most recent period, where we assume a current lower recruitment level. What you're looking at -- All you're trying to do is reduce fishing mortality. If you reduce fishing mortality, you are supposed to see an increase in the relative abundance of your exploitable stock.

Where are your survey indices? Where is your video and trap index? I think that's the area where you should look at. The size and age structure of the catch, that's the area that you should look at. That does not require a full-scale assessment, but these are the sources of information you're going to have on an annual basis, and you should be able to see whether you are progressing or not.

DR. REICHERT: I completely agree with that. The only reason I said what I said earlier is that there is a lag, because we are not catching the one or two-year-olds, and so, by the time we see that signal, that is three or maybe four -- If the population increases, you would see that signal, and so I agree with you. Just the caveat is there will be a little bit of a lag in the current fishery-independent survey.

DR. BUCKEL: I just wanted to get away from the landings. You have this fishery-independent survey now, and that's what I would put the emphasis on, as well as getting the earliest look as possible, which would be the age-one discards. Those are the two that I would put the most weight on, and I think another important point to make to the council is this -- It's been a long period of low recruitment, and so the spawning stock biomass that's out there, there has to be some teeth to protect that, to get some good recruitment years, and so there is a time issue here, that if you let the fish that are out there now, that spawning stock biomass, those die out without getting a good recruitment, that's not a good thing, and so it's a particular issue here because we've had this long string of low recruitment, and so that's just another issue to emphasize to the council.

DR. REICHERT: All right. Thanks. The last bullet point is to review the research recommendations. They were in the report, and we discussed a couple. We elaborated on a couple during our conversations. If there are any additional research recommendations that anyone may have, we can include them in our report. Does anyone have any additional research recommendations at this point? Okay.

Then the last bullet point is to provide guidance on the next assessment, addressing its timing and type. I think that depends on the rebuilding strategy that the council is choosing, but, given the recruitment issues and some of the other issues, I would argue that it may be necessary to not let an update -- Not let too much time go by for an update, and I am thinking this probably -- I feel this probably may need to be revisited in three to five years, but what is the feeling of the committee, in terms of the timing and the type of the next assessment? No strong feelings?

DR. SERCHUK: I have no strong feelings, but, because we have some research recommendations, it seems to me that we ought to plan the next assessment at a time which we expect that some of the research recommendations will have been addressed. Just putting a time forward without having an understanding of the time it will take to address some of the research recommendations, which are all aimed at sort of an improved understanding, I think should go hand in glove. Thank you.

DR. REICHERT: I agree with you, and I think we not always make that recommendation, because we put a timeframe in there, but sometimes, unless some of the essential information is available that addresses some of the shortcomings of the previous stock assessment, we may not be moving forward, and so thanks for adding that. Anyone else?

DR. GRIMES: We have talked all around these research recommendations, and so maybe it's already in there somewhere else, but it seems that it's appropriate that you would examine these aperiodic pulses in recruitment and whether those co-occur in other species and possibly explanations for those.

DR. REICHERT: Yes, and I couldn't completely remember all of the research recommendations in the report, but I don't believe this one was specifically mentioned in there, and so that's a good point, and perhaps looking at some other species and see how prevalent those episodic recruitment events may be.

DR. GRIMES: It just reminds me of -- In the Gulf of Mexico, when I was in Panama City, for years we sampled in the seagrass meadows, looking for juvenile reef fish, and the vast majority of what you caught was gag and gray snapper, but, in the extreme southern part of the Gulf of Mexico, at least for gray snapper, it seemed to be uncoupled from the rest of the Gulf of Mexico, as if the recruitment processes down there were being influenced by something that wasn't going on predominantly in the Gulf, and so I mean that would be a reasonable thing to look at.

DR. REICHERT: Thank you.

DR. BUCKEL: I've got a couple other research recommendations that, if the group thinks they should be included, then great. If not, that's fine too. One would be the changes -- The proportion that are female and then the age at maturity and if there's been any time dependence. Right now, those are fixed across all the years of the assessment, and it would be interesting to see if there has been any change there, if we lost all the males, for example, in recent years or if those have really dropped in percentage.

Then the stock assessment model showed real sensitivity to -- The benchmarks showed real sensitivity to the natural mortality, and it would -- I think that's another research recommendation, to look at other methods to estimate M besides the life history approaches.

DR. REICHERT: Thank you for those, and I fully agree with them, and one of the bullet points does address the protogynous life history, but looking at sex ratios and potential changes over that. We have seen it in gag, where it was very low, and, after management regulations came into place, it actually increased, and so I would argue that that's possibly a good indication, in terms of what is happening with your population.

DR. BELCHER: Just a comment to the next assessment, on what Mike was typing, as far as we were recommending an update assessment for three to five years, but then, the statement below, the recommendation is contingent on successful completion of some of the research recommendations, but an update wouldn't necessarily require any of that. That would be more to if you were doing a standard or a benchmark, and so just to provide that clarification.

DR. REICHERT: Yes, and thank you for that, and obviously what new information will become available will probably dictate whether or not an update or maybe even a research track would be most appropriate, and so thanks for that.

MR. HARTIG: To Church's point about the recruitment spikes, I just went back and looked at golden tilefish in SEDAR 25, and the same spike -- It doesn't exist in the next assessment, but that was a period of time -- This 2004 and 2005 hurricane season timeframe keeps creeping up, as far as immigration versus recruitment, and so somehow, down the line, we need to try and figure out what happened in those years and how important it was, this question of -- We need to find out if immigration was important, because, if you go back and look at the age classes and things, I think you could probably figure it out in time, and George mentioned hogfish as well, and that would be another one that would probably have had some immigration impacts through the hurricanes.

DR. REICHERT: Thank you, Ben.

DR. SHAROV: This is not exactly a research recommendation, but, in my mind, it is, and one of the most important things that we would want to learn from this stock is to see how it will respond to the reduction of fishing mortality to the FMSY. Even though it's just -- 0.75 FMSY is one of the potential recommendations that we discussed, but it is actually the best research recommendation, from which we can learn how the population will respond. Otherwise, there is no point of simulating this, and it's the greatest source of uncertainty.

We don't know how the population will actually respond compared to what the model tells us, and the same with the MSST or SSB MSY. What troubles me always in cases like this, which we have a lot, is where we have the target that we have not seen yet in the whole history of our observations, and that is the largest source of uncertainty. Had we seen the population being at or above the SSB MSY, I would have much more confidence in it.

Very often, unfortunately, we have the one-way, downhill sort of time series, and then we're trying to set this goal of achieving this bright shining star, and that is another source of uncertainty, and so, while SSB MSY is a long-term sort of experiment, but the reduction of fishing mortality to the FMSY or nearby, that is certainly the best research recommendation we could offer.

DR. REICHERT: Thank you for that. Let's break for lunch. It's 12:30. Let's be back here at 1:30, so that we can start on tilefish. I just want to mention that I really would like or expect that we will get very far into the ABC control rule this afternoon, and so just as an FYI for this afternoon, and so enjoy lunch, and we will see you back in an hour. Thank you. We will recess.

(Whereupon, a recess was taken.)

8. TILEFISH

DR. REICHERT: Welcome back. I want to remind you that we switched the agenda items a little bit, and so, for the record, we will now discuss Agenda Item Number 6, Golden Tilefish ABC, and I want to remind the committee that John Boreman was an assessment panel member, and Anne was the review Chair. The other committee members that have gotten this assignment was Church,

Genny, and Laura, and so I hope they can assist us, in particular, with writing the report, but that doesn't mean that others shouldn't contribute.

We have actually two review actions. One is to review the updated tilefish projections that Dr. Williams will provide us with in a little bit and further consider fishing level recommendations and then compare and contrast the risk and uncertainties with establishing an ABC for tilefish and the yield at 75 percent FMSY versus that provided by the P* analysis.

DR. ERRIGO: I will go over this briefly and show you what we have for projections. At the December meeting, the council expressed their interest in having a little more flexibility in selecting the risk for overfishing in the ABC control rule. In anticipation of that, they asked for several more projections to be run at different levels of P*, and so we now have projections at P* of levels of 30 percent, 35 percent, 40 percent, and 45 percent total to look at.

Those were provided to the council at the March meeting, and they had discussions there, but they also discussed several things that were unknown in the SEDAR 25 update that you guys looked at, specifically that there was a change in targeting in the longline fishery in tilefish. They started to target larger fish in recent years, which was seen in the composition data, when we looked at that at the update.

However, because it was an update, they simply assumed the same selectivity pattern for all the fleets across the entire time series, and that resulted in -- What it did is it resulted in estimating a lower stock biomass and lower levels of productivity for the stock in the terminal year. Another issue that had come up after the update was run was the issue that we talked about with the composition data, how the composition data was estimated using the Dirichlet multinomial instead of the robust multinomial, and so, in SEDAR 41 and SEDAR 36, red snapper and snowy grouper, as well as this update, the robust multinomial was used. However, in SEDAR 25, the original multinomial distribution was used to estimate the composition data.

Since then, we have learned that it's suggested that those not be used and that instead the new Dirichlet multinomial or some other fitting method be used, because they can be biased. They can give biased results, which is why red grouper used the Dirichlet multinomial.

Because of those two uncertainties and those two new pieces of information that have come up, the council has requested that a new assessment, a new update, or standard perhaps, be run for golden tilefish to incorporate these differences as well as the most recent data. In the interim, they asked that the council consider an interim ABC as the yield at 75 percent of FMSY from the projections, 75 percent FMSY, until that assessment can be done.

We were hoping that that assessment -- It was requested that the assessment be done in place of the MRIP revisions, which were supposed to start happening at the end of this year, but, as you guys heard yesterday, that is not going to happen, and so we're not sure exactly when that tilefish update will occur, but it's a very high priority for the council.

What we have here is these are the projections with management starting in 2019, and so these are projections at P* of 35 percent, and so 2015, 2016, 2017, and 2018 are all interim years, and then 2019 is when management starts, and so that's when the projections actually start. Here are the landings in pounds gutted weight, in thousands of pounds gutted weight. In 2019, it would be

258,000 pounds and then they actually go up from there, and you guys have this. This is Attachment 10.

Then there is P* of 40 percent, and, of course, those are a little higher, at 294,000 pounds in 2019. Then P* of 45 percent. There is also -- They reran the P* of 50 percent in 2019, since that was the SSC's recommendation for OFL. You guys have that. That's Attachment 10, and I also just emailed to you this. It's just two slides, and it's actually from the update, which you guys had in your briefing book from April of last year, and you may have actually had it multiple times, in multiple briefing books, but I just pulled the projections.

These are projections for F equals FMSY and also F equals 75 percent FMSY. The one caveat is that these projections are done at -- They are assuming that management will start in 2015, because these were from the original update, and so they have not been rerun with management starting in 2019 using the landings that we have for 2015 and 2016 and then assumptions for landings in 2017 and 2018 or anything like that, and so we don't have those projections. The council would have to request those if you recommend something like this as an interim ABC.

DR. REICHERT: Thank you, Mike. Any questions or comments?

DR. GRIMES: This is a question. Were the SSC members who were sitting on the review panel, were they satisfied that those caveats about the way that they've been fitting whatever it was, the length comps or the age comps, and that there were larger fish being targeted and harvested and were they satisfied that that was real?

DR. ERRIGO: One thing is this was an update, and so there was no review workshop. The SSC was the review panel. I am not sure, Marcel, if perhaps the --

DR. REICHERT: Sorry. That was the previous assessment, and so that was not for the update, because you're right that the update was done by the Science Center, and the SSC was the only review body for that update. Sorry. I should have mentioned that, but I was referring to the benchmark assessment.

DR. ERRIGO: I did provide documentation at I think it was the April meeting last year, and I can pull that up if you would like to see it, of the length and age composition data, and there is a shift in the ages selected for, or in the ages landed. There is a shift in the ages landed, and so in the age comps and in the length comps, from the longline fishery in the recent years.

DR. REICHERT: Correct me if I'm wrong, but I remember that we did talk about selectivities. However, we did not talk about the likelihood estimator, because that was something that came to light at the red grouper webinar. That was actually after the SSC meeting, and so we didn't have an opportunity to discuss that when we were reviewing the golden tilefish stock assessment, because that information was unknown to us at the time. That's just as a clarification to potentially jolt your memory.

That leaves us with our recommendations to the council and to the comparing and contrasting the risks and uncertainties with establishing an ABC for tilefish at that 75 percent FMSY. You may remember that, and I need to look up the figure, but one of our concerns was that the SSB over SSB MSY was close to the threshold, and so we expressed some concern, in terms of the

directionality of the spawning stock biomass, and we expressed some caution there, and so I just wanted to remind you guys of that. Are there any concerns or comments on the risk of choosing that 75 percent MSY versus that that was projected by the P* analysis?

DR. SERCHUK: The projections that are given in document A-10, which are the P* ones, are all very similar. They all seem to give pretty much the same results, with the proportion of projections being greater than SSB for the minimum greater than MSST by 2020, in all cases, and recognizing that everything up to 2018 is the same. The starting stock size is in 2019, and the recruitment in 2019 is the same. It's just that the percentages are a little bit different, and so I see very little difference, quite frankly, in the year in which this benchmark is attained. There are some slight differences in the landings.

What I have a problem with is comparing this to the FMSY and the F 75 percent FMSY, because the starting conditions are completely different. The recruitment is different, and so, right now, it's a little bit apples and oranges to me. The ones we have here in the document are all the same, and the ones that we have that were just provided to us give different starting conditions, and so I don't know -- I am looking for some assistance in how we might properly compare these approaches.

DR. ERRIGO: I just wanted to correct myself. These tables start in 2015, but the projections -- The management doesn't start until 2018. For the F equals 75 percent FMSY, they start in 2018. For the P*, they start in 2019, and so that's where the difference is. If we were to rerun the F equals 75 percent FMSY, we would have to add an additional year of landings or an additional interim year before rerunning them.

DR. SERCHUK: I am trying to compare the -- In the document A-10, if you look at all the four tables, everything from 2015 to 2018 is exactly the same in all of the runs, but those values for those years are different than the FMSY and F 75 percent FMSY runs, and that's what I am having problems in trying to compare the approaches.

DR. WILLIAMS: I think I can add some -- I can hopefully follow up on Fred's confusion. The 75 percent FMSY, if you take 75 percent of FMSY, that comes out to an F of 0.18. If you look at the P* of 0.4 and the P* of 0.45, the 75 percent FMSY will fall in between those, and so it's a P* of somewhere between 0.4 and 0.45. You can look at the fishing mortality values in 2019, which is when we would kick in management, and look at -- There is the P* of 0.45. It's 0.195. If you go to the P* of -- Then it's 0.17. 75 percent of FMSY is 0.18, and so it's going to fall somewhere right in between those. I hope that helps.

DR. SERCHUK: That just makes our job easier, as far as I'm concerned, because, in essence, from my perspective, none of the runs are substantially different, given the uncertainties in these projections. That is my summation of what these projections tell me. Thank you, Chair.

DR. REICHERT: Thanks, Fred, and I actually looked at it myself, and that's what I figured out for where that F 75 percent is, and so the question for us is do we feel that -- Obviously there is a clear increase in risk because of the -- Just because of the P*, but I think what probably we need to address is what is that level of risk of choosing one over the other, and what I am hearing you say, but correct me, Fred, is that, in terms of the risk, especially since this would be in place until

a new assessment, choosing one over the other, there is not a lot of difference. There is not a lot of difference in risk, correct?

DR. SERCHUK: That's correct. When I look at the probabilities in the right-most column here, I really can't see a difference between 0.545 and 0.526 or 0.518 or 0.536. Those differences, to me, are not meaningful. When it comes to statistical analyses, not only do you have to look at those values, but you have to look at whether these are meaningful differences, and without doing any statistical testing, but just knowing how projections work and so on and so forth, my feeling is they are not different. Well, someone might say, okay, if they're not different, let's go to the one that gives us the greatest yield, but that's a different issue.

DR. REICHERT: Yes, I agree, and that's, I think, what the council is asking us, in terms of, if they choose their risk tolerance, what would we feel in terms of the risk or the uncertainty, and whatever choice they make out of the options they have, depending on the council's risk tolerance, there is not a lot of difference.

DR. SCHUELLER: When we reviewed this update assessment, what P* came out of the control rule?

DR. ERRIGO: 30 percent.

DR. SCHUELLER: So what's the scientific basis for talking about any of these projections? We have a control rule, and we're using it, and I don't -- Why would we deviate from that?

DR. REICHERT: We may not want to deviate, but the council may want to deviate based on their risk tolerance, and, Mike or John, correct me if I'm wrong, but the thing is, if we are -- I think the dilemma is, if we are not doing anything, then, until the results of another assessment are available, the current regulations are going to stay in place. The other thing is the council has -- The two-year clock has started, John?

MR. CARMICHAEL: Yes, the letter the council received was December of 2016. That's when your clock starts.

DR. REICHERT: The council's clock, and so we are asked to comment on the risk of overfishing, but ultimately -- Sorry. Go ahead.

MR. CARMICHAEL: You have two bullets. You have one bullet on that, and you have one bullet asking about fishing level recommendations, and so what the council is asking is would you consider a fishing level recommendation for tilefish based on 75 percent of FMSY, based on the information that you have? That is what they are interested in doing, and they're talking about the uncertainties and the effects of this and the changes in this fishery and what they're looking at with doing it, and I think they've seen all the projections and realized that there is pretty small changes across the board, and so they're asking is what do you feel about their request to base ABC on 75 percent of FMSY.

Then they would like to talk about the -- You can talk about the risks and uncertainties associated with doing that, but, right now, you have an ABC based on a P* of 0.3, and the council has been interested in -- We'll talk about this in the ABC control rule, but the council taking more direct

control over establishing the risk tolerance for individual stocks. As an interim step in dealing with all of that stuff, they're asking you about 75 percent of FMSY with regard to tilefish and if you're willing to change your fishing level recommendation. If you're not willing to change your fishing level recommendation, you should tell them why you choose not to do that and talk about the risk and such associated with going with 75 percent of FMSY.

DR. REICHERT: Thank you.

DR. SCHUELLER: That's a whole can of worms, right? They want to move towards some other ABC control rule, but we don't have that right now, and so I don't think that we should be willy-nilly making random decisions for each species based on the fact that someday we're going to have a new ABC control rule. If it takes two years, we need to follow the control rule that's in place, unless there is a good, justifiable, scientific reason not to, and I don't see anything that's been presented that indicates that there is for this.

I understand there is a difference between management and science risk, and maybe that hasn't been divided out adequately in the current ABC control rule, but it's still the control rule we have now, and we can address that after we talk about this, and so that's my opinion. I think that this group should recommend that they follow the ABC control rule that they have in place.

DR. BOREMAN: Following along that line of logic, essentially what the council is asking us is do we want to change our ABC recommendation? Do we want to raise the ABC to a level of F equals 0.75 FMSY, which is substantially higher than our original recommendation of the P* equals 0.3? You're right that that's speculation, but I would assume that we're bound by the rules that are on the books.

MR. CARMICHAEL: But you can deviate, and you have, at times, set ABCs in different ways, and I think that's why they felt comfortable asking this question, and I think is it substantially different or is there very little difference between all the projections, as Fred stated, might become a critical point.

DR. SCHUELLER: Yes, but differences in the projections are not a reason to move from one to another. You have to have a reason based on some other external force, and so maybe an ABC has been set in a different way in the past. Hopefully there was a good scientific justification for it and not just because this time we feel like it or we would like to be riskier on the management side of things, because you're right that right now that stuff is sort of intertwined, but it is the control rule, and I guess I -- Leading into the discussion we'll have this afternoon, I am very reticent to be allowing a control rule such that every single species is going to become a special case, because then why have a control rule to begin with?

DR. REICHERT: Part of why -- Ben can correct me, but part of why the council requested us to take a look at this was the issues that Mike pointed out, where we are now in terms of the likelihood estimator and the selectivities, and so there were some questions there that they felt that potentially justified making that decision, and so that's the background or the potential scientific justification for us choosing or revisiting our recommendations and potentially choosing a different one. Your points are still valid, but that was my understanding, in terms of why we are where we are.

MR. HARTIG: Amy, your points are valid. I mean, there isn't anything you said that is not correct, but, from the council's perspective, when we got the last assessment, we had some concerns about recruitment, and so we set the catch levels at 75 percent of FMSY, which were lower than any of the P* analyses, because we wanted to be more conservative, because we hadn't seen the recruitment.

Subsequent to that, in 2012, there was a recruitment spike, a pretty darned big one, that we saw in our area. It actually showed up in the assessment. Now, it hasn't shown up in a long enough timeframe to track the cohorts yet, but it did show up, and so that is some of the reasoning, plus the additional things that Mike presented earlier, some of the thought processes, and I know science makes the determination, and you guys have an ABC control rule, but what we did in the past was set a real conservative estimate, a more conservative, or not real, but a more conservative estimate, and we were hoping to continue that trend in this one, which it is a little more -- It's a little less conservative, but, based on what we've seen so far in the fishery, we think that we could tolerate that until the next assessment, until we get the next assessment, where all of these different things can be considered.

I know that it's post-assessment information, and you really don't have any responsibility to take that into consideration, because you had an assessment, and you made a decision, and you could go forward based on what you've already said, but I am just trying to give you a rationale of why the council has asked you, asked the SSC, to deliberate this one more time.

DR. REICHERT: So what is the pleasure of the group?

DR. SERCHUK: I think the pleasure of my group would be to do exactly what the actions are specified in this, is that we reviewed the tilefish projections. We noted that the P* projections -- All of them were very similar, and, from what Erik has said, very similar to that that would be given under the 75 percent. That actually is Number 2, and then I would just simply point out that the SSC has recommended in the past that the 30 percent P* was our recommendation, full stop. I don't think we have to go further than that.

DR. REICHERT: Okay. Thank you for that, Fred. Chip, Rob has a question or a comment via webinar.

DR. AHRENS: I just want to say that I agree with Fred, and this relates back to I think something Fred said at the last meeting, which was if these declining catch recommendations, as we project forward into the future, are becoming an issue under high uncertainty, it really does point to maybe having to update the assessment a little more frequently if those are causing certainly some friction. Thank you, Chair.

DR. REICHERT: Thank you, Rob. Your recommendation is for the committee to confirm our earlier ABC recommendation?

DR. AHRENS: Yes, that's my recommendation.

DR. REICHERT: Thanks, Rob. Fred, I assume that that's consistent with what you, and also what you, Amy, said. Any concerns by the committee? Any other thoughts?

DR. SERCHUK: I would just point out an issue that comes up in other management forums, and that is, when you have a step increase, or a step decrease, as we have in all of these projections, that is when you go from 2018 to 2019, when the first year of management comes in, under certain management forums, they say we don't want our TACs to change by more than 30 percent in one year or 40 percent in one year.

If you look under, for example, the 0.35, you see that the differences in catch are halved in one year and the differences -- That's because the fishing mortality is halved in one year, and that's because there is not a stairway down. It's you go from the tenth floor to the first floor in one fell swoop. It's been argued, in forums that I've been at, that that's economically disruptive, and I will let Scott speak to that, but, typically, they don't -- Basically, it takes time for the fishing industry, in some cases, to get accommodated to abrupt changes in catches, and so they often -- In some management forums, they put bounds on it. We know we have to go lower, but we're only going to go -- The maximum amount of change in any one year will be -- Then you pick the number, 30 percent or 40 percent, and so on and so forth.

I think, to be realistic sometimes, that might be a consideration. I am not saying that we have to think about it here, but I am just letting you know that's the type of consideration that I have often seen in other management discussions. Thank you.

DR. BARBIERI: I just want to perhaps add here that we may want to suggest -- I am looking at the SEDAR schedule and considering that the end of next week will be the SEDAR Steering Committee meeting. In this case, we are saying, no, we are not willing to change our previous ABC recommendation that was based on application of our control rule, and perhaps one way for the council to address this change in conditions is the situation that Ben pointed out, with perceived additional input of recruits, would be for the SEDAR Steering Committee to prioritize this assessment coming up for golden tilefish that can incorporate that new information. John and I were just talking about the type of assessment.

DR. REICHERT: Exactly, and I think that's an important aspect of this, too. If we feel that this can be handled as an update or as a standard assessment, because it -- John, can you speak to that?

DR. BARBIERI: What I meant by new assessment wasn't a benchmark.

DR. REICHERT: John, would it be good for us to consider whether that should be an update or potentially a standard or that is a phase that comes next?

MR. CARMICHAEL: You could if you have a strong feeling one way or the other. I think you see the items that the council laid out of concern with the assessment, based on the earlier discussions. They requested it as a standard, to allow for consideration of the selectivity changes.

As you have seen, hopefully, in the briefing material documents, the council asked that this be placed in 2017 in the MRIP slot. The Science Center said that's not really practical, and so I expect the South Atlantic contingent will ask the Steering Committee to try and fit that in somewhere else, and so this is yet another thing that puts 2018 in a great deal of flux, in terms of what gets shoved around, but I expect the South Atlantic folks are certainly interested in expediting this. Certainly for those concerns noted in going forward with this management, knowing that there is

issues like that associated with this assessment, is why they asked for the standard assessment to be done in the first place.

DR. REICHERT: Thank you.

MR. CARMICHAEL: When we get to the ABC control rule, we will talk about phase-in, which is a type of step-down, and so that's another thing we've got our eyes on.

DR. REICHERT: Yes, that was what I was going to mention also, that that will come back at the next agenda item.

DR. BOREMAN: Just a comment about the process here. I am interpreting this as a remand from the council for our ABC, and I don't know, again, if this is something that will come up later in our discussions, but basically the council is saying we have some new information that wasn't available at the time that the last update was done to the assessment or when the assessment was undertaken. This new information suggests that maybe the ABC level should be reviewed or reevaluated and come back to us with a different recommendation, if you think so.

Obviously the will of this group is we see no justification for changing our minds at this point, but we are recommending an assessment that may bring forward new information in the future, and that's a remand, and I think, this afternoon, we should talk about rules for the council when they do want to send an ABC recommendation back to the SSC to have another look, because of new information or other criteria, and I think that's important.

DR. REICHERT: I think that's an excellent point, and I think that happened in the past. For us, I think as an SSC, and correct me if I'm wrong, but that's kind of a conundrum, because you go back to the assessment, because that's what you have, and sometimes the new information -- It's unclear what the effect of that new information actually has on the assessment, or a potential new assessment, until you do a new assessment, and that's a good point. I would remind us, once we have that discussion, to actually talk about that. Ben, did you have a remark or a comment?

MR. HARTIG: Yes, I do, but I'm a little bit hesitant to say what I was going to say, because it's not going to change your opinion, and it's going to waste your time, and so I am not going to say it, but what I would say is that we didn't have any conversation on the selectivity issue, and that issue, I think, could have been informed better with fishermen input. I think it would be critical when you change the selectivity in an update, and it's going to have an impact on the assessment, that that should probably be held to a standard or a benchmark assessment, and I would just like to hear what you all think about that anyway.

DR. CROSSON: Ben, if I'm reading Attachment 3 from our briefing book correctly, and I think I am, that the tilefish fishery has been basically catching its year's quota in the first two-and-a-half months?

MR. HARTIG: Yes, and that's what I was going to talk about. I was going to talk about the size of the fish hasn't changed. They talk about all the older fish in the assessment, and the quota is being caught in a relatively short two-month span for the longline fishery, and that has changed somewhat in recent years, but all the other metrics we use to reduce fisheries don't really apply in this case. There isn't anything that we see in the landings that we see -- Now, yes, there is certainly

recruitment, and you've got wait until age-six before you even attempt to look at recruitment, and so you're kind of held hostage for six years before we get to the recruitment question. I actually said some of what I was going to say, but thank you.

DR. CROSSON: I guess my question then is do the fishermen in this fishery, or do the council members think, that the best way to address the economic problems that are caused by that management structure are to make adjustments in the P* that the SSC uses, or are there other things that could be better utilized to lessen the economic problems of that fishery?

MR. HARTIG: Well, I mean, it's a severe economic blow, and we're certainly aware of that. I mean, we have some options to address that through Magnuson now. They're new, and it's going to take us a while to deal with them, but we could step down, like Fred mentioned, the impacts over a three-year period, but we have to go to an OFL immediately, and so I haven't looked at all of how that works.

In one respect, we're lucky that we have such a large buffer in tilefish, because we actually have something to work with in reduction, when we reduce it over a three-year period, and so we have some pounds of fish to work with. In many of our other fisheries, we don't have that large buffer, and so tilefish has the largest buffer of all the species we manage, and so it allows us, on the management side, some flexibility to look at that over a three-year period, and we've gone on the record saying we're going to do that, and so at least we can ameliorate some of the problems, some of the blow, but it's still going to be hard.

It's really, really tough to explain this to fishermen, when they have seen recruitment increases and they are still catching large, presumably older, fish, with this kind of cut, over a 60 percent cut, in landings, and so that's hard to swallow.

DR. REICHERT: Thank you, Ben. Where does that leave us? Currently, our recommendation is to recommend the projection at 0.3, which was our original recommendation, prioritizing the new assessment for tilefish, and do we feel that's strong enough? Do we want to add some language as to when we would like to have that happen? We can leave it up to the Steering Committee and the council. Let's pause there for a little bit before we move on. Are there any additional comments or recommendations that we should add? Any concerns?

DR. BUCKEL: I think, for the second bullet there, instead of the SSC recommends, it's the SSC agrees with the council's recommendation or, based on what the council has brought up, the SSC agrees that this should be prioritized to be a new assessment or a standard, or I don't know if we want to specify what type, but just that it's not the SSC coming up with this, but it's based on the council's recommendations and based on the on-the-water experience.

DR. REICHERT: Thanks for that.

MR. CARMICHAEL: You could say the SSC supports the council recommendation or the council request.

DR. BUCKEL: Thanks, John.

DR. REICHERT: I would include the standard. John, that was the recommendation the council had, right, making it a standard? I would include that in our support, to prioritize and make it a standard assessment.

DR. SERCHUK: I can support the recommendation, but this is a slippery slope that we're going down here now. We spent so much time at the last meeting, and a little bit of time at this meeting, talking about a matrix for when stocks should be updated and when they should be looked at again, and here we come, low and behold, with a management recommendation to us that things ought to be moved up. I am not surprised. None of us should be surprised that this interaction happens. We fully expect it, and, therefore, we recognize that any sort of checklist that we have is always subject to revision, because management feels they need information faster than what would come about by following the matrix.

I am not sure where this fits in with the prioritization of every other stock that we have, and so, while I support this, I'm a little bit concerned about how the prioritization process should work, because we have a process for prioritizing assessments. We've gone through that, or at least we tried to go through that, and I think this steps outside of that, myself, Chair, but I recognize that there is an element here that we always have to be receptive to, because the winds of change often dictate how we face the weather. Thank you.

DR. REICHERT: Thank you, Fred, and I couldn't agree more, and I actually think we had that discussion at the SSC, when we were discussing the prioritization tool, that we all recognize that reality sometimes trumps the decisions that we made based on the prioritization tool, and I think that is a conundrum that will probably be very difficult to get around.

DR. BARBIERI: Just to clarify Fred, my point there with that bullet is basically to articulate to the council that there are other options at their disposal. They are the ones managing these stocks, and so, if they decide the priorities will change, given the realities of the input they receive from their stakeholders and whatever is happening, in terms of their idea of changing those priorities, that was the point.

It was to clarify to them that they have a process now and that we basically recommend a new assessment update be conducted, because just changes in P* values, new projections, did not stick, and so, instead of just telling them, no, we don't want to go there and we're going to just stick to our guns and not make any additional changes, we're saying we don't want to go there, but here's an option that actually is at your disposal to address the issue in an even better way, because there will be more information and more analysis. If they decide that this is a high priority, it's likely to happen.

DR. CROSSON: That's the point I was trying to get at, is that what I see here is primarily a management issue. You have a fishery that's engaging in severe derby behavior, that's catching its quota in a very short, compressed period of time, and I have concerns about our control rule and where we said the P* is a separate question from that and that's a risk decision that you make, but I don't think that changing the schedule for assessing the stock for tilefish is going to address the management issues that tilefish is currently facing right now, and so I thank Luiz for his comments along those lines.

DR. REICHERT: Thanks, Scott.

DR. SERCHUK: I don't disagree with that, Chair, but one issue that I know always needs to be considered is who is going to be responsible for taking the lead, in terms of doing an update or a standard assessment, and my feeling is that, unless you -- I hope the council does this, but I'm hoping that this comes up in the SEDAR group. In some cases, it will be, well, that person has already committed to doing this high-priority assessment and we can't do that assessment and this assessment at the same time.

We normally don't discuss those sort of things, but those are real-world constraints on the process. If you want this, but that person has also been working on that, and we can't put another person on it, you have to consider that, and so that's also another real-world constraint, in terms of are the personnel resources available to do the accelerated assessment from what it had been scheduled from before, and, again, I don't know whether that is discussed at these sort of things, but it seems to me that that can be a very big constraint. Thank you.

DR. REICHERT: I believe, and anyone correct me, that those are things that are discussed at the Steering Committee. That's a discussion that is being had there. Anyone else? The last bullet point -- Please take a look and see if there's anything else that we need to add to that. That is our last action. I am going to suggest a brief break, and then we will start talking about the ABC control rule. Michelle.

DR. DUVAL: Thank you, Mr. Chairman. This is my member of the public comment, I guess. When I read this bullet here that says "Given the uncertainties in the assessment and projections, none of the projection runs are significantly different from each other", and noting that the F 75 percent FMSY falls between the runs at P* equals 0.4 and P* equals 0.5. When I read that none of the projections runs are significantly different from each other, when we take this back to the council in June, I am anticipating questions such that, well then, why shouldn't we be allowed to use F equals 75 percent FMSY if none of these runs are significantly different from one another? I don't know if you care to add any more to that bullet, because there is going to be a lot of conversation about this at the June council meeting. Thank you.

DR. REICHERT: Thank you, Michelle. To be honest, that was the reason why I paused a little earlier, because I was trying to wrap my head around that. I think it goes back to that Bullet Point Number 1. Would anyone else care to comment on that, because that's a valid point. That's obviously some of the questions I will get when I make my presentation to the council in June, and obviously that can go both ways. If there isn't a significant difference, why are we sticking to our original recommendation? On the other hand, if there aren't any significant differences, why shouldn't we stick to our original recommendations?

DR. SCHUELLER: There is a difference, and I don't know how much it is, between the P* of 0.3 and the 75 percent FMSY, and so maybe there is some wordsmithing to be done. It's not that none of the projection runs are significantly different, but it just happens that P* of 0.4 and P* of 0.45 and F 75 percent aren't that different, that group, but that doesn't necessarily mean that it's not different from our original recommendation.

DR. SEDBERRY: Doesn't our response there address the question that came from the council? Maybe the council is asking the wrong question.

DR. SERCHUK: I have a feeling that everybody is a little bit constrained at this point in time, because you can always say, well, what about going to 0.31 or what about 0.32, and the fact is that we were asked for a recommendation and for a control rule. This is the control rule that we have put forth, and that doesn't say that we compared the existing control rule of P* equals 0.3 to any of these things. All we did was we had a control rule that we were asked to provide, and we provided it in the past, and then we were asked to look at these projections relative to F 75 percent and FMSY, but we weren't asked to compare the existing control rule recommendation to any of these projections, and I think, in that sense, we've been very deliberate in how we have approached the questions that we were asked.

Otherwise, you can nickel-and-dime this. How far do we have to go away from your control rule to have a significant difference? Then we're going to go up to the furthest point that we cannot detect a difference and then we're going to use that, and you can see the folly in that.

DR. REICHERT: Although I understand where you're coming from, but we weren't -- The flip side of that is we weren't asked to come up with a P* that we felt was at that risk level where we would still agree, and I will leave it at that.

DR. BOREMAN: This gets into another area that we need to be very cautious about, and that is knowing what the answers are, in terms of what the ABC recommendation would be under a suite of P*, before we as a group decide which P* methodology we're going to agree upon, which we did. It's the control rule methodology.

We came up with the P* equals 30. Another way to look at this is now we're being asked to look at all these other P* and F equals 0.75 FMSY and see if we want to change our original answer, because all these others look so close to each other. Well, that's not the way we should be operating. We should agree on what methodology, which is going back to how we have been operating, agree on what methodology we're going to use and go through the P* analysis to come up with a P* equals 30 and then let the chips fall where they may, in terms of what that translates to, in terms of an ABC. Now we're being asked to look at all of these other ABC outcomes and see if that changes our mind. That's how I am interpreting this, and I don't think we should be doing that.

DR. REICHERT: I agree with you, but that also goes back to what you said earlier, in terms of the information that became available after the assessment that may potentially justify changing our approach, but we don't really know how that affects the assessment, and we need to be careful in how we address that and potentially come up with a plan, although I also reckon that not every scenario -- We will never be able to capture every possible scenario, and so there will continue to be instances where we may be asked, because of information that became available, to revisit that, and so I know that's not a solution, but, unfortunately, that's the reality.

DR. BOREMAN: At our last SSC meeting, it was tilefish, and we literally spent hours arguing over a point, whether we should take one approach for, and it was golden tilefish, and if we should take one approach or a different approach. Then somebody said, well, what would the ABC be if we took either approach, and the answer was that is irrelevant.

We argued and argued and argued, and it still kept coming around. Somebody always kept saying, well, are the ABCs that are far apart and what are we really arguing over, and we were arguing

over the right process to come up with an ABC. It turns out, in hindsight, there was maybe a 2 percent difference, but we spent hours discussing it, because we said that difference was irrelevant and it's the process, something that we can scientifically justify, and also that we're following the rules as they're written.

DR. REICHERT: I think that's the dilemma that we have here, because, on one hand, we realize, and Scott pointed it out and others pointed it out, that the impact, the outcome, that this assessment has on the fisheries. On the other hand, yes, we do have our process. We have an assessment that we have reviewed, and, again, this is not a solution, but that's something -- I am struggling with that, in terms of how you marry those two processes or thoughts.

DR. CROSSON: Just leaving aside the economic questions for a second, if we were being told that, hey, some of the new recruit classes that are coming in for golden tilefish don't look particularly good and they're probably lower than they should be, should we then, at that point, go back and change our recommendations with the P* before another assessment has been completed?

I think, if we did that, we would be considered being -- It's acting in a somewhat, I don't want to say capricious manner, but it certainly wouldn't be something that would be welcome, and I think, again, here you have to wait and see how this is going to progress through the fishery and what impact this is eventually going to have on the next assessment, but, until that point, I don't think this is something that justifies changing where we are at this moment.

DR. REICHERT: Anyone else? Michelle, thank you. You reminded me that we -- Mike reminded me, and by Michelle coming to the table, it reminded me also that we forgot to have a public comment period, and so I want to at least give an opportunity for those who want to provide a public comment to do that. Rusty.

MR. HUDSON: Thank you, Mr. Chairman. We provided written comment. Hopefully you all have read it. Unfortunately, we weren't able to provide the comment before the discussion today, but I would like to read from our comment on golden tilefish ABCs. At the May 2016 SSC meeting, we provided you with a written comment, including a thorough review that suggested a rejection of the SEDAR 25 update for golden tilefish, as it was confounded by assumptions, such as use of the multinomial likelihood analysis and selectivity changes.

These assumptions were not consistent with the SEDAR 25 benchmark assessment. Further, the update lacked new fisheries-independent information and empirical data on recruitment. We agree with concerns that the council raised on these issues, and we support their call for a new golden tilefish standard assessment. We wish for it to be later this year.

The SSC should also recognize that our consultant, Dr. Peter Barile, participated as a principal investigator, along with the SSC Chair, Dr. Marcel Reichert, in a NMFS-funded, fisheries-independent bottom longline cooperative research project in 2016. The CRP provided approximately 1,000 new golden tilefish samples, CPUE rates, et cetera, in the most spatially-explicit golden tile survey ever performed in the South Atlantic.

This information from the 2016 CRP should significantly help inform the proposed standard assessment for late 2017. In the interim, we suggest that the recognized problems with the SEDAR 25 update prompt the SSC to consider ABC alternatives that are not burdened by the update's

confounded and overly conservative ABC projections. Alternatively, we hope you choose ABC projections more consistent with those of the 2011 SEDAR 25 benchmark assessment until a standard golden tilefish can be achieved later this year to replace the results of the update.

We originally, and this is me adlibbing now, had wanted to hire Genny to conduct a third-party assessment with golden tile a couple of years ago. That way, industry would have been participating with her, but, unfortunately, the new protocol with updates was that industry doesn't participate, and so it is very troubling to the industry in the South Atlantic region when we get results that deviate so dramatically from the full benchmark to an update behind closed doors. Thank you.

DR. REICHERT: Thank you, Rusty, and I am sorry that I didn't call you to the table earlier, because we like to give public comment at the beginning of our discussions, after the presentation, but, in some agenda items, we don't really have a clear presentation, and so then kind of the introduction rolls into the discussion, and so we will try to make sure that we provide that public comment at the beginning of the agenda items, but thank you for your comments.

MR. HUDSON: Thank you, Mr. Chairman, and that's why we chose to truncate anything at the beginning and wait until the end, because we did like the fact of this new protocol of being able to establish some kind of comment, so it would be fresh in everybody's mind, especially for those that never had a chance to read the industry comments. Thank you.

DR. REICHERT: All right. It is 2:40. Let's take a ten-minute break, and we will be back at 2:50, and then we'll start discussing the ABC Control Rule.

(Whereupon, a recess was taken.)

DR. REICHERT: Thank you. Welcome back. Now for something completely different, Agenda Item 8, the modifications to the ABC Control Rule. These are Attachments 15 through 18, and I want to remind the SSC of assignments of Amy, Tracy, Scott, Luiz, Alexei, Genny, and Carolyn. Again, if you guys would help us, if necessary, to finalize the report, but I think we have done a fairly good job in reviewing the items as we go, and so I hope that we can continue to do that. With that, I am going to turn it over to John, who is going to run us through this.

What I would like to do, John, is, if you would allow me, is to allow for public comment before I give it over to you completely, because I expect that we will start our discussions while John is going through his overview. I have also asked Shep to join us at the table, because I expect that we may have some questions for him, and he may have some insight for us while we are having our discussions on the ABC control rule, and so welcome, Shep. I am asking if anyone has any public comments relative to the ABC control rule modifications at this point. Rusty.

9. MODIFICATIONS TO THE ABC CONTROL RULE

MR. HUDSON: Thank you, Mr. Chairman. On the ABC control rule, the verbatim comment that we had submitted, we have raised concerns that the control rule has over-penalized fisheries catch levels, already subject to regulatory buffer to prevent overexploitation of stocks, and we have

supported your interest in making prudent changes. Specifically, we support removal of the stock status and the productivity and susceptibility analysis from the control rule.

We also support adoption of the following modifications: Action 6, allowing for phase-in of catch changes based upon revised ABCs; Action 8, allowing carryover of unused or unharvested ABC; and Action 9, clarify that the SSC may deviate from the ABC control rule. We also encourage the SSC to review draft fishery performance reports, as they provide valuable insights into fish stock dynamics. Thank you very much.

DR. REICHERT: Thank you, Rusty. Is there anyone else who would like to make public comments? Seeing none, John, I am handing it over to you.

MR. CARMICHAEL: I am going to go through a presentation here to summarize the issue, and then it goes through the different actions that we've talked about, but we can shift between this and the decision document, whatever is your pleasure and whatever works best. First, a quick overview of the information that we have.

We have the current ABC control rule. You have that as Attachment 14. Then our decision document that was prepared that gives a way of going through the different control rule actions that have to be taken, and it was set up with this language because that's how the council does alternatives and actions and management plans, and, ultimately, this needs to be actions taken in management plans to implement the control rule.

Back in 2016, in October, there were a number of other materials. Remember that we talked about this issue. Just a reminder that we had a summary of various proposed modifications. The decision document builds off of that, to a large extent. We had some background on rules of other councils. There was a presentation on the control rules, and there was a background package with a lot of the other background reports leading up to that meeting, including things like the different workgroup reports that we had and the control rule workshop report that we had prepared from a previous meeting.

Also, things that are interesting is the National Standard 1 Guidelines. The council received a presentation on the latest changes in the Guidelines at the December 2016 meeting, and then there is the final rule that published in the Federal Register on the National Standard 1 Guidelines on October 18, 2016, and I gave you the link there for that stuff.

Just a quick rundown of where we have come from to get here is we did an original rule back in 2008, and the few of you that were around the table at that time will recall that the dream, I guess, at the time was that this would be a one-size-fits-all rule. That is one reason why the first category talks about covering everything from assessed stocks to stocks where even catch maybe is not necessarily reliable.

That really hasn't worked out, I would say, in the way that those original crafters envisioned that it would, and, as a result, we're looking at some different things, and, over the years, we have made a number of changes, such as adding the tiers in 2010 and adding the decision tree in early 2011 and then the ORCS approach in later 2011.

Just as a note, the council added ORCS to the control rule in its FMPs, but only to the Snapper Grouper FMP, and so the ORCS option, at the current time, is not available say to the Dolphin Wahoo or Coastal Migratory Pelagic FMPs, if the council wanted to go that route, and so there is a fair amount of housekeeping that needs to be done on our control rule, and it's not surprising, given the age of the thing and pushing ten years since we've worked on it. There has also been a lot of developments in the whole control rule science and understandings and data-limited stocks and all of that stuff.

Fast-forwarding a bit to October of 2013, after those changes, this committee requested an ABC control rule workshop, and some of the issues at that time were the probability-susceptibility analysis, both what its role is in the rule as well as the data that were available and whether or not the values were still up-to-date and valid. There was also acknowledgement of a lot of developments in the data-limited approaches. Our current control rule highlights DCAC and DBSRA, and now there's a whole new world of acronyms out there, an entire toolbox, with fifty or more methods that are available that we have kind of ignored, or we didn't acknowledge or they didn't exist at the time, and we were very specific in our data-limited approaches.

There was also interest in evaluating performance in revising the tiers and scoring. If you recall, we've got some confusing language, and we've got some scoring issues in there that you've been interested in changing for quite a while.

In 2014, you had a discussion on the control rule workshop itself and what its terms of reference would be and background materials. We held the workshop in October of 2014. In April of 2015, you reviewed the results of the workshop, and you created a workgroup to work on specific changes, again, in terms of the control rule. In May of 2016, that group reported back. In October of 2016, we reported back again, and you had the revisions that I highlighted in the documents earlier, and it led to a lot of the background of the things that we're working on now.

Also, since that time, as I mentioned, the Federal Register notice came out, and so we had even another reason to consider changes, because now we had the National Standard 1 Guidelines, which provides some more flexibility for the councils, and the South Atlantic is interested in doing that. Here we are in April of 2017 with some specific options to review, and the council has looked at doing this in a couple of FMPs so far, with dolphin wahoo and tilefish, and there is also consideration of perhaps a comprehensive FMP to deal with the control rule issues.

Really, why are we changing it? This is some of the justification for why we're going down this path. As I said, the one-size-fits-all really requires some updating, and the confusing terminology. One of the things you have noted, in dealing with assessments in your meetings in the past, is the lack of flexibility and resolution within the existing rule to characterize uncertainty, and this has come up when you've felt like you have applied the control rule and got similar buffer adjustment values to stocks that you felt had much different levels of uncertainty or you got a slight buffer difference and you thought the uncertainty difference was much greater than that implied, and so this is something that you have raised.

You have also raised the PSA scoring, and the council has a desire, and they have mentioned this for at least over a year, or maybe a year-and-a-half, is to address the risk of overfishing directly. Under our current rule, and as it was done initially, the uncertainty and the risk of overfishing components of the control rule are all combined in one, and what the council is interested in doing

is taking more control over the risk tolerance components itself, which is similar to how a lot of the other councils handle it. Finally, getting the flexibility from the NS 1 revisions.

Fred had asked this, in response to initial documents, just getting a sense of where our FMPs lie and where we've applied the control rule across the board to the different categories, and so take our Coastal Migratory Pelagics FMP. There are three stocks, and they have all been assessed. In Coral, there is one, and it's been addressed through, I think, the decision tree. The Other Methods here is things like the decision tree that we have put in as our tier. Then Golden Crab and Sargassum and Shrimp all fall in that area.

Then Snapper Grouper is probably where the most range is, where we have fifteen of the stocks have been assessed, and so they cover that component of the control rule. Fifteen were done in ORCS, and so, as I mentioned, the ORCS has only been applied to the Snapper Grouper FMP, and so now it only exists in the control rule for snapper grouper species. We've got twenty-one done by other methods, and we've got five that are ecosystem components. Spiny Lobster has the one stock, spiny lobster, and it's been assessed.

Now I get into an overview of the different rules that we have, and this is just a little bit of a roadmap document for you. First of all is the issues addressing the update and restructure the existing rule, and these will be Actions 1 through 4. Then there is the National Standard 1 flexibility provisions, and that is 5, 6, and 8. Then there is a couple about clarifying the intent, one that deals with how we deal with rebuilding plans and the other is the ability to deviate, and those will be 7 and 9. I probably should have swapped 7 and 8 or something in there, to make it easy, but we're trying to get a lot done in a short amount of time and get this before you in a way that hopefully helps foster this discussion and allows the council to move on.

I will quickly go through these different actions, and, if we want to discuss them in detail, as you see, there is a lot more information in the decision document, and we can go back there if we want to get into the details, but the first part is the one you've talked about the longest, I would say, and this is restructuring the rule.

The proposal here is to look at three categories. We have talked about data-rich, data-moderate, and data-poor, and we've talked about levels of assessment. This could be quantitatively assessed or qualitatively assessed and unassessed. That is sort of the first step. Do we want to really go through this major restructuring of the rule to change how we approach it? If so, we've got to address some of the specifics, like where is ORCS and what do we do with ecosystem stocks. Then, once you've done this, how do we deal with the uncertainty within this rule, and that is where Action 2 comes in.

It's taking this idea of the data-rich, or the assessed stocks, whatever you want to call them, and how do we determine the buffer for these stocks? How do we adjust the P*? Do we do something like other councils have done, which is addressing the uncertainty estimate around some overfishing level or stock biomass PDF? In those cases, the council is selecting a P*, and then you're adjusting the uncertainty around that, to figure out what the yield is associated with the given P*. There may be other approaches that could be considered, if folks are familiar with other ideas or we've had other developments in other areas.

Then, in Action 3, we get into the data-moderate and qualitatively-assessed stocks, which, again, is, the stocks that haven't been assessed and have some of these data-limited methods, how do you go about applying the uncertainty evaluation for those and what might the council want to do, in terms of its risk tolerance for those types of stocks. I know some, like the Mid-Atlantic, has different levels for its risk tolerance values, based on the information here and what type of assessment it's been, and that seems to be a common thread among many of the councils.

Action 4 is getting at the council taking the risk evaluation component and making its decisions there, and the picture here is similar to what's done at the Mid-Atlantic Council, where the P* is determined based on the level of stock biomass and there is some maximum level, and so this is the case where, perhaps on our assessed stocks, the maximum level of tolerance of 0.4. Then, maybe on the other stocks, the maximum tolerance is 0.3. Then you have a change in the P* as the stock biomass declines. It's a little bit different than the way we approach it now, but it seems to be working well in a number of areas, and I know the Mid-Atlantic uses it, and I think a couple of other councils are looking at using this type of approach, too.

Also, looking at some other options, based on things the council has done in the past, such as they could just directly specify it based on productivity categories, which is something you see in some of the western councils, or they could just do the fixed ABC and just say they're going to go with say 75 percent of FMSY in determining OY, and then the uncertainty would be expressed in terms of the actual yield with that 75 percent FMSY, once you adjust the CV around your PDF.

Then it gets a little simpler after that. I think those are the toughest parts to work with, especially the first couple, because that really gets at the heart of the rule and how it's developed. Then these next few are going to deal with the changes that have come in the Act, and they are pretty straightforward, and they can be applied to the rule regardless of how we structure that first half and how we actually evaluate uncertainty.

The first one is providing a multiyear ABC. The council has talked about doing this, but you understand that now that we give an annual ABC, and let's say there is some trajectory in that, and the first year is the lowest and then it increases. If the council were to take an average and use that, then, in the first year, they would be above the actual ABC that you set if you gave an annual ABC.

That is why we can't just simply average things after the fact, after you've given an ABC, and so this something that needs to be worked into the control rule, where you would give an average specification, and perhaps the council would say that we would like an ABC averaged over three years or five years or what have you, and that's the way you would provide it to them. You would take the yield estimates and average it, and then they don't get into trouble, where, during that time period in which the averages are done, they may be above the actual ABC you set for a specific year.

They may want to consider criteria for doing this or what info you might need or when this multiyear thing is done. Is this going to become the rule for the future of the council? I think that's where socioeconomic concerns may be a big part, and I think the Wilberg paper that Fred had sent around when we were working on this was fairly interesting, because that seemed to -- At least there was a section in there that suggested that having a fixed ABC over a number of years turned out to be pretty robust.

Then there is the phase-in, which we talked about earlier, and this is just a way of addressing potentially large changes in the catch limits that come when you have a new assessment or some revision of the ABC in a way, and, again, the questions here would be things like what are the criteria and what are the triggers and over how long do we phase it in?

With all of these, none of these changes can exceed OFL, and that applies to all of these things that are coming up, the carryover or the phase-in or what you have you. There is always a limit of OFL, and you can't exceed that.

The rebuilding clarification, our practice has been that ABC has been based on the rebuilding strategy set by the council, but it's not clearly stated in the control rule that we have. It doesn't say much about deciding ABC under rebuilding scenarios, and so this would be applying some clarification that the council would pick the rebuilding strategy based on its probability of success, its rebuilding timeline of the approach that it chooses, and then, from that, you would get the ABCs. It's what we do, but it's just not clearly stated in our existing rule.

Action 8 is the carryover. The idea here is that, if there is some unused ABC, if we didn't catch it all last year, we could maybe carry some over to next year, but, again, this does not exceed OFL. In a lot of cases, these carryover provisions are rather limited, but it requires ABC changes, because you would essentially be setting a short-term, interim, higher ABC in that year in which you do the carryover. The councils can't just do it now, at least above the ABC, because they can't exceed the ABC recommendation that you have given them.

Then the final one is the Action 9, which is the deviations, and the question here is whether or not we should state within the rule that the SSC can deviate. It's allowed under the Guidelines, and so sometimes, in that case, it's good enough to do it, but then, in other times, it can help to just state that you will do it, or maybe you want to have some criteria or things to consider when you want to do that, and so this is one that you may take or leave, depending on your choices.

The next steps that we're looking at -- The council, as I mentioned, has a golden tilefish amendment. In that one right now, the council is considering adjusting its approach to the risk tolerance. Instead of having it all combined in the control rule, as it is now, the council would like to take a portion of the P* buffer, as we currently approach it, and set its own risk tolerance, or perhaps they may wish to choose something like the approach used by the Mid-Atlantic Council to set their risk tolerance.

In the dolphin wahoo amendment, the council has a number of provisions relating to the carryover component, and they are looking at that there. Now, one of the concerns that we have is, if we go down a piecemeal approach and we put control rule changes in multiple amendments for multiple FMPs, then we're going to continue the situation we have say with ORCS, where that is only applied to the Snapper Grouper FMP, and that did lead to quite a bit of confusion, at least at the IPT level, and somewhat at the council level, when we were looking at the dolphin wahoo actions and trying to figure out what the actual control rule that was in place for dolphin wahoo was. Some people thought, well, we have ORCS, and so it must include ORCS, but, in reality, that was only done for a Snapper Grouper FMP amendment.

There is a thought that, if we do these pieces bit by bit, that we will not have a consistent control rule across all FMPs still, and we could end up maybe having some different ideas about dealing with these things as we get to different stocks, and I think John Boreman made the case about coming up with your plan for how you do it before you see how it all pans out, and I think that really applies to the control rule. When we did this first control rule, it was based on the control rule and what we thought was the best approach and not how it worked out in any particular species.

I really favor this idea of trying to do a comprehensive control rule amendment, because I think it's going to make it more objective, and you're not going to be, and the council is not going to be, at any risk of saying, well, you chose that alternative because you like how it worked out on this particular stock. Perhaps we'll be back at that approach of doing a comprehensive amendment, but that, of course, is up to the council. That is the last one, and so that's a quick summary of what lies before us this afternoon and things that we would like to talk about.

DR. REICHERT: Thank you for that overview, John, and I really like the way you've set up that document. We talked a little bit about it. As some of you have noticed, it's kind of structured as an amendment, and I think that will help us with the language, but that also means that we may have to add some alternatives. Like there is always an Alternative 1 that is no action, no change, and so we may want to do that, and so I like that.

In terms of the -- We can come back to that later, and I agree with you in terms of making this or recommending to the council to consider this a comprehensive amendment, because I think that will address some of the issues of the species-specific issues and also, once we have established that for one species and we move to the next, we always run the risk of making, once again, adjustments to the ABC control rule, and so I would personally prefer that to be a comprehensive amendment that addresses just the ABC control rule.

We have seen, with the ORCS, that we are in the situation where that only applies to snapper grouper, and so that's my initial thought, and then, in terms of how we are going to approach it, I just suggest that we perhaps go back to Action 1 and just go through the document and discuss and make recommendations based on the actions.

As you indicated in the report, some of the alternatives -- If it's pretty clear that we will probably recommend a certain alternative, or if we think that that's more appropriate, or we already have made the decisions, we don't have to discuss certain alternatives, because those are a moot point, and so I would like to start the discussion with that, unless anyone has any questions relative to the overview.

I want to remind the committee that, in terms of removing the stock status from the ABC control rule and removing the risk tolerance relative to the PSA scores, we discussed that in our previous meeting, and that was a recommendation that we've already made, and so I think we can build on that assumption, on that recommendation, and I don't think that we need to revisit that, and so, with that, unless anyone has any questions, I would like to move to Action Number 1 and start the discussion there.

MR. CARMICHAEL: Thank you, Marcel, and so Action Number 1 is really the meat of the control rule changes, and it does build off the things that Marcel mentioned, that we recognize that

we need to clean up the language. We have some components that are better addressed by the council, and the council agrees with that, and so that leaves us with how do we deal with that part of the rule, which is how you characterize assessments and then how you deal with uncertainty within these different categories.

There is an alternative here that changes what we have now with the dimensions and tiers and levels and simplifies it down to basically three categories of data-rich, data-moderate, and data-poor, or you have the alternative language based on assessments, and so I think finding out if you support the simplification and this approach to the categories and what you would like to call the categories, and then we can maybe get into some ways of distinguishing between the categories, and I think all of that would be helpful.

DR. REICHERT: John, to open the discussion, later on, you were talking about the ecosystem species, and I am suggesting perhaps to add a Category 4 as ecosystem species, and I'm not sure if that complicates the rule, but maybe we can add that as a category that may allow us to address those as a separate category, and the rationale is that they're not in the fishery, and they are not managed, but they are important, and so that was a recommendation that I had. Anyone else relative to Action 1, to simplify the control rule to three or now, if we agree, four categories? Does anyone disagree with adding the ecosystem species as Category 4?

DR. BARBIERI: I like this approach here, as proposed for Action 1, and so I am supportive of the model presented here. The way I see it, quantitatively assessed would be basically all the stocks for which we consider our Tier 1 right now, or Level 1, and, the data-moderate, we could start fitting things like what we see now in the DLM toolkit for data-limited stocks or any other type of methodology that pops up over the years without us needing to specify that explicitly.

In data-poor, unassessed, maybe we break that down into two components to sort of capture our Levels 4 and 5, Tiers 4 and 5, which is basically ORCS and then everything else that's just what we call our -- It's the other ones that we use the decision rule, for stocks that could not really accommodate the ORCS methodology, but I think that this makes perfect sense to me.

DR. REICHERT: To clarify, Luiz, are you recommending to divide up the Category 3 and ORCS or leave them in?

DR. BARBIERI: No, we would leave them in, but there would be times when -- You may remember that, when we tried to apply ORCS and we figured that we couldn't, that only about half of the stocks that we attempted to apply ORCS to we were able to successfully, and so those two categories, what now are our Tiers 4 and 5, would be under that data-poor, and I brought this up just because there is that question there of staff asking for some guidance or comment on that.

DR. REICHERT: Thank you, Luiz, and that's why I brought that up, because I had the same thought, to keep it in there.

DR. CROSSON: I am just trying to wrap my head about this, because I have a lot of tabs open for the moment, and I totally support this. I like the way we're doing this. We need to go through this strategically, and I want to try and address these things, these different elements of the control rule, separately before we try and look at them holistically.

For these different categories, say for the Category 2, for what you have listed as qualitatively-assessed stocks, where you have some sort of proxy for ABC or OFL, and then you give some examples of some of those more limited ways of assessing stocks, like the DCAC approach, and does that require that the committee would then have to follow the -- That we would have to set the ABC based off of the recommendations of those data-limited models or are we still giving ourselves the ability to bring in other variables, if they bring in something better than or in addition to that data-limited assessment?

That is my concern, because I feel like sometimes these data-limited assessments, the model -- It's kind of garbage in and garbage out. The model takes what limited information there is there and they give some sort of proxy for OFL, but it's not necessarily the best picture, when you think about some of the other characteristics that are driving fishing behavior, and so I guess I just want to make sure that if we -- I don't disagree with this approach, in principle, but I just want to make sure that we're automatically not limiting ourselves.

MR. CARMICHAEL: I think certainly my intent is that the defining trait here is this description here about you having reliable catch data and some other information and it's analyzed through some type of structured process. I guess the question is the role of peer review and what type of peer review you have for this, but the specific tools, DLM and DCAC and all that, I think that would stand as examples and not be -- We don't want to pigeonhole ourselves again, as we did last time. We will leave it open, and there will be examples, but we won't specify that those are how it's done.

DR. CROSSON: That satisfies me. Thank you.

DR. REICHERT: Thanks, Scott.

DR. AHRENS: I guess the only comment that I have, under the data-rich stocks and that they're quantitatively assessed, is that, assuming that, out of kind of the data review, that the life history group has given an okay to the biological inputs. I am thinking about with blueline tilefish, where there is no actual growth curve and difficulty in determining the actual natural mortality rate even from some of the meta-analysis.

While you're proceeding with a quantitative assessment, one might question whether or not that is a data-rich assessment, given the uncertainty in those biological parameters, and so I am wondering if we have to flesh out what we mean by a quantitative assessment, because even data-poor methods involve a quantitative analysis, and so, if that requires certain checkboxes to be made during the assessment process, that things pass out of the data workshop or not, and I don't know if there is room for discussion on that, but that's just a question that I have.

MR. CARMICHAEL: I think that's a good question, and I don't think I know the perfect answer, but I think the hope is that we can come up with some defining traits that would distinguish between Category 1 or Category 2, in most circumstances, but I think, ultimately, it should be up to the judgment of the SSC, when you're evaluating an assessment, to decide if you think a particular assessment meets your expected criteria for being data-rich.

DR. REICHERT: Yes, and I think that's why you mentioned earlier that the methods in there are examples, because then the methods may change. That is probably something we should think about.

DR. SCHUELLER: I agree with Rob. I think there needs to be careful consideration of the wording, and so, on here, it's Action 1, assessed stocks. I mean, things that are data-moderate could be -- I mean, they are considered assessed under some of these methods, right, and so it's just -- It seems maybe silly, but it is very, very important for us to look at the words that are being used and make sure that we're very clear about what we mean.

MR. CARMICHAEL: I think if you guys have some ideas of where you think the line is, or certainly circumstances where you think that I would definitely think that I would call this data-rich, versus another circumstance that you would call data-poor, the more specifics you can give on that, the better chance we have of writing language that will work.

DR. REICHERT: So what you're referring to was the language between the brackets there?

DR. SCHUELLER: If you go up just a little bit on this document, it's the bolded "Action 1" to simplify the control rule to three categories, and it says "assessed stocks, data-limited stocks,", and I wrote on here, right away, to be careful with this wording, because, technically, data-limited stocks are assessed.

DR. REICHERT: I agree with you, but that's more as a guidance for us. I don't think that's the type of language that will end up in the control rule, and that's why I was --

MR. CARMICHAEL: I think a decision that I would like some feedback from you guys on is, is it better to call them data-rich, data-poor, data-moderate, or is it better to call them qualitatively-assessed, quantitatively-assessed, and unassessed?

DR. REICHERT: That's exactly the point that I was going to make, in terms of the language. That's why I was asking where in the alternatives you would like for us to reconsider some of that language.

MR. CARMICHAEL: Right now. Here, I think.

DR. REICHERT: Exactly, but where in -- Not in terms of time, but where in the document? Do we want to change data-rich into -- Do you have a suggestion? Should it be quantitatively-assessed stocks or -- Let's come up with some more clear language, rather than indicating that we need more clear language. I can give you some time to think about it, because Fred and Carolyn had their hands up, and so, if you will allow me, I will let them --

DR. SERCHUK: I want to follow up on Amy's intervention about words. Since we're thinking about words now, I want to raise an issue that I raised with John, and this appears in the Category 2 and the proposed Category 2 and the proposed Category 3. One talks about catch data and one talks about landings data, and I want to make sure that -- They actually can mean different things, and I'm not really quite sure whether the ORCS approach means catch or it means landings, but I can see situations where -- They are different.

Without having a monitoring program for discards, but only landings, it would be very difficult to truly have a picture of the productivity of the stocks, if you just based it on either catch or landings, but certainly on landings may not fully represent the entire harvest, and so I think we ought to think about these words and think about how they've been used in the past, and whether if they've not been used correctly, that we have a chance now to be more specific in our wording. Thank you.

DR. REICHERT: Thanks, Fred, and I agree. I think we already talked about that, but I also am thinking let's make sure that we have -- We can provide some changes in the language. John, to that point, I saw you already changed that a little bit to catch or landings, and do you have some comments on that, in terms of your original thoughts?

MR. CARMICHAEL: Here, addressing say the Category 2, should it really read "stocks that have reliable removals data"? Is that what really gets at what you would use as defining that? If you had a stock with good catch or discards, would you drop that to the lower category? I think that's the important question.

DR. BARBIERI: To that point, the ORCS criteria are pretty much explicit right there in that report, and so this would be something, perhaps, different. There is different alternatives, but, if we're going to be applying ORCS, I think we have to stay within the parameters that are defined in that, which is catch.

DR. ERRIGO: According to MRIP and how we've been using it, catch is landings and discards.

DR. REICHERT: Okay. Then I think it's good for us to clarify that. Catch is landings and discards.

DR. BELCHER: In the previous control rule, the idea was that we were going to try to get stocks evaluated in a tier, with the idea that, as time went on, you were trying to elevate up your tiers, so that your penalties were lower the higher in the hierarchy you go. Is that a similar expectation with this one, with Category 1, Category 2, and Category 3, because I am thinking about specifically -- Going back to the idea, and I don't know if examples are ways to think about exceptions to the rules or things like, oh shoot, I didn't think about how that's going to affect that.

Looking at black grouper, that was a Tier 1 in the last assessment, and now, because we've been told that landings are -- We've now gone completely down to the bottom of the scale of this thing, and so is there still going to be this inherent hierarchy within the control rule, with the ideas of elevations through, or are these going to be independent things that we understand that there could be a chance that not everything is going to elevate and some things may backslide and it's more of a broad-scale characterization?

MR. CARMICHAEL: I think there is the inherent difference, but I think, over time, we have softened our expectation of moving up. I am recalling -- I think Martin Dorn presented at one of the early catch limit workshops up in D.C. about not every stock has -- Not everyone drives a Cadillac and not every stock gets a Cadillac assessment, and I certainly think, in the Southeast, with the limited assessment resources we have and the great range of ACLs that we're seeing with our fishery resources, that that's probably a fair statement, certainly for us.

We should certainly strive for getting the species that are the driving forces within the fisheries probably to being Category 1, but it may not be cost-benefit-wise to try to get every stock to there, and we certainly know that we can't do the ages and we can't do the assessments to get everything up to that full age-based quantitative assessment.

I think maybe the expectations are shifting to just trying to categorize stocks overall and set realistic expectations, and I think we have stocks that are in the unassessed categories, as we discussed with the long-term prioritization, that we would like to move up a couple of categories, but we also may have some that are in higher categories that maybe we say, you know, maybe we don't have the resources and really can't justify trying to pursue the quantitative, age-based assessment for some of those stocks and they should come down to maybe more of a data-limited-type approach.

DR. BELCHER: To that point, would you almost consider the potential for sub-control rules? The only reason I say that is because of, again, the idea of the P* shouldn't necessarily be decoupled from the control rule proper, but it's just that it goes better with those things that we can do a more in-depth, quantitative, high-quality data approach to that, so the P* doesn't necessarily -- Again, we're not dealing with this penalty of the backslide, and then you have a situation where, again, here we had black grouper is now down to -- I am going to hopefully say a Category 2, but it might actually be way down in this 4 or 5 now, because we have no confidence in commercial landings for that particular species.

At that point, even though a P* approach could have been done in the previous assessment, it's now not going to be where we're automatically throwing a high penalty on it. We're just handling it in a different method, and so it's kind of like what we had before. The idea is everybody gets a P*, but we're really not doing a P* approach across all levels.

MR. CARMICHAEL: Everything does have an underlying P*, based on the figure and such, and the council can set that. Then one thing that I think would be pretty different is, if you go down this path and you start manipulating or evaluating the uncertainty around the PDF of the OFL, similar to what the Mid-Atlantic does, and that's a pretty different approach, and it has you, instead of doing this scoring as we went through and then we add up the numbers and that changes your P*, it would be more like you're addressing the uncertainty overall within the assessment, and it seems like, in a lot of cases, that's a bit more direct, and it gives you a better way to map that to what you really perceive the uncertainty is within the assessment, which our menu-driven, de facto scoring doesn't really seem to do that.

I think we still have the P*, but you may take a different approach to how you evaluate the uncertainty around that yield estimate, OFL estimate, what have you, which then determines the yield that comes from that P*. You could spread out the boundaries, essentially, for the Category 2 stocks.

DR. REICHERT: Rob, did you have a question?

DR. AHRENS: I apologize, but I am going to have to go, and I just wanted to make a contribution, while I still can.

DR. REICHERT: Okay. Go ahead.

DR. AHRENS: When I kind of picture it in my mind, in terms of putting things into categories, I really see us being able to come up with scoring based on the recommendations that come out of kind of the data workshop, in terms of what we believe about the biological data inputs and what we believe about the patch data inputs and what we believe about the indices inputs into it and then being able to, based on those, place things into a data-rich or moderate or poor category.

As somebody who has done assessments, if I know I have a very good relative abundance time index, and maybe I don't have age structure data, but I have good catch and good relative abundance, then I'm actually quite happy with the output of a simple Schaefer production model, because I believe there is good information coming into that, and so I think just because something doesn't fit into we have good age-structured information and it's going to fall into a lower tier, it also needs to be considered.

I think it's kind of the quality of the data that's going into the assessment also is an important consideration, and so good catch and good relative abundance data can put something up into actually a fairly high category, in terms of reliability. I won't jump ahead. Maybe you guys will discuss this tomorrow and I will try and jump in, but that's my input on this action, the Action 1 item. Thank you, Chair, and I have to go.

DR. REICHERT: Thanks, Rob.

MR. CARMICHAEL: Rob, I really appreciate that, and I think what you're sort of describing differs from what we do now, as it's more looking at the inputs. The categories we have now were really developed around the outputs. Did you get an MSY estimate? Did you get a distribution about it and that sort of thing, and I kind of like what you're saying, and I think that's the way that some of the other regions are going too, and I think that may be one of the issues that this group has grappled with in the past, in terms of trying to get what you thought was the appropriate ranking of the uncertainty adjustments across assessments, was because the rule you have now didn't allow you to make those kinds of considerations, and so I think bringing that in could be very helpful, adding that as one of your categories, is to look at the quality of the inputs when you decide how you adjust your OFL, if you decide to do that, your PDF CV.

DR. REICHERT: I was thinking that perhaps we can consider going one step further and perhaps the data workshop or the assessment workshop participants, given their specific knowledge of these stocks, can actually include a recommendation in terms of where they feel -- That doesn't mean that we as an SSC should follow that recommendation, but they may have some thoughts, in terms of where they feel -- Especially in the stocks where it's not so clear cut, where they would feel a particular stock would fall, and, again, we can deviate from that recommendation, obviously, but I think that would add value to our discussions, especially since we have, over the last years, had SSC committee members participate in that process, and so I think that would be helpful. I am not sure if anyone disagrees with that, but please speak up. Any other comments?

DR. SERCHUK: Just a thought, Chairman, and it relates back to this hierarchy of models and this idea that Tier 1 is the pièces de résistance. My feeling is that, even when we get up to that level, things that we don't consider are model uncertainty. We don't think of all the assumptions that even have to go into that stage, in terms of natural mortality and selectivity patterns and maturity at age and anything that you want, like growth.

When we have less information, generally we don't have to make as many assumptions, and I think we overlook that, quite frankly, and so it seems to me that we could, in that light -- We often, when we have less information, but we have a higher certainty of the quality of that information, we often have to make less assumptions about the approach, and those approaches could actually be more robust, because there is uncertainties that are -- There are not uncertainties there that exist when you get up to analytical assessments, for example.

Another attribute, for example, is we've seen a number of cases in the Northeast where we've had analytical assessments that have, in the jargon of those that have done it, wicked retrospective patterns, and they have been so wicked that basically they've said no more and we can't use the model anymore and we have to go back to a different type of approach, even though we have age structures and even though we have landings and even though we have all those sorts of things. I think we need to be very circumspect in categorizing these things as great, good, fair in Categories 1 to 3. I don't think that's a fair representation all the time, in terms of our knowledge of these stocks. Thank you.

DR. REICHERT: Thank you, Fred, and I think we talked about that a little bit, I think, at the council level. That was discussed, because sometimes, in the discussions, like a statistical catch at -- Anything that is not a statistical catch at age model is not as good as a statistical catch at age model, and that's not always the case, I mean in terms of robustness, and I think that addresses your point. It doesn't mean that one is better than the other. It is just -- I would say it's the appropriateness of the data and the chosen model is probably more important, but thanks.

MR. CARMICHAEL: Should we name them and not number them? Should we just call them data-rich, data-moderate, and data-poor?

DR. ERRIGO: I had a suggestion also. It seems to be that everyone is getting very hung up on these models should be in this category and these models should be in this category, and maybe we should split it up into which control rule or which method we're going to use to set the ABC. This stock, we can do a P*, because we have a PDF of the OFL. That goes in Category 1. This stock, we don't have that, but we have reliable catch information and we have some survey information, some index or something like that, and we have an analysis that doesn't give us a PDF, but we have some analysis that gives us something and so that goes in this category. We only have catch or we only have landings, that goes in this category and we use this method to determine the ABC, just to throw that out there, and perhaps that might help.

DR. BARBIERI: I just wanted to say that I think that this is a very good point that Mike E. brought up, because, in the past, this is basically how we looked into this. It's basically our Tier 1 were the stocks that we felt that we can actually apply the P* methodology, and some of those other ones we can't, and so I think that's a good criterion to break this up.

DR. REICHERT: Anyone else have thoughts or concerns?

DR. BELCHER: I do think we kind of need to get away from rich and poor, because quantity and quality are coupled together, and so you can be very poor, but extremely rich in other aspects. You have got to somehow figure out what encompasses both quality and quantity. Just because you have a lot of it, it doesn't mean you're rich. Again, we get back to you try to use the examples,

and maybe that's not the best way to go, but we had a lot of information originally for black grouper, and now it's one of the poorer stocks we've got.

DR. REICHERT: I think Tracy may have a suggestion here.

DR. YANDLE: Trust a social scientist to come up with the words. I was going to suggest robust, moderate, and incomplete.

DR. REICHERT: My first thought was incomplete -- We've got to be a little careful about that, because all of your data may be completely complete, but it's still all you have. I know it's wordsmithing, but --

MR. CARMICHAEL: Robust, moderate and -- We want more.

DR. REICHERT: I like that better than incomplete. I also believe that we have some time to come up with language that we all are comfortable about. I think, for now, let's make sure that we've got the framework correct, and then we can fill in some of the details, but, John, I need your guidance, in terms of what we definitely should address now and what are considered details that we can fill in later.

MR. CARMICHAEL: I think getting the concept down is good, and we're addressing them, and, when we think of a detail we need to think more on, we'll highlight it, and we'll get back to you on it, and so I think we're doing okay.

DR. BOREMAN: I am still hung up on terminology, because, whatever categories we call these, it's all relative to some standard, and I am really not clear what standard we're talking about here. It's good or it's moderate as opposed to what? What are we measuring this against? What is the gold standard?

DR. REICHERT: I agree, and so maybe we can just call them Category 1, 2, 3, and 4, and then, in the language itself, use language to describe what a Category 1 is, rather than trying to define what it is in the title. That may circumvent some of that, and it gives us some leeway in describing a little more in detail what exactly falls under a Category 1. Might that be a solution right now?

DR. BARBIERI: Yes, I support that, Mr. Chairman.

MR. CARMICHAEL: The description calls for it being that past independent peer review and assessment estimates -- It estimates mortality rates and provides reference points and uncertainty around them, and I think, looking to the next steps, if you're going to manipulate the PDF, then you need to have a PDF, and that maybe is a defining characteristic.

DR. REICHERT: So we added that category, correct, and then we added -- We changed or added some language to the categories. Action 2 is details and criteria for Category 1. There is a number of alternatives, and I suggest not to consider Alternatives 1 and 2, because I believe we've already made those decisions.

For Alternative 3 and 4, I am kind of in favor of considering the alternative approaches. It seems that they have fewer qualitative or expert opinion decisions, which may help with the consistency

of the decision, and I also think they're more consistent with approaches by other SSCs, and I also think, in terms of what is happening in different regions, there are some advantages over using similar methods in neighboring jurisdictions, and so those are just some of my thoughts, and I will open the floor for any additional comments.

MR. CARMICHAEL: I think this is probably the other most important thing for us to talk about here today, because it really gets at the heart of how you characterize that uncertainty, and it's quite different from what we do now, and I agree with Marcel that the first couple of options have a number of issues, the first couple of alternatives.

Number 3, I talked with John Boreman about what the Mid-Atlantic does. Then 4 looked at what the Pacific -- It sounded like the Pacific was kind of similar to the Mid-Atlantic, except for maybe they were using more of their fallback of just setting a value based on kind of lack of robust evaluation of the actual uncertainty and the CV, the reported uncertainty, within the assessment, but I admit that I didn't get as far into learning about their control rule and what they have actually put in place as I had hoped to before this meeting, but I was hoping that maybe John could shed some insight into the Mid-Atlantic one and how that works and if I have characterized it fairly here, or, if not straighten out where it is and whether or not that's an approach that we could maybe put into place for our stocks.

DR. BOREMAN: I was going to bring this up during our previous discussion, because we have thrown out the category approaches, the level approaches, the reason being that people were getting unnecessarily hung up on let's get the lowest category stocks moved up to the next lowest and let's work on getting all the stocks at our highest possible grade, and, after we had a workshop with the assessment scientists in Woods Hole and decided that there were communications issues, it boils down to our system is essentially based on how certain are we about the uncertainty.

We start off by having a binary decision. Is there a peer-reviewed, accepted OFL in the assessment or is there not? If there is no acceptable OFL, then we have a category, which is that we can't measure the uncertainty around the OFL, because we don't have an OFL. Most recently, in the past couple of years, we have resorted to the DLM tool as a way to handle those stocks, and the DLM tool is more than just catch. It's fifty-four or so different methods. They're different families of methods, but they can go from essentially almost just total index-based, zero catch data, just some index that you have, all the way up to a sophisticated catch series and so on.

It starts off, and I don't know how many people are familiar with it, but you start off by basically doing a management strategy evaluation to determine, of those fifty-four methods, which ones would fit your management model the best, in terms of providing you either with an OFL estimate or an ABC, and so that's how we have proceeded there.

On the other three bins that we put them in, how certain are we about the uncertainty, you basically outlined them here, John. The first is that the most -- What we consider all the major sources of uncertainty are included within the estimate of the CV for the OFL within the assessment. It's all internally estimated in the assessment and there is no proxies or outside other series that are used, other time series and so on, and that is, to us, what the gold standard is.

Probably there is maybe one or two assessments in the whole country that, at this point, can meet that, but, that aside, then we run into, well, there is -- The other two categories are, well, maybe

there is a PDF for the OFL, or a coefficient of variation, but usually what we see come out of assessment reports is that's just a measure of how well the model fit. It's a model estimate of OFL, but it doesn't take into account other major sources of uncertainty, like ageing data and stock ID and discard information and MRIP and so on.

There is two ways we can go. We can either have the assessment team themselves evaluate all these other factors and come in with their recommendation on how much beyond just the model-based variability we should be accounting for, and come up with an estimate, or the SSC can do it, and what we have done is we have basically decided, in all the stocks -- Half the stocks that we deal with are in a situation where we have a peer-reviewed, acceptable OFL that has gone through the assessment and everybody thinks it's a solid estimate, but we -- The other stock, the other half of the stocks, we have no estimate for OFL, and so we go to the DLM tool or some other way, just status quo level of catch or whatever.

Within the assessments where there is an acceptable OFL, basically the SSC has taken on the burden of providing a coefficient of variation, and Mike Wilberg, early on in the game, did a meta-analysis, from around the world, basically, of places where they do have estimates of CVs for basically fishing mortality and stock biomass, because those are the two components of overfishing level, and, based on that, our first attempt was, well, our default value is going to be 100 percent CV, based on a log-normal distribution around the OFL, and we were using that.

Then we got into a few assessments, more recent than that, summer flounder, for example, where we thought that the assessment -- It didn't go all the way, in terms of estimating all the major sources of uncertainty, but it did a decent job in analyzing the sources of uncertainty, doing the sensitivity analyses and recognizing what impacts that those sources of uncertainty could have on the estimate, to give us more confidence in the OFL that comes out of the assessment. Rather than 100 percent, we have dropped back to 60 percent for those.

Now our SSC is wrestling with, well, we just can't arbitrarily say 100 and 60 without more solid justification, and so we have a working group now that is diligently working on a way to come up with some consistent criteria that we can apply across the board for -- We may still bin them into 60 percent versus 100 percent, but better describe criteria that we can bring to the council to justify why bluefish is 60 percent, whereas black sea bass is 100 percent, for example.

That is essentially what you laid out here, John, and that's our approach, but it's not the data as much as how certain are we about the uncertainty around the OFL and how confident we are that the assessment itself addresses all of what we consider the significant sources of uncertainty, and there is a list that we came up with of what those sources could be, and so, as I said, we're still working this through. We thought we would be a lot further along than we are, but it's an ongoing process, and what we're trying to do now is shoot towards the National SSC Workshop. We're trying to get it wrapped up this fall, so that we can present something in San Diego in January to everybody, and so that's basically where we are.

MR. CARMICHAEL: I think one difference, maybe, is, in your list, it doesn't sound like you are applying particular adjustment values with each criteria. It's more food for thought and things to consider.

DR. BOREMAN: Yes, and we look at like retrospective patterns. Like these stocks that we assign a 60 percent to, the retrospective pattern is fairly well behaved in those stocks. It's not a frayed-wire-looking diagram, but the recruitment, retrospective, and the stock biomass estimates, retrospective, and the fishing mortality, those three, they all look as though they are holding up well under the retrospective analysis, and so that would say that maybe we can rely more on a lower CV around the OFL. It's stuff like that that we're looking at.

DR. SCHUELLER: John, could you give us some more information about what types of uncertainty are being included in what you guys are doing versus what's being included in what we're using from our assessment? For example, red grouper was presented, and there was some uncertainty about steepness and natural mortality, and so those were included in bootstraps, and can you compare and contrast what you guys do in the Mid-Atlantic with what we do here?

DR. BOREMAN: We don't do anything quantitative. It's expert judgment, and so we would love to have a formulaic approach, where we say, well, we can just plug this into an equation and something pops out the other end, but, right now, it's just the sense of the group on how confident we feel that the major sources of uncertainty are being addressed.

For example, if there is a steepness factor, and there is in most of our assessments, how was that derived? How much supporting evidence is there? Again, you can't translate it quantitatively into deducting points or adding points to the CV. We can just say does that move it towards one category or another category.

DR. SCHUELLER: Your distribution of your OFL is very narrow then, right, I mean based on the estimates coming out of the stock assessment model, and it isn't based on other sources of uncertainty.

DR. BOREMAN: The estimate coming out of the model, as I said, is just one source of uncertainty, and so ours is -- A 100 percent CV is not narrow. It's fairly broad.

DR. SCHUELLER: Well, I mean, you're applying that after -- You take an OFL and then apply, right? I guess I am not understanding how this works. What does your OFL distribution look like before you apply the CV?

DR. BOREMAN: We don't have an OFL distribution before we apply the CV. We assume that it's a log-normal distribution with a CV of 100 percent or 60 percent, log-normal around the OFL, and so we don't start with an OFL distribution, a PDF. These are the issues that we're dealing with, is we've got to nail it down a lot better than what we're doing now, which is basically expert judgment at this point.

DR. SCHUELLER: I guess I would -- To me, the bootstrapping is done as formally acknowledging the uncertainties that are in the data, and that is taking place at the data workshop level. The data workshop participants are supposed to provide input on the uncertainty in the data that then translates into these bootstrap runs that gives us, now, and we have seen these distributions many, many times of what that looks like, and so I don't know. It seems like stepping back from acknowledging one of the uncertainties that we are already acknowledging, which is incredibly important, especially in this area.

DR. REICHERT: I have a thought and then a question to John. That is assuming that the bootstrap indeed captures the true uncertainty, and I would like John to elaborate on that, again trying to wrap my head around it, and that may -- Like what we talked about this morning, there are certain assumptions in the model that are not captured in creating that bootstrap distribution. For instance, you assume landings are like -- There is like 0.05 CV, and that's an assumption, and there's other assumptions that don't carry forward in the true uncertainty in the model, but that was the thought I had, but, John, can you reply to Amy, in terms of there is, more often than not, a full stock assessment, or a statistical catch at age model, that does provide a distribution, and so why that, and you may have mentioned that, but why not using that, rather than the 100 percent.

DR. BOREMAN: The distributions that we get out of those models are typically a CV of 15 percent or 20 percent, and, based on work -- I am speaking like just as third-party. The last assessment that I did was 1983, and so bear with me here. Back then, we didn't even know what variability was. We just gave them one number and said take it or leave it, but anyway, 15 percent, and, in the work that Ralston and company did on the west coast, they said the best you can come up with is probably 30 percent, and that's under ideal, and so our gut feeling is that 15 percent is probably low. They're probably missing a lot of the uncertainty.

What the assessment team has been doing is saying, well, we'll just double ours, to 30, and then they give that to us, and we say, well, it's still probably not good enough, and so that's what we're wrestling with now, is how can we say that without any support, on our end, on what is good and what is not good, and so we're trying -- Actually, what we're doing now is one approach is to -- We had assessments that were done several years ago, where the methodology hasn't changed over the years, and they made projections on stock biomass and fishing mortality rates. Now we can go back and look and see how good those projections were from those assessments and say maybe that should be the measure of uncertainty around the OFL, and so that's another approach that we're thinking about using, but that's -- We can do that for some stocks, but not very many.

MR. CARMICHAEL: I guess I would think, if we're somewhat arguing details of how to implement this approach, then maybe there is some support for going down this type of direction. Figuring out how we deal with the CV is a finer-scale thing that I think is the next step, and we probably can't solve all of that today, but I think it's encouraging, if we think this is a good direction to go, and I understand that we have the bootstraps and we have the estimates of uncertainty, but I think we're faced with two situations from the last two assessments we've done, golden tilefish and red grouper both, where the observed uncertainty in the next assessment has proven to be greater than what the bootstraps have suggested from the prior assessments, and so I think there is a point there about the bootstraps perhaps not encompassing the real uncertainty that we are observing in the environment.

DR. BOREMAN: Just a postscript, we pushed pretty hard to get this on the agenda for the National SSC Workshop, and that's exactly where it is. That's one of the four major categories of the workshop, is this uncertainty around the OFL and using management strategy evaluations or whatever, but it's a problem that probably all of the SSCs are dealing with, at some level.

DR. REICHERT: Amy, you had a question earlier, and I am not sure if either what I or what John or what someone else said answered your question.

DR. SCHUELLER: It seems, to me, if we're going to consider something like this, that we need some examples to be given to us, so that we can fully vet them, because, sitting around here, it's hard to figure out how these are working by just discussing things and picturing it in my head. I am not seeing it, and I don't necessarily think that just because you have bigger uncertainty in your distribution from one assessment to the next that that's necessarily a bad thing or that leads us to a more inaccurate representation of the uncertainty.

In fact, probably it's because you have a more accurate representation of your uncertainty, because you can see, if we went through some of these MCBs in the past, sometimes the only things included in the uncertainty were the indices and landings and a few select things, where now we're including things like steepness, natural mortality, and I have included things like maturity in menhaden, and so that's just, I think, maybe a recognition of a more full view on what the uncertainty is with respect to some of those pieces rather than just there is something wrong with it.

MR. CARMICHAEL: I think I support your idea of getting into some of these in greater detail, and so I would say I think that's sort of the next step. If you think this approach has some promise, then it's worth trying to pull out some examples and figure out the specifics of how this SSC may wish to approach this modifying the CV problem.

You may not want to go down the path of sort of the 100 percent or the 60 percent the Mid-Atlantic has done. Maybe you want to give yourself the leeway to look at the CV you get out of a particular assessment and what you get from the MCB and what was included in the MCB and how certain you were in the input data, as Rob mentioned, and decide that, okay, do we think that's fair or do we think that, for these six reasons, we should maybe spread it out a little bit?

I think there is probably a happy median somewhere in there that gives you the flexibility to deal with each assessment circumstance, and we can try to look around the nation and see what other folks have used and come up with some examples.

DR. REICHERT: Or are there ways to, potentially within the assessment process, potentially get at that, if we know what we are asking, and I don't know. I am not a stock assessment modeler, but perhaps there are ways to potentially get at that.

DR. BARBIERI: The Gulf SSC is kind of leaning towards an approach that is more like the Pacific or the Ralston approach, but without specifying a value of CV to be used, and so, if we have assessments that come up -- Because they have an actual value, right? If we have a value that, again, it's going to have to be expert judgment, in terms of if we feel that there is enough uncertainty being represented there or not, you can add one, two, or three standard deviations to that and increase the spread.

I mean, I feel, personally, that having something that is more focused on the actual spread of that PDF, instead of us getting involved with the P*, would be so much better. It's just a matter of -- For a given P*, then you can have different values, depending on the uncertainty, but, from a probability distribution perspective, the council is still maintaining some level of probability of overfishing there and staying cohesive with their interest, and so either one value that the council could use or it could subdivide based on some criteria, like similar to PSA, where they sub-divide values there of P* that they want to use, and that's for them to decide, but, to me, it would be a lot

easier for us to move away from the P* and basically work with something that is based on the CV of that PDF and have multipliers, depending on criteria that we -- Of course we're going to have to identify what those criteria are to do one, two, or three standard deviations or whatever we want to do to cause that spread to expand.

DR. REICHERT: Thank you, Luiz.

DR. BELCHER: Mike, I am a little bit hesitant to see that the SSC prefers this approach. I have a hard time with things that we're thinking about in an abstract and not seeing the ramifications of putting something into play, and so saying something like that, that we prefer an approach to modify the CV on a PDF of the OFL, it kind of says we already have an idea that this is the way we want to go. I don't think we shouldn't necessarily say that we wouldn't consider it, but I kind of want to see performances before I start saying that I prefer certain things.

DR. ERRIGO: That's great. I put that there so that -- There was a lot of talking around the issue, and I just wanted to get feedback. Thank you.

DR. SERCHUK: I will say, Mr. Chairman, that my head is spinning a little bit, because everybody seems to have a slightly different take and understanding of the process, but one of the things that I think makes sense to me, and John alluded to this, is that this topic is going to be vetted at the national stock assessment workshop, and they're going to be looking at, I think, examples and applying some MSE approaches to different SSC ways, across the country, of doing it.

It seems to me that we would be remiss if we moved too quickly on this without getting the testing done and taking advantage not only of our own assessments, but those in other SSCs across the country, and so, while I think it's a good idea to start moving ahead on this, I am hopeful that the stock assessment workshop will deliver some clarity on the different ways that SSCs might proceed in addressing the harvest control rules and the various approaches to them with respect to how we might look at uncertainty.

DR. REICHERT: Fred, a quick question. You mentioned the stock assessment workshop, and are you referring to the national --

DR. SERCHUK: Yes.

DR. REICHERT: Okay. Sorry. I thought you mentioned a different --

DR. SERCHUK: Isn't that what John was referring to?

DR. REICHERT: No, that's the National SSC Meeting. I just wanted to make sure we were on the same page. Thanks.

DR. BARBIERI: Is that on the agenda? I don't think it is.

DR. REICHERT: Uncertainties in harvest control rules, and so it is on the agenda of the National SSC, and so thank you.

DR. WILLIAMS: This is a topic near and dear to my heart, as I was one of the originators of this awful ABC control rule that we started with, and, admittedly, we were dealing with limited information, and we've learned a lot over the years. I will add this, that -- A couple of big concepts just to think about.

P*, the whole concept of P*, came out of our shop. We published the initial papers on that, and, if you look at that, the reason we came up with P* was directly from the language that came out of the Magnuson revision in 2006, which says that the buffer between OFL and ABC should be based on the risk of overfishing, and so P* is the direct measure of that risk of overfishing, and so I would counter what Luiz just said and that we probably don't want to get away from P*, if we can avoid it, because I think it directly addresses the language that was in the Magnuson Act.

With that being said though, the dilemma we have here is that -- What John Boreman and what the Mid-Atlantic Council, what it sounds like they're doing, is right on target, and the issue is how well are we characterizing uncertainty. That is the core issue, and the problem we face is, as we get away from data-rich assessments, what happens is our uncertainty actually decreases, when what we want it to do is the opposite. We want it to increase, and so that's the dilemma we face. I think you guys are definitely on the right track when you start talking about the characterization of the uncertainty is the key here. How well are we characterizing it?

I liked John's other notion about what is the gold standard, and, well, we could create that gold standard. We could look at all of our assessed species and find the one species that we think we've done, that we have the best data for and we've done the best characterization of uncertainty, and we could start there. That's our gold standard, and then we kind of work from that. That might be an approach to take, and so just some thoughts, but I think you guys are on the right track. It's just it's not easy, because of the dilemma of decreasing uncertainty when we actually have more uncertainty.

DR. BARBIERI: Just one point. Erik, I think I misspoke. What I meant to say is that this committee -- I see it as a council risk management, and so the probability of overfishing is really something that, and this is explicit in the National Guidelines, should be a responsibility of the council. Now, the way that we set it up was that we would make a recommendation to the council based on those criteria and they would accept it.

The problem that happened is it generated a lot of confusion between risk and uncertainty, and so I saw that, like when the Pacific separated it, they set up that their council set the P* and all the SSC did was deal with -- But no, I like the P* approach. I just think that, for us to be setting P*, is getting -- It's just like what happened earlier today in that discussion about golden tilefish.

DR. WILLIAMS: Just to follow up, I think we're on the same page then. I think it looks like that we set P*, but we really didn't. If you look at when we initially set up the ABC control rule, what we got from the council was guidance. We said, okay, what is your average risk of overfishing that you're willing to tolerate, and they gave us 30 percent. Then we built the rule around that, so that the central tendency of it would be the 30 percent, and I think it worked out that way, because I think Steve Cadrin did an analysis and kind of found that, when we applied the ABC control rule, we tended to be right around 30 percent, and so, yes, I totally agree that the council ultimately does set what that P* should be, or central tendency. We're just trying to figure out ways to adjust.

DR. REICHERT: Yes, and I think that this revision of the ABC control rule addresses just that. I also believe, and that's a different discussion, but, nevertheless, we should still provide recommendations to the council in terms of how to potentially approach that for certain species, but that's a discussion for later. John, do you need further guidance from us, in terms of where we are? Fred made a good point that the National SSC Meeting -- That there is going to be discussion there. However, the flip side of that is that there is some urgency, and so what's the timeline, in terms of our recommendation to the council, for a new ABC control rule? Can you comment on that?

MR. CARMICHAEL: We will know more in June when the council goes over its priorities for the next quarter and the rest of the year. We may be working on a decision document for an amendment on this that the council may look at in September and you all could get into in October. The amendment process takes quite a fair amount of time, and so I don't think that has any problems with the notion of having better insight on this come January and being able to work that into whatever control rule packages the council is looking at.

I think that would be very helpful, and I think we have some really good guidance about agreeing that the council sets the P* and the P* has a lot of validity. As Erik said, it applies to the probability of overfishing. The SSC taking on this role of evaluating the uncertainty, how certain are we about the uncertainty and adjusting some measure, some PDF, around the OFL that will be used to derive the yield at that particular P* and then looking at the way that some other areas handle this and how they go about with the adjustments.

I think follow-up with Erik on trying to get some sense of what is our best assessment, to provide the gold standard reference point, and then looking at some of the other stocks to think, all right, where do other stocks that we have assessed -- Where do they fall short with comparison to that gold standard? How might you consider that when you figure how you need to adjust your CV, however you do that, and I think there's a lot of options before us for working on it.

DR. REICHERT: Okay. Two things that came to mind. You said we may have some stocks that we can use and there may be some stocks elsewhere that have that data that may not have gone through our P* approach, but we could potentially look at and use, if we don't have stocks to do that in our region.

MR. CARMICHAEL: I am more thinking of looking at how other regions have applied their rules to their stocks. I am not interested in applying our rule to other regions' stocks.

DR. REICHERT: No, but I'm not sure who brought it up, in terms of seeing how -- The stocks where we have the sufficient information, how the P* has worked out. I forgot who made that remark about looking into that, and we can talk a little bit more about that later.

MR. CARMICHAEL: The workgroup that Steve Cadrin had led up tried to look quite a bit, in terms of real-world examples within our stocks, of how well the P* approach has worked out in the control rule, and I don't think the -- We haven't had enough assessments come across this table since that group did its work to shed any more insight, really, into what that did.

If you look at the couple of stocks we have had recently, tilefish and red grouper being good examples, they're dominated by some other really important factors that probably far outweigh the

impacts of that, and so I don't think that we have a lot of value added to dig further into some type of evaluation and say how well has our existing control rule worked to end overfishing, and I think that, for the reasons that we laid out as the justification for doing this, we have bigger-picture things that we need to make progress on and address within this control rule anyway.

DR. REICHERT: The other thing is then let's move on to the next action, and we will definitely come back to this at our next meeting, because that provides us with some additional information that we can then bring to the National SSC Meeting in January. I want to give Shep an opportunity -- He brought up a point that I thought was valid, and I think, John, you may have an answer to his question. That goes back to Action Point 1.

MR. GRIMES: Thank you. I am supposed to be here to answer questions and not ask them, but I apologize. When I was looking at the review document, and it's page 5, Action 1, Alternative 3, and you breezed by it and didn't discuss it, but it has ecosystem component species explicitly considered, and I would just wonder why you would include ecosystem component species in your allowable biological catch control rule.

Ecosystem component species are, by definition, not in need of conservation and management. Therefore, they would require no catch limit, and it seems to me that putting them in a control rule designed to develop catch limits could be read as implying to the contrary. Also, it seems like you have enough on your plate, and it's going to make work, and you think you have data-challenged stocks that are actually managed and in need of management, and adding ecosystem component species seems like it would really send you down the rabbit hole.

DR. REICHERT: Thank you, and I think that's an excellent point. John, remind us --

MR. CARMICHAEL: I agree, and I'm glad that you made that point. I put it in there because, in reviewing the Pacific Groundfish FMP and seeing how they did it, I noticed that those were addressed in this way, and that's the quote right from what they said, and so I put it in there just to ask that question. Do you all think this is something we need to address? I think I agree with what Shep said. We have our hands full, and we're not going to set catch limits for those, and I don't know that we need to address them.

DR. REICHERT: Based on that information, I suggest we drop that Category 4. Are there any objections? That brings us back to three categories.

DR. BELCHER: John, remind me, because my memory is fuzzy now, but I thought some of the problem we ran into with the ecosystem stuff was relative to snapper grouper, that they were already identified within the FMP, and the idea of moving them into the ecosystem category had caused a problem. This was like way back in the early stages of it, and do you remember that?

MR. CARMICHAEL: Yes, I think there was discussion about that, but I believe it was clarified as the agency started to figure out what they meant by ecosystem component species, and the council was given some considerations that they followed, and they did identify like five stocks that they have called ecosystem components. They also removed some species from the FMP over the years when they've done that, and so I think a lot of that goes back to the time before we had clear guidelines on what we needed to do and what the council could do.

DR. SERCHUK: Just a question, because my understanding of ecosystem components is that these are stocks or species, as it says here, that are determined not to be overfished or overfishing is not going on, and so on and so forth. You need some information in terms of evaluating the status of those resources, some idea that they're not approaching an overfished condition, that they haven't been overfished, and overfishing isn't going on. You still need some basis for making that determination.

DR. REICHERT: Then the question I would have is, if it is determined that they're overfished or overfishing is occurring, what then? Does that mean that something needs to be done? Shep, maybe you can address that.

MR. GRIMES: Thank you, Mr. Chairman. The Guidelines, the revised Guidelines, make clear that if it's overfished or subject to overfishing, it is, by definition, in need of conservation and management and you must manage it. Then you have a lot of flexibility in other circumstances, understanding, as I had raised in comments when this was all first being developed, if it's not managed, how do you know it's overfished or subject to overfishing, and so that is a little bit circular, but that's how it's set up.

MR. CARMICHAEL: You're not going to set an ABC.

DR. REICHERT: Even if it is determined that it's overfished and overfishing. Someone could decide to do a stock assessment, and that determination can be made, and so still not required to set an ABC? In other words, still not required to be part of our ABC control rule? That is dealt with differently?

MR. GRIMES: I think that's -- That's an extremely convoluted situation, but let's say you had some university that wanted, on its own, to assess left-eyed flounder. They looked at it and found out -- They determined that it was overfished or subject to overfishing. They presented that information to the council, and, before the council could really do anything about it, they would have to add it to the fishery management plan and make it a managed species, at which point that assessment could come through and you could make an ABC recommendation, but, until it's added as a stock in need of conservation and management, you don't have to have a catch limit for it. You don't have any of the other management parameters that are established to guide the development of that catch limit, and so I don't -- What are you going to do with it?

DR. REICHERT: Thank you. I think that answers the question, and the issue remains that we don't have to add these to our ABC control rule, correct?

DR. SERCHUK: My concern is a little bit apart from the ABC control rules, and maybe I will ask Shep. The council goes on and says they want to do six-spine sculpin as an ecosystem component. The process is who has the responsibility for demonstrating that six-spine sculpin is not overfished and is not approaching an overfishing state or so on and so forth? Who has that responsibility?

MR. GRIMES: I would say, ultimately, the council is going to develop the record in looking at it, at what information is available out there. Let's say you have fisheries that are occurring, and I presume that commercial and recreational fishermen who are catching things are reporting what they're catching, whether it's a managed species or not.

You may have information indicating that the species is being harvested, but it's not being harvested in sufficient quantities to raise your eyebrows or whatnot. They would make an evaluation, and I suspect the SSC would be asked to provide comment on that, but, ultimately, it would be just like any other species. It's a record-building process to determine if it's need in conservation and management or should we make it an ecosystem component species to do whatever you want to do and can do for those species.

DR. REICHERT: Thank you. That leaves us with, John, Action 3.

MR. CARMICHAEL: Action 3 just looks at that Category 2. This is the data-moderate. What was the other word that we had? It was moderate. How do we deal with these stocks? How do we evaluate the uncertainty? I think that maybe looking closer at what the Mid-Atlantic does and getting a little bit away from these categories and just sort of focusing on what you have could potentially be a better approach than being strict in our categories and trying to define how we go into each one of these.

One place the council may want to take advantage of this is in terms of setting their risk tolerance. There may be something about these stocks in which they want to set a different maximum P* value. I think the Mid-Atlantic breaks it out into life history strategies, and, something with a non-standard life history strategy, they may go with a different maximum P* level. Whether or not they do that, I guess I don't know.

DR. BOREMAN: We have two categories, what we call typical life history and atypical. Atypical means that there are aspects of the species life history that are not picked up in the assessment, but could make that species more vulnerable to exploitation, and so we basically moved the bar down 5 percent. Rather than have it capped at P* equals 0.4, it was P* equals 0.35, and everything gets adjusted down from there.

We originally had the idea that black sea bass would fit that category, but recent publications by Gary Shepherd and others said that, well, for even black sea bass, being a protogynous hermaphrodite, it doesn't really matter in the long term, in the assessment, and it's accounted for. We thought dogfish would be in there, but dogfish special life history characteristics do show up in the assessment. If it's not accounted for in the assessment, but it could make the species more vulnerable to exploitation, and now we're considering it for forage species too, but that's a different story.

MR. CARMICHAEL: Maybe in this one the concept is still the same. The SSC goes through an exercise to evaluate the level of uncertainty, but what you have before you will depend on which of those various types of data moderate approaches might have been applied.

DR. SCHUELLER: When I read this, so the first two, Alternative 1 and Alternative 2, my initial thought was, and I still think this, is that both of these could be done. This could be an alternative where both of these are done, and so, first, the SSC addresses uncertainty related to the biology of the species, et cetera, et cetera, et cetera, the science-based uncertainty. Then, second, on top of that, the council can address their risk tolerance and management uncertainty, and so, for me, these aren't mutually exclusive. They should be in one alternative, and they should occur one after the other, with explicit statements of uncertainty.

DR. REICHERT: I agree, and I made the exact same note, to combine Alternative 1 and Alternative 2 and have that potentially -- Have that happen sequentially, and so I agree with you.

MR. CARMICHAEL: In the language here, the council can, under a particular action -- They usually can choose multiple alternatives, if they so choose, and so I like the idea of suggesting both. The council could address its risk tolerance, its P*, as well as the SSC address the uncertainty, and I think that's a really good way of putting it.

DR. REICHERT: That means that Alternative 3 may not be relevant or we still --

MR. CARMICHAEL: I think you all liked the idea of having some adjustment in specifying, as in the first two alternatives, and that's enough for us for now.

DR. REICHERT: Okay. Good.

DR. ERRIGO: That would address Erik's concern about, if you have a simpler analysis, it seems that there is less uncertainty, and that's just because you're not characterizing much of the uncertainty, and so adding an additional penalty would address that concern for these stocks.

DR. REICHERT: Anyone else? Then we will move to Action 4, the approaches for the council to consider in evaluating risk, and I think we discussed that. I think, and correct me if I'm wrong, but I think we discussed in the last meeting that it would be good to have that set parallel to the assessment process, and so, rather than subsequent to the assessment, and so that could be a recommendation from us to the council in that process.

The other question I have is, recognizing that this is a council decision, should the SSC have an opportunity to review and provide the council with feedback? I think that could be very helpful for the council, potentially. With that, I will open the floor for questions or discussions or concerns.

MR. CARMICHAEL: I think how you approach that depends on how we choose to go down this path. If you do something like this figure that's up there, then it's a schedule there, and it's predetermined based on what the level of biomass is, and so the options the council would pursue, in terms of doing a management plan action here, would be different shapes of that slope, different inflection points, different maximum values for it, and, once you have this, then the council doesn't have to get in and do that a priori evaluation for each stock and you don't have to give them advice back on it.

I think the advantage is then they're less apt to be accused of picking it based on the outcomes and such, and so, if they agree, and I think it's probably well established that the risk of overfishing should decline as stock abundance declines, because you start getting in more risk of resulting in an overfished condition, and so certainly there is a biological logic to it, and it seems to be being used with some success in a number of areas, and so I think, if folks think that this is a good approach, we could focus on this and the alternatives would get about the details of this type of figure.

DR. REICHERT: Thank you, and one question I had with this is this is tied to the biomass status only. I think, for me, the appeal of the PSA is that it recognizes that not all species are created

equally, and I like to see at least some recognition in that decision that would carry either the PSA score, or something like the PSA score, that includes the life history specifics.

MR. CARMICHAEL: Then do you like Alternative 3, which brings in the PSA categories as a way of defining the maximum risk of overfishing tolerance?

DR. REICHERT: Yes, and that's one of the notes that I made. I like that, because that at least recognizes that not all species are equal. If we do that, I also believe, if we leave the PSA in our recommendations, to consider in our recommendations to the council, I think it would be good for us to review the PSA, and that could be done in a stage, for instance, while we are looking at the terms of reference for stock assessment to look at that and see if we feel that it is necessary to make some changes to the PSA score and bring that to the council, so they can take that into account, if the PSA is part of that consideration. That would be my recommendation.

DR. SCHUELLER: One of the things I thought, when I was going through this Alternative 3, was that -- Obviously it seems logical the PSA -- If it's high-risk, it should have a lower maximum tolerance, but, if we're still using this hockey-stick rule, I mean we're talking about this tolerance, I wondered how that should probably inform this low end, too. If it's super high-risk, maybe we shouldn't get down to, and I don't know what number this is, but it looks pretty low to me, and is it 0.1, before we're saying that we should have a zero probability of P*.

MR. CARMICHAEL: So bring it in to also consider where it goes to zero for high risk? Maybe it goes to zero sooner.

DR. REICHERT: Yes. The other thing --

DR. BOREMAN: While we're looking at this hockey-stick that the Mid-Atlantic has, the Mid-Atlantic this year, on their workplan, they are reevaluating this whole risk approach, and not that they're going to change drastically, but what we've had is we've had stocks that are two, three, or four times SSB MSY, and so there's a lot of fish out there, and fishermen are frustrated, because we have it capped at P* equals 0.4.

One thing to be thinking about is, for those super-abundant stocks, maybe we can go to 0.45 or something. That is one aspect. Another aspect is forage fish, as I said. Do we want to just lower this for forage and give a little more -- Leave a little more in the water for the sharks and the tarpon out there or whatever that likes to eat mackerel? The third, as I said, is the typical versus atypical life history, and we've already talked about that, and that could be related to the PSA, and I do like the idea of adjusting the zero, depending too on vulnerability, potential vulnerability.

Originally, what I pushed the council to do, when we originally had our four categories, or three categories -- Where we do a P* approach, the fourth one is we don't have an OFL. For the three categories where we do use P*, have a different hockey stick for each of those categories, and so you build in more risk for a species that you are less certain about the uncertainty. That would enter into the risk.

The council didn't want to do that, because, at that point, they were just overwhelmed with everything, and they just had a one-size-fits-all, but that's something to think about here, and it's something, that, again, our SSC is bringing back to the council during this process this year, saying

that would help say what's the advantage of a fish being in one category versus another. If we're more uncertain -- If we're less certain about the uncertainty, then there should be a penalty for that, too. Thank you.

DR. REICHERT: Thank you for that, John, and a couple of thoughts I had. The complexity, that is true, but I think also, ultimately, when this is in place, those are decisions that can be made a priori, and so there is some time during the assessment process where these decisions can be made, based on the risk tolerance of the council and the species.

Another thought I had, and I think at some point we discussed that, is should, for instance, the directionality of the biomass trend play a role? If it's, for instance, approaching that one level that is clearly going up or the other way, if it's clearly going down, one could argue that the council may be -- The risk level they are willing to accept may depend on -- I am thinking, for instance, of golden tilefish, where you're around that level, but it's going a particular direction, and that may get too complicated, but I just wanted to throw that out, because I remember that we at least had a discussion about that at some point.

DR. SERCHUK: It seems to me, and maybe I am interpreting it incorrectly, but if you look at this hockey stick diagram, once you get below 0.5 of your stock target, you often have to -- Maybe one-quarter, whatever it is, but you get into a rebuilding plan, and you no longer worry about overfishing. You worry about rebuilding, and so the diagram doesn't go down like that, quite frankly. You go into a different phase of the diagram. It doesn't allow you to go down that far.

Then you get into the problem of we now have additional constraints. If you can rebuild within ten years, you have to go to an F rebuild, and you have to have some assurance that you're going to get there within a time certain. Generally, those go forward as projections. They could be ten-year projections or they could be longer than that. We saw that was a problem today, and so a whole different set of rules come in, and so the diagram doesn't look like this, because it basically says, well, if you get to a stock size this low, the stock is going to be considered overfished. If it's overfished, then you have to go into a completely different way of -- You have to go into a rebuilding plan, and that is completely different. Is that not the case?

MR. CARMICHAEL: I think that's a good point. When you get below the MSST level, you're going to kind of be in a different management approach.

DR. BOREMAN: Yes, but the council has how long to develop a rebuilding plan?

DR. REICHERT: Two years.

DR. BOREMAN: Two years, and so, in the interim, what are you going to fall back on? I think, for the interim, this would work, but you're right that in the long-term that you would -- Once the rebuilding plan is in place, then this risk, this hockey stick approach, is out the window.

MR. CARMICHAEL: I think that's a good point and something we'll have to ponder and think about how these -- Maybe drawing some for us and seeing how they work out and taking that into account, that you may -- This will kind of be out the window once you get into a rebuilding.

DR. BELCHER: It's a minute point, but, because there is some of the discussions of the pros and cons relative to the PSA, because there are two PSA approaches, we never really delved into what was going on with the National Marine Fisheries version of PSA. We were using the MRAG-developed approach, and we are unhappy with that portion, or at least that was my understanding, is that we were kind of locked in and there is no way to modify the numbers. We're kind of dealing with a static approach there, and so I think, from that standpoint, we just need to clarify that right now it's dissatisfaction with the MRAG PSA approach. We haven't revisited the other side of it.

DR. REICHERT: Yes, I agree, although I think we always gave ourselves some leeway in terms of changing that designation. We not always automatically took that over. I remember there are cases where we actually, based on the information, or based on the information in our region, that we changed that score on the MRAG.

DR. BELCHER: Which I agree with. We had that discussion, because there were certain things that we felt were different than what went in, but my point was that we never took on the NMFS qualitative approach to see what the differences in the quantified value was for a PSA approach, and so it's just to kind of make sure that clarification in there it's not the PSA in general, but it's the PSA from MRAG, and there may be other answers elsewhere.

DR. REICHERT: Good point. Thanks.

DR. ERRIGO: I just wanted to mention to the SSC something about some work that's going on that I know about through the ACCSP Bycatch Committee. There is work going on in developing a spreadsheet using the MRAG approach with all the values for each of the criteria, and you go in and you can change the values for each of the species, and it goes through and calculates the PSA score in the end, and so that might be something that the SSC can use if they think that there are certain values that have changed, let's say, over time, where they feel that they're not correct for the South Atlantic anymore. We may be able to use that work to update the MRAG PSA scores, but there is still, of course, the qualitative PSA evaluation which was done, and I don't know how well they correlate with each other.

MR. CARMICHAEL: We talked about the NMFS. We've looked at MRAG. We have both, and I think Wes came and gave a presentation on it. It seemed like the biggest difference, as I recall, was that the NMFS and MRAG took a different approach to the unknown values, and NMFS tended to leave them as zeroes or unknowns, and MRAG tended to take a precautionary and put them as some higher risk susceptibility.

We went with the MRAG, but, like you say, it's hard to say just exactly how strong that decision was, and I think that's why it's good we're thinking about what we really want to do and whether or not the council wants to go with this approach and use the MRAG end of it in some way or the PSA end of it in some way, and I don't know, but I think, if you guys do want to use that, you may want to devote yourselves to going through and evaluating the scores to see if you're still happy with them, because that stuff is probably ten years old now.

DR. BELCHER: To that point, that's kind of exactly -- Like I said, the MRAG, we had no ability to go in and modify anything. If we disagreed with anything that was scored in that report, we couldn't really go in and modify it and rerun it, and we did get to that point where we were talking about looking at the NMFS approach from the standpoint of, at least as part of the toolbox, if you

wanted to go in and change some numbers and look at the quantitative output changes, you could do that.

That is the only reason I was bringing that up, is that, we have already had numbers fed to us, and we have agreed that, some of them, we don't necessarily agree with all that went into them, and at least it gives us that ability to look at it from the other side of it. The weighting factor is -- Again, I think you can still change that within the NMFS approach.

DR. REICHERT: Thank you. Anything else under -- Where are we?

MR. CARMICHAEL: That was Alternative 3. There's a couple other things, just a few more here, under this one. One is whether or not the council considers just setting P* based on different types of stocks, for example. This one says annual crops, short-lived, moderate, long-lived, et cetera. Does anyone think this has any promise or the approaches we've talked about so far are preferred?

DR. BELCHER: Just for clarification, why would we use a P* on annual crop if we're kind of released from the overfishing on annual crops? That was the big discussion we had about white shrimp, pink shrimp, brown shrimp.

MR. CARMICHAEL: You're not released from overfishing. Shep, maybe I shouldn't have included annual crops here, but what are we released from on annual crops?

MR. GRIMES: I don't think you're released from the overfishing and overfished listings, but you don't have to have an annual catch limit for annual crops, which would mean you -- Maybe it doesn't need to be on this. I have never really --

MR. CARMICHAEL: I think that's right. You have to have the ABC, but you don't have to do the ACL, and so, if you think this has promise, we can fix that, but, if you don't think it has promise, we don't have to worry about it. Do you think this has promise or do you think this is more concerns and issues? Raise your hand if you think it has promise, or nod your head, because I think we've had a lot of good discussion about the other alternatives that precede this one. That would seem to be the case. Okay.

The last one kind of sounds a little bit familiar to something we talked about earlier, where the council could just establish a tolerance based on ABC at 75 percent of FMSY, F limit, MFMT, whatever you wish to call it, and this is probably the simplest way for going about it. It gets away from the P* approach, and, if the council went this way, they wouldn't be adjusting their risk tolerance for different types of stocks and different conditions, which is probably a down side of this, but it's extremely simple, and the yield would just be based on your evaluation of the uncertainty. We'll throw that out for some thoughts and discussion.

DR. REICHERT: One of the things I wrote down is that, as I said earlier, it takes that recognition of different stocks out of that equation, and so although I do see the appeal, if this is something the council would like to consider, I would try to think about ways to include the recognition that not all stocks are created equal in that, and I thought about it, and it's kind of difficult to do that, but that's just my thought. It's easier to express concerns than to come up with a solution for that. Anyone else? John, is that it for Action 4?

MR. CARMICHAEL: Yes, and so now we're getting into the things that are slightly simpler, and they address the flexibilities allowed under the recent National Standard Guidelines. Action 4 addresses the multiyear specifications, and this would allow the SSC to provide a fixed, multiyear ABC. As I said in the presentation, we can't just simply average what you give the council and call it a multiyear ABC, because it will create some problems, but the council is interested in doing this, and so the question before the SSC is, is this something that you think has value all the time?

I think the Whiteman et al. paper seemed to suggest that this was fairly robust, that having fixed ABCs and updating your assessments relatively frequently, was a very robust to preventing overfishing, and we certainly heard the discussions of the value to the fishery and economics of having consistency.

On the other hand, when we're in a situation where the ABCs are going up, there is often a tendency to take advantage of that, but how good are our projections and how well do we know that, and so maybe sometimes an average across years is as good as any of those specific, going-up-each year values.

DR. BELCHER: I am going to look to Erik. Back in the early days, when we were first coming up with P* approach, these were things that we had talked about, was the idea of the differing approaches. When the P* gets done with a projection, we have done the P* relative to whatever that time series was, and so, if it was five years of data, the P* applied to that time series, right?

Then, if it broke down independently, it was harder, because it was the idea of the multiplicative rule of what happens in year one has an effect on year two and year three outputs, and so the complexity of that, relative to the P*, was not as easy as just saying here is three years of ABCs and we're going to average them and this is -- It changes the overall P* production, is what I remember from those discussions early on.

MR. CARMICHAEL: Yes, and it sounds like you're getting at how you actually calculate the average, and I think, if they can calculate a fixed year over a three-year block that achieves that P*, that's probably preferable to average annual yield estimates.

DR. BELCHER: But I just wanted to make that understood, that, when we do those projections, the P* is for that time series. It's not each individual year has that P* assigned to it, because then would have changed the overall P* for the series. In thinking about it in an average, I think it's a lot more work to come up with what value of X is going to give us an equivalent P* of say 0.37, relative to a time series of three years with a probability of 0.37.

MR. CARMICHAEL: I don't know. I think I would ask Erik what he thinks on the work and if it really makes a difference, if you could project for a chunk of years, if desired, or is it easier to project for the annuals and just average them and that's within the margin of error?

DR. WILLIAMS: Carolyn is correct. Well, you're both correct, I guess. We could do it. Just typically our projections are always under a constant F, and we just would have to switch to a constant catch type of projection, and we just would have to know how many years you're looking at averaging, and we just would do it that way.

DR. REICHERT: Thanks, Erik.

DR. BARBIERI: In the Gulf, we are discussing this same thing, because of the interest in having a constant catch and facing this same issue, and one of the ideas was to average the F values that come out of those projections, and Rick Methot actually -- For whatever reason, he happened to be at our meeting, and we were getting, as we tend to, wrapped around the axle, and he raised his hand, and he said, listen, considering all of the uncertainties that are in this thing, I don't think that this makes any difference whatsoever. If you just average your F values there, instead of averaging your ABCs, you end up with a value that you can apply to your estimated biomass and come up with something that could be acceptable with all the imperfections.

DR. WILLIAMS: I think that's probably when you're in a simpler situation that you can probably do that sort of thing, but, if you have the full uncertainty, it's not that much to incorporate it all and do the projection and just -- You set the conditions of the projections such that you want to achieve a certain probability of overfishing, and you can do it either in a constant F or a constant catch mode. You can do it directly, but I think what you're probably describing is, when you don't have all of that information, you drop back to these simpler methods, and Rick is right, as he always is.

DR. SERCHUK: I think, under either scenario, whether it's a constant F or a constant catch, you still have to look at the reliability of the projections. What happens, in many cases, is you're here in 2017 and you're dealing with a terminal year that may go through 2015. You have specifications in place already for the next two years, and so you really have -- First of all, you have four or five years of assumptions that you have to go in, and then you also have the assumptions about the recruitment and everything else going in there.

I don't think we should delude ourselves until we see how well our ability to either project catches or project Fs have been realized, and we saw today, in the red grouper, that we made assumptions several years ago that were completely, completely, off. Now, maybe that was the worst assessment. I don't know, but the fact is that here is a lesson to be learned. We need to have a retrospective evaluation of how well the projections have panned out in all of our assessments and find out are they robust, and, if not, we have to shorten the window a little bit to make them more robust. Thank you.

DR. WILLIAMS: To that point, I think Fred is right on, and we had looked at this in some of our P* papers, and what we classify that as is management uncertainty, and so we're looking at the assessment uncertainty. Then, when the year is out, it's basically, well, management set a catch level and how well did they reach it, and, yes, you're right that I think --

DR. SERCHUK: But part of it has to do with the assumed dynamics of the stock in the years in which the projections are done, what recruitment is going to come in and what the growth rates are and what maturity is going to go into SSB and those types of things, and those can all be evaluated retrospectively, after the period is over, to see how well we've done. That's all.

DR. WILLIAMS: Yes, and I was going to follow up and say that you're spot on that that is a critical research need, is to -- Kyle and I have actually been talking about this, because we've been waiting for that moment where we've felt like we've had enough years of assessments, where we've done enough projections, and I think we're at that point, and we need to do that research.

DR. REICHERT: Excellent, and I think that would also help -- There is a question here of whether this should happen always or when requested, and I think that's where we come in, in terms of, well, this may not be a situation where that may not be an appropriate approach, or this may be a situation where that would be an appropriate approach, and so I think you're absolutely right, and I think that's how we as an SSC may want to use that information, in terms of our recommendations to the council.

DR. SHAROV: In terms of the projection itself, there is no question that it doesn't really matter what you project forward, whether you assume a constant fishing mortality or a trend in fishing mortality or a constant catch, but, with respect to estimating the efficiency or the success of the projections, a constant catch approach has many advantages.

Number one, in the case of the fisheries where you are capable of tightly controlling the catch, which is mostly commercially done, fisheries dominated by the commercial fleets, that certainly has an advantage for you. You do control it, and you can come up very close to the specified ABC, and, when it's specified on a multiyear basis, it does provide you an opportunity to tightly control it and more reliably estimate the effect of it, because there is no fishery that I know of where we were able to control fishing mortality within a reasonable range for the specified values that we prescribed.

For this reason, the New England Council, for example, was very much interested in moving into the multiyear specification of ABCs, and they are doing this now for a number of species. Again, as I said, if you can control it in the case of a commercial fishery, that is an advantage. You are reducing your uncertainty. Therefore, in reevaluating the performance based on the assessment, you could up with a clearer understanding of how the stock responded.

Even in the case of a recreational fishery, which obviously is highly variable, is what we think, and is difficult to control at a constant level, the multiyear specification allows you to at least keep your sort of cumulative ABC within much closer to your target, as opposed to the year-specific ABCs, which are changing on an annual basis, following the presumed changes in population size, and so there is a number of advantages in the constant catch projections with respect to the future evaluation.

DR. REICHERT: Thank you, Alexei.

DR. SERCHUK: I just don't think it's that simple, Chairman. One is because we are now -- The regulations, the new changes to the Magnuson Act, allow for carryover, if the councils want that, and there are also rules for if you exceed it. In some cases, regulations are in place for a payback the next year.

Nothing is static, even if you have a constant ABC for three years. There are going to be interventions along the way. You might say, well, okay, we didn't get our catch in the first year, and so we're going to roll over to the next year, and that may be, hey, wait a second, we have overestimated stock abundance and they couldn't catch what the ABC was. Then you roll it to the next year, and it's a feed-forward process and not a feed-back process, because you're just exacerbating the situation, and so it's a little bit more complex.

MR. CARMICHAEL: It does, and that's one of the things, when we -- In dolphin, we have worked on the idea of carryover, and preventing a system from allowing buildup with interest in that carryover is considered important. It needs to carry over for one year, and, if you can't catch it, then you can't just keep building up and building up to where you get to some point where you say, oh, I can catch three times what I thought it was before, and so, when we get to that provision, it's definitely something to think about carefully.

I think, here, one of the questions is, when you do a constant catch, and I appreciate Alexei for pointing that out. That is sort of what it comes down to, constant catch versus constant F projection scenarios, and is there a number of years over which you think that this is acceptable, and is there a maximum where you start to get concerned in what it might do with fishing mortality?

Here, I am thinking, of course, if we think stock abundance is pretty flat, then it probably really doesn't matter, but if stock abundance has a trajectory, then the size of your steps starts to matter, and I think if your stock were going up or down, either way, the risks are different, but, depending on the slope of that trajectory, whether you have a three-year step or a five-year step could have some pretty good consequences for your fishing mortality rates within any of those individual years. Is that something that should be considered here? If so, do you have some bounds on what you think the limit is for the number of years to be averaged or projected as constant catch?

DR. REICHERT: John, just as a clarification, there is not a formal maximum number of years that we can set an ABC of zero, is there?

MR. CARMICHAEL: Set an ABC of zero?

DR. REICHERT: The SSC can set that for a maximum of five years or -- There is no provisions like that?

MR. CARMICHAEL: I haven't seen anything in the Guidelines at this point or in the proposed rules that have addressed that. I think it's an open question.

DR. REICHERT: Shep, is that correct that there is no maximum multiyear ABC specification specified in the current rule?

MR. GRIMES: No, I believe I've seen the Gulf Council SSC provide multiyear catch recommendations in the past, and I don't think this is a new thing in the statute. The new stuff was dealing with carryover and phase-in, and the phase-in was limited to three years.

DR. REICHERT: Thank you, and so the question is should we allow a maximum of X years that we can -- I would argue that perhaps we should look at the circumstances, the stock assessment and the stock. Obviously ten years would not be probably a smart recommendation, but in terms of -- I hate to limit us now to two years, three years, four years, or five years, because three years may be appropriate for one stock, and it may not be appropriate for another.

MS. LANGE: To Fred's point earlier, it also would depend on what the gap already is.

DR. REICHERT: Yes, and then another question I had, and this may be more of a procedural question, but allow the SSC to provide a fixed multiyear ABC specification conditions always or

when requested by the council. When it is requested by the council, does that mean that the SSC is required to provide that multiyear ABC, or can we still provide it with an explanation of why we do not recommend that?

MR. CARMICHAEL: That would probably be a detail the council would work out in its plan, and it may reserve the right to tell you that I want you to give me a multiyear specification for this stock. I think, if you think that there is some maximums or there is some situations in which it's not appropriate, you want to spell that out here, because, otherwise, you might get in a situation where you're dissatisfied with the box the council is putting you in, and I don't think, given that the council is interested in this, and there are the socioeconomic concerns about this and the consistency of regulations, I don't think the council is going to be satisfied just saying, well, we'll just leave it up to the SSC to decide if it's appropriate.

DR. REICHERT: No, and I completely understand that. I was just thinking that if -- Well, we can talk about those details later, or those criteria.

DR. SHAROV: There is a minimum estimate of the length of the period, obviously, and it's two years, if you were talking about a multiyear specification, right? So we're good on this one.

DR. REICHERT: I am really glad that we can agree on that one.

DR. SHAROV: The practice that I am familiar with is three years, at the moment, and that is probably just a voice of reason, so to speak, for most of these species that have a moderate to long life history, but I would agree with John Carmichael's comments that I personally think that we shouldn't be specifying the limit, because it is going to be dependent on the trend in the stock, and the appropriate -- I guess the Center or the assessment analysts would provide the best recommendation, with the SSC review and approval, of which period is appropriate, depending on whether the stock is declining, increasing, or in a variable state.

DR. REICHERT: Thank you, Alexei, and I agree with that.

DR. BARBIERI: I just wanted to supplement what Alexei just said. In the Gulf, whenever we have to provide a multiyear ABC, we try to use our professional judgement there, expert judgment, in evaluating more uncertain versus less uncertain assessment and then more uncertain versus less uncertain projections. The rule of thumb, for us, is never go more than five years, and usually three or less, but this is like -- It's just a casual sort of off-the-cuff rule of thumb, and, within that, we judge what the uncertainty is expected to have, relative to some other assessments, and proceed accordingly.

DR. REICHERT: Thanks, Luiz. Anyone else? John, I think you have enough guidance here right now.

DR. BOREMAN: In the Mid-Atlantic, we often get asked for three years, and it's for the convenience of staff, so they don't have to be submitting a specs package every year, which is -- Sometimes we feel sorry for them, and sometimes we don't. This past year though, we were asked to have a three-year spec for blueline, and we said no. It was in the terms of reference, and the SSC was just not comfortable going more than one year. Was it blueline?

It was one of those species, because we're due for -- Yes, it was the blueline, because we're expecting a stock assessment at the end of this year, and so, next year, we're saying probably all bets are off for what's going to happen next year, but Luiz is right that we look at the stability of the stock, how comfortable we are with our recommendation, because sometimes our ABC recommendation is kind of like, okay, here it is and good luck. For those, we don't want to give them three years. We will give them one year, but usually, in our case, it's up until the next update, and that's usually two or three years down the road.

DR. REICHERT: Thank you. Then the next action item is Action Item 6, allowing the phase-in. Is this relative to the previous --

DR. SERCHUK: Just relative to John's comment, because he mentioned this yesterday. When the Mid-Atlantic sets their three-year specifications, they either get a data update every year that allows them to have some comfort, based on that data update, whether their specification process is still appropriate, and so there is another aspect to going to multiyear specifications, and that is are you able to do some sort of checking on whether the conditions of the resource are such that the projections of catch are still appropriate. I think that's an important aspect.

DR. REICHERT: Thank you, and I think we actually discussed that on various occasions, and I think we also mentioned what could be used, and it goes back to kind of the rumble-strip approach, in terms of following where are we and are we still on track, and that's where things like landings and fishery-independent data streams and the fisheries performance reports may come into play, and so thanks for that reminder, Fred. Moving on to Action 6, that's the phase-in of catch changes based on the revised ABC recommendations.

MR. CARMICHAEL: As I mentioned, this has been worked out in some potential options in the dolphin wahoo amendment that is in prep right now, and so there's a little bit of details about it, and what's been looked at is, if there is a large change in the ABC, then allowing some phase-in, based on some percentage of the OFL. 90 or 95 percent, for example, is listed here. It's just food for thought. How much could we phase this in over time, and it's getting at the step idea that we talked about of addressing this.

Say, in year one, you could go to some percentage or go to the OFL or something close to the OFL, slightly below the OFL type of approach, and then, in year two, you go to something else. Then do you go to the ABC in year three or do you extend it out, and so I think there's a lot of details that could be worked out. What would be helpful, from the SSC, is kind of like what we did with the other, and what are the important biological concerns that we might want to factor into this when trying to specify these details?

DR. REICHERT: John, one of the thoughts I had was just the biological aspects are important, but I think some of the socioeconomic aspects are also important, because a certain percentage in one fishery may carry entirely different socioeconomic implications than 20 percent in another fishery, and so that's one thing that I would like to mention, in terms of our considerations there, and so let's -- That may be difficult to set fixed percentages, but I think those are, I think for the SSC, important aspects.

DR. BELCHER: The first thing that I thought of was, if you're in a situation where the stock is going to need to be rebuilt, you may not be able to be as liberal to be close to OFL, would be my

first thought, and then the second thing is, again deferring back to Erik, is knowing that it's doable, but the complexity of what's involved with the phase-in, to see what the projections do, because, again, it's going to be built around that -- If it's tied to a P*, there's a probability of whatever the trajectory is, and so that phase-in would have to be spelled out in order for the projection to be run.

DR. BOREMAN: We actually did go through this a couple of years ago with summer flounder, and the assessment came in, the updated assessment, and summer flounder were in dire straits. The year class we thought was going to be there in 2009 just didn't materialize after that, and the assessment basically imploded.

We wound up with an ABC that was a 70 percent reduction in the ABC, because the summer flounder is right on the border now of -- It's like the stock biomass is 54 percent, and so it's very close. We were specifically asked by the council, in our terms of reference, to use a phased-in approach, and the justification was solely economic. Most of the party and charter boat fishing was going to be put out of business. I have a letter in my scrapbook now from Senator Schumer, who wrote to me directly. It's right next to the one I got from Hillary when she was senator and I was Center Director, and so it was interesting, but they're saying please don't do this to us.

We weren't happy with it, but we were asked for this number, and so we gave it to the council. This past year, it was year-two of the phase-in. What we did is we phased in that reduction over three years. It was basically one-third of the reduction each year, and so, by year-three, they had the full reduction.

We revisited it this past year, and things looked worse for the stock, and we couldn't, in good conscience, continue to recommend the phased-in approach, and so our ABC for this past year we abandoned ourselves, voluntarily, the phased-in approach, and that's where we are now, and I don't know how the survey is looking for this year, but it's not well, but we did try it, but, for this stock, that was in dire straits, and so, in that case, maybe a phased-in approach is not the best way to go.

DR. REICHERT: Thanks, John. In thinking about the biological and socioeconomic factors, Shep, maybe you can shed some light. Do the biological factors, like the stock biomass, trump socioeconomic factors, according to Magnuson-Stevens?

MR. GRIMES: I would say, in the grand scheme, yes, in terms of preventing overfishing and achieving optimum yield and all of that, but I'm not aware of a biological reason for phasing in the necessary reductions. I think they're purely social and economic, but, in terms the revisions to the National Standard 1 Guidelines, in response to comments, the agency's official position is mentioned in a number of positions that NMFS believes that the two most relevant factors relevant to the decisions about whether to use a phase-in or a carryover are risk of overfishing and scientific uncertainty.

I think, like just in the construct that's here, and I could be wrong about this, obviously, but it seems to me that basing it on a distance from OFL is a risk of overfishing concern, or a means of addressing that risk of overfishing, but I don't see how the scientific uncertainty is evaluated in this construct, and I think that's something you would, regardless of what you end up doing, you would have to address.

I did think about this, and maybe this a peanut-gallery comment, but I was thinking about this on the plane, and I had envisioned this, or an option for this, as being a distance -- Let's say need a 20 percent reduction. A rule might be that you have to have 50 percent of that come in the first year, in order to take the biggest cuts up front, because response to comments in the National Standard 1 Guidelines talk about a full-down-slow-up approach, I think it is, and I think it's from the Alaska groundfish stuff, where, when you have the reductions come in, then the reductions come in fast.

When things are increased, they would step those up, that being a conservation -- It's sort of the opposite of what you're talking about here with a phase-in, but it talks about that, and the agency doesn't feel that's a mandated approach. Thus, you could allow a phase-in, but still, from a conservation standpoint, that was an approach that they supported in the context of that Alaska groundfish FMP.

DR. REICHERT: Thanks for that clarification. I think that's very useful.

DR. SERCHUK: This was a problem with the New England fisheries way back when, quite frankly, and it was the Wimpy approach. I will gladly pay you on Tuesday for a hamburger today, and what they basically did is say, on the rebuilding, we want to go slow now, because there is going to be economic disruption. What they found out later on is they could not reduce the catches enough to reach the target. It would have been disaster.

They would have to go down to zero, and the lesson that I learned from that, in going through a number of stocks at the time, was, as Shep pointed out, you really get the biggest bang for the buck, from a conservation point of view, if you take your decreases upfront, and, again, I realize you have to worry about economic dislocation and you have to worry about communities and so on and so forth, but the fact is that you have to take your medicine sometime.

What happened in the middle of the cycle was to say, no, if we take them now, we're really going to be out of business, and so they kept putting it off and putting it off as an economic emergency, and that happened time and time again in those early years. Now, hopefully we've learned something from the process, but you will have to be very careful of phased-in reductions that you follow the schedule and not allow subsequent things.

As John pointed out, later on, you can find out that, wait a second, things are much worse than we thought. We have an updated assessment like we had now with the red grouper, and, quite frankly, it's going to be even tougher now to stick to that schedule, and so I'm not saying that phased-in reductions aren't appropriate, and I understand about economic dislocation. I understand about all of those socioeconomic factors that are important. That's why we're managing the resource, quite frankly. It provides for fishing opportunities, both from a commercial and recreational point of view, but, if you have to move the stocks away from a bad condition to a good condition, phase-in reductions just often delay that, if you don't take big enough reductions upfront. That's my experience. Thank you.

MR. CARMICHAEL: I think maybe would you consider an appropriate criteria being that say the stock should be 75 percent of SSB MSY or higher? I think, when you're in a rebuilding situation, delaying can be very damaging to the biology of the stock, but I think, when you're not in a rebuilding situation, then perhaps there is less risk and this is a more attractive approach.

DR. CROSSON: Just a little bit of background. Federal economists, including NOAA economists, are required to follow OMB's guidance, in terms of projecting future economic impacts, and we're supposed to tie those to discount rates that we use, how much you discount the future, and we're supposed to tie those to long-term Treasury bills, depending on the timeline that you're using, and interest rates have been relatively low for an extended time period, meaning that, unless interest rates rise sharply, we do not discount the future very heavily, which means that, again, those future stocks are considered to be quite valuable. As those interest rates rise, there is obviously an incentive for you to change your behavior, but that's just in terms of the economic analysis that we would provide, that's the current situation, and so I just wanted to clarify that.

DR. REICHERT: Thanks, Scott. Anyone else?

DR. CROSSON: If you notice mortgage rates going up, then that's telling you, again, that -- Never mind.

MR. CARMICHAEL: Let's get back to the hamburgers.

DR. REICHERT: Okay. I hope that all of you all kept looking at the screen, in terms of Mike capturing the important parts in our discussions, and I will ask him again, like he did last night, to send that to you tonight. Take a look at it and then provide us some feedback. Then we will go over this tomorrow afternoon. That leaves us with Action Item, clarifying the ABC control rule, Number 7.

MR. CARMICHAEL: Number 7 is our existing control rule talks about using the P* adjustments to inform the probability of success of rebuilding, but it doesn't really state how you get the ABCs in any given years, and what we have done is the council takes that probability of success under consideration when it sets its rebuilding plan, and it has tended to go along with the recommendations of the SSC in most of the rebuilding plans it has done since we've been doing this approach. Then, once they have done that and set that and decided what their rebuilding period is, what their rebuilding approach is, and what their probability of success is, that generates the rebuilding parameters, and those are projected to give the rebuilding ABCs for each year.

The issue is that that isn't really stated within our control rule, and there is not clear language that says that's how you will do it for rebuilding stocks, and we just want to make some language in there that says that's how you will do it for rebuilding stocks, and so, unless people have concerns or dissatisfaction with how we've been doing it for the last few years, we will just work on including this to revise our rule.

DR. REICHERT: Any remarks or concerns? I think it's a good idea to include it in our ABC control rule, and I think Alternative 1 is basically our approach, and so I don't have strong feelings about changing that or adding anything. Anyone else have any concerns or comments? If not, let's move to Action Item 8, to allow carryover.

MR. CARMICHAEL: We're getting there. Carryover is actually one that was in dolphin, and I guess it's been a long day. I was thinking about that on the other one, but this spelled out more in -- Tilefish had the other one, but this is spelled out more in the dolphin. The idea is that, in cases where there is some unused ABC, you ought to be able to carry it over. What we did in dolphin is

try to look at some of the stocks that we've done and try to get a sense of how much carryover might be appropriate and before you get into exceeding the OFL.

Really, what that gets down to is the amount that you can carryover and not exceed your OFL really is tied to how much buffer there is between ABC and OFL. When you know OFL, it's pretty straightforward, because you know you can carry over an amount up to equal OFL, and, where the dolphin gets more creative, is because, in dolphin and wahoo, we don't know the OFL, and so we had to look at, well, if we take the average stocks across the board, what's the sort of typical buffer, and then how much then can you potentially carry over, in terms of your absolute ABC, before you might get up to exceeding the average buffer, and it looked like 105 percent of ABC was pretty good. Getting much more than that started putting you in risk.

If you had a really buffer, then you can go up to 110 percent, or maybe 120 percent, in some cases, but those are really high-buffer stocks, and you don't know, necessarily, how well our buffer really is on these stocks that are unassessed and based on pretty data-limited approaches in our ABC control rule. This is one the council is definitely interested in looking at, and there is some different provisions about how much can be carried over, and, again, the same sort of questions, guidance, and considerations and concerns here would be useful.

DR. REICHERT: John, I had a question. Remind me what those percentages are based on.

MR. CARMICHAEL: Well, there is percentages of how close to the OFL you get and then there is percentages of how much over the ABC you can get, and they are just based on trying to come up with some alternatives that seem reasonable.

DR. REICHERT: Okay.

MS. LANGE: I am not sure about here in the South Atlantic, but I know, in some areas, the accountability measures allowed carryover in some stocks. Is this a totally new thing not addressed by the --

MR. CARMICHAEL: The councils have always had the ability to carry over between their ACL and the ABC, but a council can never exceed the ABC, and a lot of the South Atlantic Council stocks, especially ones that are in the non-assessed categories, the ABC equals the ACL. The council really has no inherent ability to carry over, because the ABC equals the ACL, and so what they're interested in doing is, as is allowed under the Act, to allow them to have a temporary -- It would be a temporary higher ABC that would fall somewhere between the ABC you recommended for that year and the OFL for that year, and it would be higher based on however much is carried over, and so you could be in a case where maybe they left 10 percent on the table, but you only have a 5 percent difference, perhaps, between ABC and OFL. They could only carry over up to that OFL, because the guidelines are clear that this can't exceed the OFL.

DR. BOREMAN: I have, throughout my career, have had a lot of issues with this type of management, this carryover. What we didn't catch this year, maybe we can catch it next year, and I guess it comes down, at least to me, is one factor is the biology of the species. I can see a species that, if you don't crop them this year, the standing crop will be there next year, and that's a species with a very low natural mortality rate, like quahogs. They live for 300 years or whatever, and so,

if we don't catch the clam this year, there is a strong likelihood that it will be there next year to catch.

Other species that have a much shorter life cycle, a much higher natural mortality rate, that fluctuates from year to year, where their recruitment is dependent on environmental conditions that may or may not be stable from year to year, a lot of factors need to go into it before I would be comfortable in recommending a carryover strategy just across the board. I think we would have to put some parameters on it, in terms of what types of stocks, like clams, for example, or corals, for that matter, where it may be worthwhile to use this. My other comment was along the lines of Anne's. Maybe an area to address this is in giving credits in the accountability measures rather than strictly moving quotas from one year to the next.

DR. REICHERT: Thank you.

DR. BELCHER: I agree with John's comments as well, and, again, it's -- Rebuilding strategies, I mean, red grouper, because we just talked about it this morning, we have this huge difference between what was realized and what was potential, and so the carryover there would not have been a good thing, based on what came out of the current stock assessment. The past one, maybe it wouldn't have been a bad idea, but I think, if it's any of it is under the rebuild, or concerns of overfishing levels, and maybe you can't be as liberal with letting them go back up to that level.

MR. CARMICHAEL: So we would say there shouldn't be any carryover within a rebuilding plan.

DR. SERCHUK: I just wanted to follow up as just a clarification. Did you say that you could carry over -- If you didn't exceed your ACL, you could carry over the unused portion of the ACL to the next year?

MR. CARMICHAEL: Yes, the councils can do that now, because they can't exceed the ABCs.

DR. SERCHUK: I understand that, but the very first presentation that we had at our meeting looked at the landings in relationship to ABC and OFL. We focused on those that exceeded ACLs, but we didn't look at those that were 20 percent and 40 percent and 50 percent, and I am just wondering, has there been any impetus by people to say that we only caught 40 percent of our ACL and we want to transfer that into next year's specifications? I mean, you can look at the sheet and say --

MR. CARMICHAEL: I can't say for sure there's been any where it was that far removed where they wanted to do that. It seems to be, in most cases, it's coming in situations where they're bumping up pretty close to it, and maybe they end up at 95 percent of it one year. Then they would like the chance to try and get a little closer to it next year, or maybe have the accountability measure for a closure -- That would make the accountability measure for a closure kick in a little bit higher, and maybe they end up catching 100 percent of it, and so that's kind of where it's come up.

DR. SERCHUK: Because that's where I think the fishery performance reports are going to be very useful. They will basically say, look, we only took 35 percent, because, quite frankly, either the market wasn't there or the fleet that normally fishes here fished someplace else, and so maybe that's the reason that you're not getting that hue and cry to say that we want to carry that over. I would expect that, if you were bumping up near 100 percent, basically saying, wait a second, our

fishing was constrained and we only got 92 percent, and now we want to carry that over. Thank you.

MR. CARMICHAEL: No one has talked about carrying over red grouper, because, when they're that far, they're more about how do you get the regulations so we get closer. It's some of the ones where maybe they have faced closures, or they have faced threats of payback, and they're like, well, when I go a little under, I ought to get a chance to carry that over.

MR. GRIMES: I would just reiterate what I read earlier, in terms of response to comments, that this should take into account, in the ABC control rule, that the Guidelines say that any of these phase-in or carryover provisions must be supported by a comprehensive analysis that specifies when they can and can't be used, two main issues being risk and scientific uncertainty.

Again, I would see this -- I could be wrong, but the argument is that this seems to be focused more towards probability risk of overfishing versus scientific uncertainty, and so maybe things about carryover and the ability to carry over would be limited by the data certainty you have in the catch, which might be problematic, but, if you're more certain that they harvested this amount and didn't exceed it, then you would be more likely to allow a carryover, or vice versa.

DR. BARBIERI: I was thinking about that as well, Shep, because you know I expected a little more explicit guidance from the agency on how to operationalize this topic, because it has been discussed for a while, and folks keep going back and forth, and I haven't seen the full set of documentation that came out, but I would expect that there would be more clearly-defined criteria there.

DR. SERCHUK: Are there, in the management plans currently, accountability measures when you exceed your OFL?

MR. CARMICHAEL: Yes, there's accountability measures that tend to kick in when they exceed ACL. It's intended to keep you below ABC and OFL.

DR. SERCHUK: Okay. I'm looking at the chart that we saw on the first day, and blueline tilefish exceeded the OFL by 20 percent. It was 120 percent. Then snowy grouper was 128 percent, and cobia was 191 percent. How are those overages handled in terms of any accountability measures?

MR. CARMICHAEL: Under most of the South Atlantic Council's accountability measures, if a stock is in a rebuilding situation, then there's payback. Then, if they're not in a rebuilding situation, then there is various ways of dealing with it. In some cases, they have to reduce the seasons or reduce the limits in some way to keep you from exceeding that. In other situations, they will monitor it the next year, to see if it's just a one-year situation or if it's something that is happening, and so this is why you're in the case with cobia, for being over, that they have shortened the season and put closures in.

The challenge with cobia is that not all of the states have been going along with the federal regulations, and that has created a real challenging situation, in terms of catching up with controlling that one.

In snowy, the challenge in snowy is you notice the limits are so darned low. It really doesn't take much, in the way of some encounters, for snowy to suddenly go way over, particularly in the recreational fishery. It's just such a low catch limit. It's almost down into the noise level, quite honestly, but snowy is in rebuilding, and so I think the commercial fishery in snowy has a payback. I am trying to recall that one. It's been a while that that one has been in place.

DR. SERCHUK: Thank you.

DR. REICHERT: Any other comments? I think this may be an item where we're probably going to look at some more detail, in terms of how this is going to be implemented.

MR. CARMICHAEL: Then the last one, the one you've been looking for, is the deviations from the ABC control rule, and so the Guidelines say, somewhere in there, that you can deviate from them. We're just wondering if you would more comfortable stating this explicitly, and, if so, do you think you should be able to put some situations in which you would like to deviate?

DR. BOREMAN: My recommendation is to put words in there so there leaves no doubt that we always have the escape clause, or sanity clause, that you can fall back on in saying that we tried everything and nothing worked, and so we're going to need to try something else. Even though it may be assumed, it's nice to have it explicit, especially for our lawyer friends.

DR. BARBIERI: To that point, because there is explicit language to this effect in NS 1, I don't think we need much more than that, but it should be in our control rule, something that references that guidance from the agency as a way for us to have some criteria for justifying deviance from our ABC control rule.

MR. GRIMES: I presume you mean specify in the control rule what's in the Guidelines that you can vary, but not in your control rule be overly prescriptive about when you can vary, because then, when you don't find those facts, lawyers will cause problems.

DR. REICHERT: Thanks for that clarification.

DR. BARBIERI: You understood me correctly, Counselor. Yes.

DR. BOREMAN: We have wording on our control rule that we can share, but it basically says that we can be flexible as long as we provide justification.

DR. REICHERT: Yes, exactly, and I like that a lot.

DR. CROSSON: I like that flexibility a lot more than what I was coming up with. Again, it was related to discount rates.

DR. REICHERT: I am more inclined to start thinking about burgers. John, that was the last action item, if I remember correctly, and so any parting thoughts?

DR. CROSSON: I am not going to go into detail on this, but I am just going to state that the SEP was asked to look at some factors with the control rule, and so we were asked about the fishery performance reports, and we took a look at those. We had a few suggestions on things that could

be added to that, and then we had some other economic and social variables to look at when you don't have good biological data or you mistrust the biological data, and so that will be in the SEP report that will be distributed soon.

DR. REICHERT: Thank you. With that, I think we were to talk a little bit about the fishery performance reports under this agenda item, and I propose that we postpone that until tomorrow afternoon. I really appreciate all of us wanting to -- Go ahead.

DR. BARBIERI: I'm sorry, Mr. Chairman, but I am feeling a little bit here like a quahog, 300 years in the mud.

DR. REICHERT: I wanted to thank everyone for staying with it. I really wanted to complete this agenda item today, because we have a lot on our plate tomorrow, in particular in the morning, relative to red snapper and some other agenda items, and so I want to thank all of you for staying with it and completing this agenda item.

DR. DUVAL: I also want to extend my gratitude to you guys. I know these are tough conversations. It's extremely detailed, and it's mind-bending. I appreciate all the care with which you guys discussed this. It's taken a long time just to get to this point, and I would encourage you guys to keep on working on this. I know that Fred mentioned the National SSC Workshop will be addressing some of these issues that would help inform your future discussions, but please don't stop or wait, because the council needs these revisions to our control rule sooner rather than later, and you're a very important part of that, and so thank you all for your efforts, and so attaboy and girls, and keep it up.

DR. REICHERT: Thanks, Michelle. On that note, let's recess until 8:30 tomorrow morning, and we will see you tomorrow.

(Whereupon, the meeting recessed on April 26, 2017.)

- - -

APRIL 27, 2017

THURSDAY MORNING SESSION

- - -

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn, Charleston, South Carolina, April 27, 2017, and was called to order at 8:30 o'clock a.m. by Chairman Marcel Reichert.

DR. REICHERT: Good morning, everyone. I am really happy that we got all the complicated agenda items out of the way yesterday, and so let's talk about red snapper this morning. Mike reminded me that we didn't get to the fishery performance reports, and so we'll get to that after we discuss Red Snapper Amendment 43, and that's Agenda Item 9. I want to remind everyone of the assignments for this agenda item. It's Luiz, Jeff, Alexei, George, and Church, and I think most of the people in that group were involved in the red snapper assessment.

The attachments are Attachments 19 through 23, and so what we will do today is I'm asking Chip to give us a little bit of an overview, to set the stage, and we'll have a little bit of a discussion, and we'll see where the discussion goes. Then we'll have public comment after Chip's presentation and then we'll continue the discussions.

DR. BARBIERI: Mr. Chairman, just a quick question. In terms of the preparation of the report, assistance with that preparation, do you want us to coordinate amongst ourselves first and then send you a consolidated, or should we all send you our individual comments?

DR. REICHERT: I like the coordination, but what I would like to do is, at the end of the agenda items, before we adjourn, take a look at what we have. Then perhaps we can decide if there are substantial additions needed or clarification needed. I may ask the groups to coordinate amongst themselves and then get us the consolidated notes, and so thank you for that, but that's how I would like to approach it, because we may have the bulk of the report written, and I really want to commend Mike for keeping the notes. I think it's been very helpful and very good, what I've seen in the report so far. Okay. Chip, would you mind starting us off? I do want to mention that Laura Lee is on the webinar, and so we'll give her an opportunity to chime in if she indicates so, and so, Chip, thanks.

10. SNAPPER GROUPER AMENDMENT 43 - RED SNAPPER

DR. COLLIER: With red snapper, recently there was an error discovered in the headboat survey, so we're going to get a new presentation for the SEDAR 41 base run and the correction presentation.

Attachment 21 has a series of letters between the Southeast Fisheries Science Center, the Southeast Regional Office, and the South Atlantic Fishery Management Council. In time series, it goes the most recent to the oldest. If you start off with the oldest, it kind of indicates that there is some issues with using the current discard estimates and determining whether or not -- Using that for estimating the ABC.

In this letter from -- It's the last one, and I believe it starts on page 7, and, in this letter, it's indicating that there has been sufficient -- Through the closure in 2015 and 2016, that addressed some of the overfishing and, therefore -- They also indicated that there were some issues with using the discard data for managing what the ABC, and, if you continue up from this one, this is the Science Center indicating some of issues with the discard data. It's some of the uncertainty in MRIP and then a lot of the mortality in 2015 and 2016 would be associated with the discard data and then changing from the current telephone-based survey to a mail survey.

If you continue up from this one, the council asks questions on what should we be using in 2017 and beyond for managing this stock. They also have questions on an index-based approach, in order to derive an ABC, if that's possible, and provide additional guidance on the issues with MRIP.

The most recent letter starts on page 1. Once again, they are indicating the issues with the MRIP data and using that for calculating. The uncertainty is high for discards for the species. We should

potentially develop new methods and explore other methods for tracking the ABC. With that, I just wanted to give you guys a little bit of background. If you have any questions, all those letters are there for you. I don't really want to interpret anything. Those are for you guys to interpret and discuss if you like.

DR. REICHERT: Thank you, Chip. In preparing for the meeting -- I just wanted to get some guidance from the committee how we feel we should proceed, because I expect that we are going to have quite a bit of discussion about this, and I want to make sure that we're using our time most efficiently, and so, as Chip indicated, there was a corrected assessment. We have discussed already the likelihood estimator. In this assessment, the robust multinomial likelihood was used.

Also, the terminal year of the assessment was 2014. We have the issues with the uncertainty in the MRIP estimates, and then also, as Chip indicated, we have the letter from the agency that indicated that adequate management action has been taken to address overfishing, and so there is a couple of things.

If we still feel that we should use the assessment as the basis for our recommendations, then that's potentially one approach that I have thought of. The other one is if we collectively -- This is hypothetically. If we collectively feel that, given what happened since the completion of the assessment, that may not be the best way to go, then we may have to go back to our ABC control rule and see where that leads us. If that doesn't lead us to an approach that we feel comfortable with, then we can move on, and I can ask Chip to complete his presentation, or there are other approaches. I would like to open the floor a little bit for a brief discussion of what the committee feels is the best approach to this agenda item, because, as I said, I expect quite a bit of discussion, and I want to make sure that we use our time as efficiently as possible.

Before I do that, let me remind you of the action items. The first one is to review and provide comments on potential issues with permit reporting requirements. Actions 8 and 9 in the document that Chip provided were designed to improve landings and discards estimates from the private recreational fishermen.

The next action item is Action 12 in Chip's document. That will include a new estimation of red snapper discard mortality caught from headboats and charter boats. Additionally, descending devices and venting are alternatives to reduce discard mortality, and we have talked about that off and on in previous meetings. Then review and provide comments on estimation methods. Then the last one, and I think, currently, that's probably one of our most important action items, at least in my opinion, is to review and provide comments on approaches for obtaining a red snapper ABC. I would like to open the floor to see if anyone has any ideas on how to approach this agenda item.

DR. BARBIERI: Do you mean in terms of the order of discussion or --

DR. REICHERT: Yes, in terms of the order and what should we devote a large part of our time on.

DR. SCHUELLER: If we take them in the order under which they have been provided in the action list, it seems like the first two we can discuss easier than the last one, and so I think -- I don't know. My recommendation is let's take them bullet-by-bullet, as they are written up there, and just move forward.

DR. REICHERT: Any other thoughts?

DR. ERRIGO: I just wanted to maybe clarify. People were asking if -- Please correct me if I'm wrong, but the letters from the Center and the Regional Office are saying that, due to the amount of uncertainty in landings and discard estimates and changes to the survey and the time since terminal year, projections are no longer reliable and not considered best scientific information, and so they cannot be used. The changes to the assessment were deemed to be rather small, and stock status did not change, and so I think Marcel is saying can we forego the presentation of the modified base run and move right into addressing our action items.

DR. REICHERT: I am asking the committee if that's an approach that we are comfortable with or not. I am not suggesting anything, but I just want to present that to the committee.

DR. SERCHUK: I am also concerned about the process here. We spent considerable time at our last meeting going over the red snapper assessment. We had people that are on this SSC that participated, or maybe it was two meetings ago. I can't recall now, but we spent a considerable amount of time on it. As I understood it, the assessment was accepted by the peer review that was done. We believed, in our discussions, that it represented best available science, and so the question -- We have a different opinion that's coming back to us on the adequacy of that assessment relative to providing projections then we had in our discussions, and so I think we have to go step-by-step here.

One, do we feel that that assessment and our evaluation of the assessment and the peer review process that looked at that assessment is still valid? If not, what has changed? We endorsed that assessment. We recognized that there were some -- There was some uncertainties with the assessment, and I would actually like to hear, because we had members, from their viewpoint, that participated in the process before it was brought here. They presented their views at that time, and we accepted their evaluation of it, and we went on record as saying, yes, this assessment has uncertainty, but we believe that it represents the best scientific information available. I think we either have to reopen that discussion or we have to endorse our previous decision. Thank you.

DR. REICHERT: Thank you, Fred, and that's exactly why I brought this up. If the members who were part of that assessment would want to chime in, then please do so, but you are absolutely right, and that's why I highlighted some of the points that have had an impact, that could potentially have an impact, on how we approach the assessment at hand that happened since the completion of this assessment. That's why I wanted to open that discussion, and so thanks for that clarification, and I agree with you. If any one of the members who were involved in the stock assessment wouldn't mind commenting. Luiz, you were heavily involved in that assessment.

DR. BARBIERI: Well, a couple of things. One is I am looking at the response in Attachment 21, RS Guidance, Request, and Response, and so I think this might have to do with the agency's role, and we've had this discussion before here and with the council, regarding final stock status determination.

My understanding, from these letters, is that, basically, the agency, through the Southeast Fisheries Science Center, is actually telling us that the assessment was completed and that it was accepted by the SSC to indicate stock status after the terminal year of data, but it's not really useful to

provide management advice going forward. Then there are some -- The second page, which might be helpful to put up there Mike, and this is signed by Dr. Ponwith, and so this came --

DR. REICHERT: That is page 2 of Attachment 21.

DR. BARBIERI: Yes, and so it has SSC input for April of 2017 meeting, and so, reading that second page there, that's what I get out of it, and so the Southeast Fisheries Science Center would like to get feedback from the SSC on this proposed approach. It proposes creating an index projection methodology that uses trends in the fishery-independent survey to monitor rebuilding progress and serve as the basis for the SSC's future ABC advice to the council. Then those bullets there get more specific with some additional points regarding the issue. Then it says we are preparing a brief summary of the proposed approach and will be on hand to answer any questions the SSC may have at their meeting.

To me, Fred, to your point -- I understand your point, and I agree, but it's basically -- I think we had this same situation before, and I think it was with gag grouper was one, and I think the other one was one of those deepwater groupers, not yellowedge, but maybe snowy grouper, where we made a determination, a final stock status determination, and provided catch advice going forward based on projections, but then the agency looked at their stock status determination criteria and how that fit into our advice and actually proposed something different, or determined something different and not proposed, in a response to the council.

I think that this is similar, and I happened to be up at the CCC a few months back, when there were presentations from the agency talking about a number of these issues, and Shep is here, and maybe he might be able to clarify it to us, but there are some -- My understanding, from those presentations, is that there have been changes in the way that the agency considers who actually identifies final stock status and even best scientific information available.

To me, this can be broken up into different pieces. One would be the assessment is no longer considered by the agency appropriate to provide catch advice, and, Fred, my understanding of that is that it did not change our previous determination of accepting the assessment itself or the projections or any kind of management advice going forward was not accepted by the agency.

DR. REICHERT: Or perhaps at the time, but new information has come to light that may tell us that that may no longer be the case, just as an alternative.

DR. GRIMES: I am not sure that the agency would agree with your characterization of it as them no longer considering it appropriate to -- Well, I think we ought to hear from the horse.

DR. SERCHUK: My comment was very similar to Church's. Nothing here says the agency has made a formal determination that the assessment does not represent best scientific information available. It says the agency has that responsibility, but it doesn't say, in this particular case, that we do not consider it the best scientific information available, and so I am actually a little bit confused about this process, and, forgive me, Chairman, if I feel that way, because I don't know all the facts, but we have a very extended process here.

We have put a lot of time and effort into it, and often that process comes back and says we can't accept the assessment, and we've had that happen several times already, where we've gone through

a benchmark process and then a benchmark wasn't accepted as a basis for determining the status of the stock and for making projections, and so my concern is not with the -- My concern is one of principle and not the specific instance here about how the process works with respect to developing the assessments and vetting the assessments through a peer review process and coming here and having discussions about whether we can deem it, in our view, best scientific information available, even recognizing that perhaps we're not the final arbiters of that, and then proceeding on that. If we could, I would like to get that cleared a bit before we even move on to the specific case here, because this may set a precedent, and if it is precedent setting, I think we need to rethink how we do our business. Thank you.

DR. REICHERT: Fred, I agree, and that's why I was opening this conversation.

DR. WILLIAMS: Let me, I guess, apologize, probably, upfront for the memo probably not being as clear as it could have been. It, unfortunately, was a little rushed probably in the way we wrote it, but maybe I can clarify what we really are trying to say in this with our response, and that is, A, that the assessment is the best scientific information available, as this body approved it and accepted it.

The issue is that monitoring is what we're trying to say is the difficult thing, and so we have an assessment, and we can get projections from it, and it tells us what our discard levels should be, but the concern now is that, because this fishery is completely discard driven now, and the bulk of those discards are coming from MRIP, which is a very uncertain source of information, that we now don't have confidence that we would effectively be able to monitor the fishery just based on this discards.

What we're proposing is to monitor the population, or monitor the management effectiveness, by projecting the index from the accepted assessment model. We can use that model to project out future index values under a rebuilding scenario, and so we do have a useful rebuilding target and a rebuilding timeframe, and we can use the assessment model to project what should that trajectory look like to get us to rebuilding.

Where we're stuck is we don't know how to interpret the discard levels as to whether we're on track or off track, because they're going to be potentially noisy, plus they're going to change in 2018, and all of those uncertainties that come with discards, but what we can hopefully track is future fishery-independent index values, and that's what we're proposing to do, is develop a projected index from the assessment and then track that with actual observed values as they come in from the fishery-independent survey, and so that's really what this is all about, is monitoring. It's not, in any way, are we saying that the assessment is not useful. It's actually very useful, and it's what has told us the condition of the stock right now, and it can be used to tell us where we need to go.

DR. BARBIERI: We provided, back in May of last year, projections for red snapper that came out of that assessment. Those projections are valid, and so, basically, what the Center is saying is that we need to develop new methodologies to monitor landings and discards?

DR. WILLIAMS: It's not necessarily -- This is where it gets us into a tough spot, because the whole Act is built around establishing ABCs. What we're suggesting is we can't really even establish an effective ABC. We know where the stock needs to go, and we can monitor its progress

through an index, and you can't set an ABC based on an index, and so that's why I think everybody is getting a little wrapped around the axle, but that's the point, is we can't rely on landings and discards to monitor the condition of this stock. What we're proposing is to use the index to monitor the condition of the stock.

DR. BARBIERI: Right, but besides monitoring -- I am just thinking, because we provided yield streams from 2016 to 2019 for OFL and ABC, and what I'm trying to find out is are those accepted as catch level recommendations to the council and are those approved as OFL and ABC yield streams?

DR. WILLIAMS: Yes, because those would rebuild the stock under the timeframe that we had in the rebuilding plan, and so yes.

DR. BARBIERI: Okay, and so basically we're just recommending monitoring?

DR. CRABTREE: Good morning. The difficulty is you have those projections, but we're not convinced that we can productively use them to monitor progress towards rebuilding, because the whole system is going to change, in terms of how the discard estimates are estimated, effective in 2018. There is huge uncertainty with the discards and what fraction of the discards survive and what doesn't.

Now we're injecting a great deal of additional uncertainty on that, and, at that point, it doesn't really become a useful tool to monitor rebuilding progress in the fishery, and so the council had come in asking for a new set of projections, because the ones you had actually reflected some of the catch being landed, which isn't happening now, and so selectivities in those projections didn't match up with what the selectivities actually are now, and the council asked for discard-only projections. The Center didn't feel like doing that was productive, because the uncertainty is going to be so great that it's not going to be a useful way to monitor rebuilding progress of the fishery.

Erik is proposing an index-based approach to doing this, because the index is probably the best signal we have right now, but where that leaves us then is how do we interpret the discards and can we have some limited fishery? We don't really have a meaningful catch level that we can apply to the fishery in a way that we can understand how that's going to impact rebuilding, and so I guess the question is can we get to some index-based approach to this and how could we get a catch level out of that that we could then use in the fishery, and I think that's what the essence of all this correspondence is.

The status of the stock in the report to Congress is the official determination by the agency of the status of the stock, and that is unchanged, and it remains overfished and undergoing overfishing, but we have noticed in that that determination is based on through 2014, from 2012 through 2014, and the fishery was open at that time. The landed catch was a substantial fraction of the fishing mortality, and the fishery is now closed.

In all likelihood, the overfishing is no longer occurring, but we don't have anything conclusive to demonstrate that it has actually stopped. That will take another stock assessment, and so the status of the stock is not changed. The question though now is how do we develop a way to monitor rebuilding progress and how do we translate that into a catch level, and I think that's really the

task before us, to figure out how to do that this year, so that we can get some type of advice to the council late this year, and figure out where to go from there, and I hope that's helpful.

DR. BARBIERI: It is. It's just understanding what happens with this yield stream that we have already provided the council with and whether we're going to generate new streams of OFL and ABC.

DR. CRABTREE: I don't think that you're going to today, but I think the hope is, by looking at some alternative methodologies, that, yes, we can come up with a different approach to coming up with a yield stream and some sort of catch level.

DR. SERCHUK: Thank you for that. That does shed light on the situation. Let me pose a hypothetical. Suppose we have an index and the index goes down. What does one do?

DR. WILLIAMS: I suppose you are posing that to me. That is the tricky part, and that's why we have to do some research on this. This is an idea at this point, and it's going to involve looking at levels of uncertainty, both in the assessment and the index, and recognizing that, unfortunately, we have a short time series for this fishery-independent index, and so it's hard for us to judge the historic uncertainty levels in it, and so this is where it gets really tricky.

I don't know how precise that number would be, if we can even do it. It may be just a qualitative sort of result that says there is a 50 percent probability that you're on track and there is a 45 percent probability that you're under the track and there is a 5 percent probability that you're over the track. That might be the advice that comes. Then how you translate that into a management action is going to be the tricky part.

DR. SERCHUK: If I just can follow up, because there have been precedents of this before, particularly in the Northeast. We have had cases where the assessments have no longer shown to be viable, and, in those cases, we were able to link up a long time series of estimates from our resource surveys to a situation that you might consider that this is a rebuilt stock during this period, and this is what the survey indices were, and then we can look at the relationship between the catches and the survey index.

I think that is pretty much where you're going, but, typically, as you said, it requires a longer time series. You have to have some survey index that indicates a rebuilt stock, and you have to have some way to relate the exploitation rate that would get you to a rebuilt stock from the index of where you are now, and so, as you said, there are lots of things going on, but, when you have a very short time series and you can't link it to what a rebuilt stock would look like, there are going to be challenges. I am not saying it's impossible, but typically we use fishery-independent indices to talk to us about stock status and not as a way to talk about whether overfishing is going on or not. Thank you.

DR. WILLIAMS: Let me just follow up with what we do have in hand, in terms of information. We do have, as Roy pointed out, a stock assessment that suggests that overfishing is occurring and we are overfished. We have projections that, although based on that terminal year of 2014 indicate that if we continue with a small mini-season or -- We do have some discard-only projections in the original assessment as well. They all indicate that we're right on the cusp of whether we would rebuild or not.

We have information in hand that suggests that discards alone may keep us right at that rebuilding stage. The question is how much can we deviate from that, and I think that's what Roy is getting at. That's what we don't know. We just don't know how much -- If we wanted to open up a fishery, how much we could open that up and still have a reliable probability of recovery, and we're in unknown territory, unfortunately.

DR. REICHERT: Roy raised his hand, and so I want to -- Before I give you the microphone, we are getting into the discussion of the action items, and so I started the conversation just to give the committee an opportunity to get some feedback on the best approach, and so what I would like to do is I will give Roy an opportunity, and then what I would like to do is go back and we will have the two presentations. Then we will have the public comment and then we will have the discussion.

DR. CRABTREE: Unfortunately, we don't have the benefit of the data-rich and long time series that the Northeast has had, and so this is a challenge, and we're going to proceed with a great deal of uncertainty, I think, but I do think what we do see is a significant amount of recovery in red snapper, and we hear that from everyone, and that was consistent with the SSC's report that we're making progress towards rebuilding the stock.

There is good news in this, but it is going to be a challenge to figure out how to translate where we are right now into catch level advice and how can we monitor what's going on. We're just going to have to do the best we can, but I think it is going to be a challenging job for you folks to figure out, and it's going to take quite a time investment, but this is a big-deal issue. It's going to eat up the council process, I think, a lot over the coming year, and so we're going to need to figure out some way to proceed with this, because it's just that significant of an issue to the council, and so I thank you in advance.

DR. REICHERT: Thanks, Roy. Really briefly, to that point, and then we'll go to the presentations.

DR. BARBIERI: My whole point in what I am trying to think about is about application of our ABC control rule. It's basically that we are supposed to provide catch advice, OFL and ABC, according to our ABC control rule, and so I want to see where this would fit, because, if we accept the previous ones as a Tier 1 or Level 1 or whatever, how can we provide new ones under that same -- It's confusing to me, as far as that process, without basically not accepting the previous ones.

DR. REICHERT: That was my dilemma, and that's why I brought up that, procedurally, where are we, because we start talking about different approaches and how that falls into the ABC control rule approach, et cetera, and so let's -- Erik, you will give us a presentation on the stock assessment?

DR. WILLIAMS: I will try to be quick about this, because, as you guys discussed earlier, what we found, unfortunately, was a mistake in the assessment, but it's a minor one, in terms of consequences, and so hopefully I will be quick about this. We discovered an error in the headboat discard index, the way it was input into the model.

We corrected it, and we basically rewrote the report so that probably -- If you want to get into the detail of the differences between the version that you reviewed and the updated version, they're in

the same format. You could put them side-by-side, which is essentially what I did here. We just took a few key outputs and just put them side-by-side, to show that the difference here is minimal.

This is the index here, and so, throughout this, the corrected run is going to be on the left and the old, incorrect run is going to be on the right, and that's going to be throughout, and so corrected run on the left and old one on the right. Here is where you can see the biggest difference. The fit, obviously, isn't much different, but the index values are different, and that's what was incorrect in the assessment.

Here's numbers at age, and you can see very little effect. The corrected one has slightly lower numbers at age in the most recent two years compared to the old run, or the incorrect run. Biomass, again, not much difference there. Stop me if anybody wants to discuss any of these in detail.

Here is the recruitment pattern. There is not much change there as well. Here's fishing mortality. Again, almost imperceptible changes. Here is the benchmarks with the error around them from the MCB output. Again, there's very little difference. This is stock status, again with the error distributions. This is time series of stock status. Then I have this one of the MCB phase plot.

Then we have the projections, and so this is the F rebuild. Again, there's not much difference there. Here is that discard-only projection. Actually, it just delays the rebuilding by a couple of years in the discard-only projection. That is pretty much it. I didn't want to spend too much time, because it is a minor mistake. Are there any questions?

DR. REICHERT: Unless I missed it, but I was a little disappointed that there was no language in the report to indicate exactly what the corrections or the error was, and so can you elaborate a little bit on that? Unless I missed it in the report -- The other thing is I do agree with you that we can compare, but I think it would have been helpful for the committee to have at least a little bit of that language in the report to help us with the comparison, rather than comparing page-by-page the difference between the two reports.

DR. WILLIAMS: This plot is the only difference, is that the observed values, which are the lines with the error bars, those two data sources, that is the only change.

DR. REICHERT: I understand that, but I just think that, for me, it would have been helpful if that was a little more clear in the report, because, as I said, the only way we can figure this out, and I compared the two tables, Tables 24, side-by-side, but I think, for us -- Yes, it was possible, but I think it would have been helpful for us to actually have a little bit of language in the report to indicate that. That's what I was saying.

DR. WILLIAMS: Yes.

MR. BOWEN: Mr. Chairman, you touched on it a little bit, I think, there, but, Erik, if we can go back to the last slide that we had with the discards. Maybe you can explain it a little better for me and the people here in the room, but, with no effective way to measure the discards, how did the probability of being rebuilt back up two years?

DR. WILLIAMS: Well, if you look at these bottom plots here, you can see that the approach is almost like an asymptotic approach, and so it's a gentle approach to rebuilding, and so, just in this

case, there were enough changes that it changed that by a couple of years, and that's like the difference between -- It gets to like 48 percent and then 49 percent and then 50 percent in like the third year, and so that's such a small difference that then the minor differences that this change created, in terms of terminal F and terminal biomass, was enough to just result in a two-year difference in rebuilding timeframe, but I think that's all because this is -- It's approaching that rebuilding in such a sort of asymptotic way that minor changes can then create large year differences in change.

MR. BOWEN: So it wasn't based on discards and it was based on F?

DR. WILLIAMS: It's based on -- The F though was based on discards only, and so the F was structured so that it was a discard F and had no landed catch in it.

MR. BOWEN: Thank you. Thank you, Mr. Chairman, for allowing me to speak.

DR. REICHERT: Thank you, Zack. Any other comments or questions on the corrected assessment? Erik, maybe you can comment. Maybe I am misunderstanding, but you indicated that the differences were relatively minor. When I did the comparison, for instance SSB over MSST, there was like a 10 percent change, and so I assume that the differences between the corrected and the original assessment, depending on what you're looking at, may be a little larger or negligible.

DR. WILLIAMS: Right. It depends on, A, what you think is a large change or not, which, of course, this being red snapper, any change is probably viewed with a telescope of sorts, and it makes it magnified, but, yes, it affected different parts of the assessment differently. Some are nearly imperceptible differences and others are a little more clear what the difference was.

DR. SHAROV: Sort of a bridge from this presentation on the assessment itself, which is obviously clear that there are no changes following the corrections, and so, therefore, the conclusions stay. On the projection page, Erik, what is your sense of the utility of a certain timeframe? What is the timeframe that you think would be useful to use for management, in terms of the projections, beginning with the terminal year? In other words, when do the projection results become not useful to the management, given that we're in 2017, and, following this, seeing, like, for example -- I will stop here, and then if I could ask another question.

DR. WILLIAMS: That's always a tough question to answer, and so there is two facets to projections to consider when you're in a rebuilding plan. One is you need to determine what it would take to get to the rebuild status, and that rebuild is usually decades into the future. In this case, it's 2044, and so what is the utility of those projections to determine that?

Well, what the assumption is, it's that we have characterized recruitment well enough, in terms of its total uncertainty over that many years, that then the projection that tells you what you need to do to get to that rebuild status, many years into the future, is probably okay, but, in terms of actually setting catch on a year-by-year basis into the near-term future, then recruitment becomes an important factor.

Big year classes and small year classes coming in can change those landings quite a bit, or discards in this case, and so, therefore, you have to recognize that, after about four or five years, they start

to not become very useful, because you haven't actually measured any of that recruitment, and it's not long enough that you can absorb sort of the overall range of possible recruitment, and so I don't know if that helps. There is a distinction between using projections for determining what it's going to take to get to a rebuilt status versus using them for establishing an ABC in the near-term, and so I would just put that caveat out there.

DR. SHAROV: If I could follow on that, I am looking at the upper-left graph that shows a pretty steep increase in the population within the first few years of the no directed fishery and discards-only option. In thinking of the proposed method of using an index, did you already calculate, or did you think of estimating, whether -- If you would use current regression or the current relationship of your index with the estimated population size, would you be able to evaluate that, say by 2020, or 2022, the projected index must definitely, or with a 95 percent probability, get up and outside of the confidence interval, so that we could state, with significant confidence, that the population has been rebuilding?

DR. WILLIAMS: You are hitting right at the very crux of the problem with trying to determine how to use this index methodology, and so what we would be doing is taking this projection and project out the index values. Then what we're going to get is observations for the next few years, and we're going to see whether those points are above or below that projected index trajectory, and the question is how many of those points do we need to determine that we're off track or on track, and so that really boils down to characterizing the uncertainty carefully enough that we can say with some degree of probability or certainty that, yes, we're off track or, yes, we're on track or that, yes, we're above the track. It's tricky.

DR. SHAROV: Yes, but I mean that you already have the estimate of the uncertainty of your relationship between the population size and your index. Of course, within the limits of the few years that the survey data can provide you with. You can actually estimate now whether by -- Given this predicted steep rise in the population size, despite the uncertainty, and using the uncertainty level for your index, you definitely are going to be -- You would expect to see that index well above the current levels and with a significant -- I am repeating myself, I guess, but with a significant level of uncertainty. In other words, you can test it now, whether using this methodology you will be able to provide a detection and make recommendations.

DR. WILLIAMS: Right, and that's the plan, is to do some simulations, based on the levels of uncertainty, to see, all right, how many years and how far away does it need to be before we can say there is a significant change in the trajectory. That's exactly the research that needs to happen.

DR. REICHERT: We are moving into the next discussion, and so, unless there are any more questions relative to the corrected assessment, perhaps we can have Chip's presentation, and then we can continue the discussion, because I think that's important. Chip, to that point?

DR. COLLIER: A question that has been coming from the public, and I struggle with it, is what is the number of adults that we're looking for. Right now, it's in biomass, and having that number would be very beneficial when you're thinking of this index-based approach.

DR. REICHERT: Let's touch on that when we continue the discussion. I first want to see if there is anyone who has any additional questions relative to this corrected stock assessment. I have one that is not part of this, but this used the same robust likelihood as was used in the original

assessment, and, as we have talked about on a number of occasions, currently it's the Dirichlet that is used, as was done in red snapper, and did you have a chance to do a run to see what the effect is of a different likelihood estimator on the outcome of the assessment?

DR. WILLIAMS: No, we have not done that run.

DR. REICHERT: Thank you. I want to deviate from our procedure, and I want to give an opportunity for public comment right now relative to this topic. Then I am asking Chip to continue his presentation, and then we will have a public comment relative to that. If there is anyone who would like to make a public comment specifically about the discussion of the presentation that Erik just gave? After Chip's presentation -- It is related, but I saw that as a little bit of a different topic. Seeing none, then I am asking -- We may have some additional questions for you, Erik, and so if you're available in case, that would be useful. I appreciate it. Thank you, Erik, for that presentation. Chip.

Sorry. One question that I just noticed in my notes here is I just was thinking -- I may need some guidance on that, but does that mean that we need to change our ABC recommendations based on this corrected assessment? I am not sure who is best able to answer that question, but that's a question that I had.

DR. ERRIGO: That's an interesting question, because we have heard that, although the current ABC and OFL recommendations are best science, they are not useful, because there is nothing to track them with, and so we can update our recommendation. The SSC can update its recommendations, based on the new base run and the new projections, and I believe those will be in the same boat, that they won't be very useful for management, but I don't know, procedurally, what needs to be done there.

DR. WILLIAMS: I don't want to tell you what to do either, but I think the issue here is really you shouldn't be looking at ABCs now. If you endorse this idea of using the index to monitor progress, then what we need is a benchmark upon which to measure that index, and so basically it's a choice of which rebuilding scenario you would want to use then to then benchmark the index values against.

MR. CARMICHAEL: That's the fundamental question, I guess, is do we need to have an ABC or not? You have given an ABC, and we've said it may not be monitorable today, but you've given one, based on the assessment through 2014. We're under the impression that we need to have an ABC. You have the basis for your ABC, which is the revised assessment, and so the question is do you need to look at that and revise the ABC you've given, or are we able to say that ABC is unknown, based on what Erik just said? I think the fundamental question is do we need to have an ABC or not?

DR. BARBIERI: John, don't go away. Don't get up. This is --

DR. REICHERT: I will have Fred and then Luiz, but, Shep, to that point.

MR. GRIMES: Thank you, Mr. Chairman. This is awkward. Yes, I guess the statute says that you shall provide one. It's a mandatory thing, and that is reflected in the Guidelines, I believe, but, if you can't provide one, then you provide something, I guess, and it's difficult, in the context

of your ABC control rule and traditionally how you would recommend ABCs, but it's some sort of catch level recommendation that you have to provide. Just because it wouldn't strictly be what you would traditionally recommend, I would say that doesn't mean that it wouldn't meet the requirements, the minimum requirements, of the law, and that you provided a catch level recommendation.

DR. CRABTREE: Sometimes, to get to a meaningful catch level recommendation, it takes time. This is one of those occasions, and I don't think there is anything to be gained by trying to give a new ABC today. We don't have a useful basis to get to that. Now, there is a lot of interest in when is this fishery going to open, and it seems, to me, that it's not going to open until we have some kind of catch level recommendation, an ABC, that allows it to open, but I don't think you can get there today.

I understand the statute's requirements and things, but we're working on it, and it's going to take some time to get to some kind of recommendation to use, and so I think, right now, trying to come up with a new ABC today is not a productive use of your time. I think you need to focus on how do we get to an ABC, with the idea of can we get to something by say the end of this year and then get it in front of the council next year to take some action on, and I think that's the best we can do right now.

DR. REICHERT: I see a lot of hands, but that actually goes back to why I opened the conversation, in terms of how can we best provide a -- How can we best use our time, because, as I said, I expected a lot of discussion on this point. My dilemma, initially, was we provided an ABC based on the stock assessment that we had, and there is now a corrected stock assessment, and so, procedurally -- Anyway, that was my question. Procedurally, should we correct our ABC or maybe the changes were so small that we don't have to correct the ABC, because that was in the decimal points, but that was the background of my question.

MR. GRIMES: Just from a legal standpoint, I think what Roy said about until the council opens up the fishery and allows some harvest, then it's kind of moot point whether there is a catch level recommendation. There is really nothing to challenge, and the fishery hasn't been opened. Yes, I do kind of see the -- In terms of record keeping as a whole and on-the-record decision-making, you do have an ABC, and you do have that being based on an assessment that has now been corrected, and I know you've had a lot of discussion of that here, but just some formal acknowledgement of whether that would or wouldn't affect that past decision, regardless of how that past decision might be used to guide management decisions.

MR. CARMICHAEL: Two things. I think, if you're going to make a recommendation along those lines of whether or not you think the change in assessment would or would not affect your past ABC, you need to look at both. The other point is I think, given what Roy said, can you make a recommendation here today to say that ABC is unknown at this time and the information that we need to provide an ABC reflects upon what Erik said about looking at the index and things of that nature as a way to deal with the current situation?

DR. SERCHUK: From the information that's been presented that it results in a negligible difference in the assessment results, my recommendation would be to stay with our ABC. My more substantive point is I know that timing is of the essence. We have heard things about trying to get stuff in place by the end of the year, and this approach, to me, is terra incognita. It's unknown

territory, and I am thinking that any approach needs to be vetted with some external peer review, because no one has really evaluated this approach with respect to a very short time series and the uncertainty within the indices themselves.

I am concerned that whatever process we do that moves away from the standard approach that we have used be thoroughly vetted and understood, because I think there is lots of stumbling blocks along the way. I don't think we can do it around the table, and I am wondering whether the Service has thought about how this process will unfold. Thank you.

DR. REICHERT: Thanks, Fred.

DR. BARBIERI: I am still confused about what we are trying to do here, because basically we're saying that we provided an ABC recommendation to the council based on the stock assessment and that that is still valid, but we are being asked to provide a new ABC or not use the previous one, and so, thinking about our ABC control rule, either we reconsider our previous decisions or we set a different path going forward.

I just can't reconcile having yield streams that were provided by this committee considered valid and now we realize that they cannot be effectively monitored, and so I mean, just in terms of the ABC control rule, yesterday we spent quite a bit of time discussing, from the golden tilefish to the afternoon, the revisions to our ABC control rule, and I think it is important. It's in the Guidelines that we should be providing an ABC according to the ABC control rule, or, if we depart, that we have proper justification for that.

This is the part that I am trying to get clarity on at this point, is how do we reconcile the previous yield streams that we provided with the new ones, if there will be new ones, and where does that fit into the ABC control rule?

DR. REICHERT: Yes, and I agree. At this point, I want to separate how to move forward in monitoring and the like and the issue of whether or not, based on this corrected assessment, we need to provide a corrected ABC, and Fred put out to the committee that, based on the information, that those changes may be small enough that there may not be a need to correct the ABC that we provided to the council based on the corrected stock assessment, and so I would like consensus of the group, or more discussion, that that is indeed the case and that is part of the record. I may be mistaken, in terms of the best approach.

MR. CARMICHAEL: I don't think you have looked at the ABC effects here. You have seen effects on F and relative status and a lot of things, but nothing in there looked at yield or yield streams or anything, and so I think you're on a slippery slope, or dangerously-thin ice, if you say they're just negligible and it doesn't matter without looking at them.

DR. REICHERT: I agree, but Fred suggested that approach, and so that's where I was taking off, in terms of going back to where to move forward from here, and so that may be something that we may want to look at. Go ahead, Luiz. Otherwise, I was going to make a suggestion.

DR. BARBIERI: Go ahead.

DR. REICHERT: My suggestion is to table this very specific point, because we can make that decision of whether or not to do that if we have a little bit more time to actually look at that, and so I want to table that discussion at this point, and we may come back to that later, and move on to Chip's presentation.

DR. BOREMAN: Yes, table it, but I think we should request a recalculation of the ABC, so, when we do come back to discuss it, we know what we're talking about.

DR. REICHERT: Thank you for that.

DR. BARBIERI: That was going to be exactly my point, that we formally request a new OFL and ABC yield stream from the Center, so that we can actually look at that.

DR. REICHERT: Mike and Erik just mentioned that it's in the report, and so maybe we can pull that up later and take a look at that. Unless there are any comments or concerns on that specific point, before we hand it over to Chip, I would like to suggest that we take a quick break. It's about ten to nine. We will reconvene at ten o'clock. Thanks.

(Whereupon, a recess was taken.)

DR. REICHERT: Welcome back. I want to move on to Chip's presentation, and, at this point, acknowledge that we don't have to provide an ABC. We can acknowledge that we cannot provide an ABC at this point, and that's okay, to the council. We are working on a method, a process, to provide that ABC, and that's the last bullet point, where we are asked to comment on an approach to get to the ABC. With that, I am going to ask Chip to give his presentation, or continue his presentation, and then we'll have another opportunity for public comment. If I forget that, please remind me.

DR. COLLIER: This one is a little bit different than the ABC. This is going back to the amendment. It's Attachment 22, and it's a discussion paper for you guys. I just took out a few points from the amendment that we were needing some guidance on. If you remember back to the last presentation that I gave you guys, I believe it was at the last meeting, Actions 9 and 10 were to develop a permit and a reporting system for the private recreational fishery.

There were several questions that came up from the IPT, and we were wondering, from the scientific and statistical point of view, what is the benefit of a permit for the private recreational? Should it be for vessels or should it be for a fisherman? Those are some of the issues, I think higher-level issues, that you guys could focus in on and potentially provide some guidance to the council. You guys have some good experience, potentially, dealing with permits and different things like that for a private recreational fishery, but, as you guys have heard, it's very difficult to estimate, due to MRIP.

Red snapper, although they are becoming more common in the survey for MRIP, they are still a pretty rare-event species, and it leads to very high extrapolation numbers. To give you an example, last year, in 2016, in the charter boat and the private recreational fishery, the estimate of discards for red snapper was over 770,000 fish. That's not pounds. That's fish, and so it's getting to be a very common fish that's discarded. We would like to see what you guys recommend, as far as developing a permit and potentially a reporting system, for the private recreational fishery.

Then, under Action 12, that is an action to develop some best fishing practices. The way that we're going about this is similar to what the Pacific Fishery Management Council did for their development of discard mortality for Pacific rockfish, and what they did was they identified that descending devices -- The council had identified that descending devices were a potential tool to reduce discard mortality for rockfish. Rockfish were becoming a choke species, and they were potentially going to have several closed areas. In order to avoid going over the ABC for those species, they were looking into the use of descending devices.

They approached their SSC to develop an estimate of discard mortality using descending devices, and then they were going to use some level of compliance in order to apply a new discard mortality rate in order to avoid some of the closures in the Pacific rockfish fishery, and so we have also identified some other discard mortality values.

I have been working with Bev Sauls in order to develop, first of all, a base level discard mortality rate, and what we're doing with that is it's similar to the method that was used in SEDAR 41. However, in SEDAR 41, the number of recaptures in the South Atlantic was not sufficient to do her typical method that she had described in her paper in 2014. What she does is uses a proportional hazard model and looks at the number of fish that are recaptured in different condition groups in order to estimate discard mortality.

What we're looking to do, as opposed to condition it based on the Gulf of Mexico fish, is to primarily use just South Atlantic fish, in order to estimate discard mortality for red snapper in the South Atlantic, and we have different condition groups. We're going to have three different condition groups, a good condition, a good condition with venting, and then a poor condition, and then we'll use that to estimate a new value of discard mortality.

Since, in all likelihood, when this is going to be developed, the paper will not be reviewed, and we will not have an independent review, we were wondering if you guys are the appropriate body or if you would be willing to provide comments on this new method and whether or not it should be used, because that's going to be one of the basis for discard mortality in the South Atlantic.

A second part of this is looking at descending devices, and it's very difficult to estimate the exact percent of the benefit of discard mortality reduction due to the use of descending devices. It ranges from an improvement of 17 to 83 percent. It was an improvement in discard mortality from 83 percent discard mortality to 17 percent.

Looking at a lot of the discard mortality papers in the past, immediate, or surface, discard mortality accounted for 24 to 54 percent of the overall discard mortality, and so taking this potential use of descending devices, it's not likely that you're going to get 100 percent survival, even if you do use descending devices. There is going to be other impacts, whether it's a hooking injury, an embolism, or a fish that is released in compromised condition. Then there's going to be predation on that individual.

I came up with a range of potential discard mortalities, ranging from 33 to 85 percent, based on the literature, and, if you look at the attached document, it has a full list of a literature review, whether it's for red snapper, and that was done primarily in SEDAR 41, with some additions, but

there is also an additional review of discard mortality in the descending literature that was conducted by Pew and their staff, and that is provided as an additional appendix.

An approximate midpoint for reduction of discard mortality due to the use of descending devices could be 50 percent when you're looking at that range of 33 to 85 percent, and so that would be just the use of descending devices, and the second part of this is how many people would be using descending devices?

Looking into some observer data, and, once again, most of the discards are coming from the recreational sector. It's not the commercial sector, and so we can concentrate more on the recreational sector and potentially get better bang for our buck. Unfortunately, we don't have observers on private recreational fisheries, which is the primary discards of red snapper, and so we could use headboats and charter boats to look at this, and there is some information from SEDAR 41 looking at the usage of circle hooks in comparison, north of 28 degrees, where they're required.

On those vessels, you can see that it's not 100 percent compliance of using of circle hooks, and so, in all likelihood, we're not going to get 100 percent compliance on the use of descending devices either, and so, looking at that, a range could be -- Looking at circle hook usage on headboats, it was about 50 percent of the trips were using circle hooks. Then, looking at charter boats, it was about 60 percent, and so, using a conservative estimate, once again, of 50 percent, you could use that as a compliance rate. Given all these caveats and information, do you think it would be wise to use a potential reduction, the potential reduction for descending devices that was proposed and the potential compliance rate that was proposed?

DR. REICHERT: I know this is a complex agenda point, and I want to use this as an exception to allow multiple opportunities for public comment, but, since this is kind of a defined discussion topic, I want to ask if any of the public have any comments relative to the points that Chip just brought up. As I said, normally we have one opportunity for public comment, but, since we are talking about actually three different topics, I thought that it was a good idea to allow multiple opportunities. Rusty.

MR. HUDSON: Thank you, Mr. Chairman. A point of clarification. We're talking Action 12 only comments right now?

DR. REICHERT: The first two action items, the ones that Chip just mentioned.

MR. HUDSON: Action 9 and Action 10?

DR. COLLIER: Actions 9, 10, and 12.

MR. HUDSON: Then I should just read my comment, for those that haven't had a chance to read it anyway. We support the SSC's recognition that the overfishing stock status from SEDAR 41 is unreliable and not applicable for management. Despite the uncertainty of discard estimates, the fishing industry fully supports implementation of methods to mitigate red snapper discards, such as Action 12, and that is descending devices and venting tools, for use in the development of Amendment 43.

We support Amendment 43, recreational fishing accountability alternatives, including Action 9, that provides alternatives for permits, renewal conditions, and a tag approach, and Action 10, options for timing of reporting, and the report ranges from voluntary to 100 percent reporting. We suggest, in your consideration of data-poor models, as an alternative to the Beaufort Assessment Model, that you also consider SEDAR 41's ASPIC biomass model for setting revised ABCs for red snapper.

We look forward to an opening of the red snapper fishery, based on upon your revised conditions or ABCs or whatever is going to come out of this. Last week, as a member of the Snapper Grouper AP, we had an extended discussion on descending devices and things like that, as well as permitting of charter boats in the other areas besides South Carolina, as well as something to do with the private, and it seemed like a subset for the private was the best alternative, as opposed to trying to get millions of people permitted. That being said, we look forward to the discussion.

DR. REICHERT: Thank you, Rusty. Would anyone else like to make a comment? Seeing none, let's open the discussion on these action items. Let's do the first one first and then 9 and 10. Any comments or questions or concerns? One of the things that I thought of is obviously the success depends on the compliance and how this is administered and enforced, and, on 10, I think the timing of reporting is probably something that is critical.

DR. COLLIER: So what are you referring to as timing of reporting? Do you want it instantaneous or do you want it within a month?

DR. REICHERT: Well, I am not sure that the best approach is, but obviously, the longer the lag, the more difficult it is, and so, the shorter the better, but I also realize there are practical and logistical complications relative to that, but that is -- I feel that the timing of the reporting is something that should be taken into account, in terms of the usefulness.

DR. GRIMES: On the timing, what about electronic reporting? That's been done in some places, I think.

AP MEMBER: Make an app.

DR. GRIMES: I think that already exists, and, with respect to permitting and so on, states have -- The State of Florida has experience with this stuff, and we should see what their experience has been with all of these issues, really.

DR. REICHERT: Scott, I should have asked if the SEP had discussed this yesterday, and so --

DR. CROSSON: I am trying to find it. I've got too many tabs going. The SEP had a number of comments on this. We were not asked actually whether we thought that the permit was a good idea. We were just asked, if there was a permit, what sorts of things would you want to include in there, and so we had comments about just a minimum level of information should be that people should be providing an email address, because usually these things are applied for electronically, and a zip code, which you would also probably need to put in there if you were going to apply for these electronically, and agree to be contacted for follow-up information as a requirement for the permit, so that we could get more information about when people are fishing and where they're fishing and stuff like that.

If you go to an app, most smartphones, all smartphones, as far as I know, have GPS in there, and you don't necessarily have to -- When you design an app, you don't have to have a real-time data link going on. You can have an app that gathers data, and then, when people get back into a data-rich area, where they can contact the service electronically, the app could send information about what kind of catch is going on.

Also, as Churchill pointed out, there's a lot of different states that are going and doing things like this. I read an article in *North American Journal of Fisheries Management* where Oregon is doing this for salmon right now, and they found that there was much greater precision than what they were able to get from the traditional creel surveys, and so there's a lot of examples about how this has been done. A lot of people have already done the work in the background for this, and so I think this a fantastic idea for an electronic app especially, but, at a minimum, there should be some sort of permit.

DR. BARBIERI: I just wanted to support what Scott just said. I was over in Portland a couple of weeks ago to participate in the RecFIN meeting, and they mentioned results, the initial results, of their work on the electronic reporting, and it seems to be very, very encouraging. Another thing that I would suggest is that I think that those figures and recommendations that are explicit in the amendment now are fine, but it would be nice to keep your ear to the ground as far as pilot studies. MRIP has been working on a number of pilot studies throughout the country that should be producing results fairly soon, and so it would be nice to keep up with that and see what their results are, because then you would have some direct evidence there of the performance of those metrics.

DR. REICHERT: Thank you, Luiz. A couple of other things that I thought of were, under Action 10, for instance, is the question of options for timing, and I think, obviously, because of recall bias, before the fishermen depart the vessel, if that's feasible. Obviously that creates the least amount of issues for recall bias. The longer you wait -- That's the remark that I made earlier. The longer you wait, the more of an issue that is.

One of the things I thought of is have you guys thought -- Maybe it is in the language somewhere, but is there a way or have you guys thought about how to verify the information, especially where it concerns discards, because, as I think someone mentioned, there is no observer data on the recreational fishery, and so are there ways or methods that we can get at the verification issue?

Then maybe I misunderstood that, but, if only a percentage of the anglers are required to report, I am wondering if you can tell us a little bit about how that would work or if you guys have thought about how that would work and how are people selected and how that may affect the statistical power of the results of the data.

DR. COLLIER: We have thought about it, and it could be species-dependent, when it comes down to it. Something like snowy grouper, where we have, I think, a 3,000-fish ABC, if you are only sampling 10 percent, that means you could only observe 300, because you would likely have an expansion factor that would have to go into it. It would be somewhere -- In all likelihood, you would be multiplying by a factor of ten, and so you've got to consider sample size, what you think would be appropriate, or what the council thinks would be appropriate, for the different species.

We haven't got into the weeds on the exact details of what the percent would be. I know the Snapper Grouper AP definitely recommended somewhere around 10 percent, or potentially less, in order to do some of the sampling, and I believe there was some suggestion to even look down as low as 1 percent, but, once again, when you're thinking some of these expansion factors, and using that snowy grouper example, you're talking thirty fish intercepted, or thirty fish reported, and then you would potentially be leading to a closure. I don't think that would be all that acceptable for some something like that, and so some species might be 100 percent reporting, whereas, other species, within the app, you could just require a subset of the people reporting.

DR. REICHERT: The way I was thinking about that is this is all meant to improve the data. If you go down to a 1 percent, you may run into the exact same issues that we currently have, and so I think that would be really good to keep that in the back of your mind, in terms of the quality or improvement of the data. Then both Laura and Rob had a comment.

MS. LEE: I didn't have a comment.

DR. COLLIER: Sorry. That was my fault. Somebody asked me for my password, but it had Rob and Laura's name on it, and so I figured that they had something to say.

DR. REICHERT: Okay. Sorry for the confusion there. One of the questions I had is if you guys had thought about -- Is there a way to verify the data that you get independently?

DR. COLLIER: Yes, validation of any discard data is going to be very difficult in the private recreational fishery. I think we're going to have to think outside of the box, because we're not going to want to have observers on the vessels. Maybe you can have an observer on a separate vessel that could go to different areas, but even that is going to be very logistically difficult. Validation is going to be difficult, but we don't have validation of the current estimate either, and so, when we're increasing coverage, I think that's going to be an improvement, no matter what we do.

DR. REICHERT: Anyone on the committee have any questions or maybe suggestions as to how to approach some of these issues? Seeing none, how about the Action Number 12? Do you have enough guidance from the committee to move forward, Chip?

DR. COLLIER: Do you guys recommend going forward with a permit that is vessel-based or individual-based? There is benefits of both. Vessel-based, usually, when we're thinking about managing these offshore fisheries, we're looking at either removals for an entire trip or -- Yes, we do individual-based sometimes, but we also do vessel-based.

DR. BARBIERI: I suggest that you touch base with Bev about this, because, for the Gulf reef fish survey that we implemented, that has basically created a stratum, like a boost to MRIP, that focuses just on those 5 percent of trips that are focused offshore on that component. To do this, we need to have a list of address books for sending out the surveys, and she worked two scenarios. One was vessel-based, and one was angler-based, and she preferred the vessel-based, but she can give you all the technical issues, the pluses and minuses of both, and I think that would be helpful.

DR. CROSSON: Doesn't Mississippi have something like this right now for red snapper? Isn't there a permit where they're keeping track of this? How are they doing it? Does anyone know?

DR. BARBIERI: They do, but there, because their universe is small, it's a census, basically, that they have. By the way, as of late summer, MRIP, the Gulf States Commission, and the five Gulf States are getting together and organizing a workshop to discuss the results of -- There are five pilots going on in the Gulf now testing different methodologies like this, and it would be great for you to come to that. The MRIP consultants, the guys who are really, really knowledgeable about this stuff, will be there, and it's a great opportunity to get some clear input on those things.

DR. ERRIGO: I have some experience working with the electronic logbook pilot for the charter boats. In speaking with -- It's actually Tom Sminkey who is helping us with the -- We are looking at a validation app for the charter logbooks. Basically, we're taking the MRIP intercept, the access point angler intercept survey, and turning it into a tablet-based application, and we asked if it should -- Because we're doing charter boats, should we do it as a vessel or a trip or boat-based survey or angler-based, like it is now?

We actually wound up doing it so that you can do it either way, but Tom Sminkey said that there's a lot going on now, but, after a lot of these calibrations and things are done, that MRIP is actually going to start discussing moving from an angler-based survey to a vessel-based survey, just because it's a lot easier, and that's often how it runs anyways, and they just write how many anglers there are, and they make notes in the margin, but they're usually intercepting a group coming off of a vessel, and so they are considering going that way. I don't know if they will or not, but that is discussions they are considering having after all the effort survey stuff is over with.

DR. REICHERT: Correct me if I'm wrong, but that's consistent with how the data is used in the assessment, correct? It's at the trip level and not at the individual angler level.

DR. COLLIER: There are some aspects of the individual angler level that would be requested. The SEP indicated that they would definitely like the individual level, because, when you're looking at economic impacts, a guy that came from Florida, or came from Iowa to hang out with his buddy from Florida, that's going to be a different economic impact that you might not observe.

The council has also indicated that they would like to do individual-based, or at least most of the people that have made suggestions as far as what they would like to see, they indicated that individual-based was what they were thinking, because they want to define their universe of users with that permit. That's their main goal with that, but the reporting, that's a little bit different.

DR. REICHERT: Thanks.

DR. SHAROV: I am curious, but I haven't heard anybody mentioning the difference in the compliance rates or willingness to report by an individual angler versus the permitted boat. When you're talking about permitted boat, you essentially are putting the responsibility on the owner of the vessel with the permit. Seeing some pictures with happy anglers when they have thirty or forty fish of different species, et cetera, do you think that there is a reliable expectation that one person is reporting reliably on the total catch and on a species-basis and on a size frequency and whatever?

I think when individuals are required to report that they are more likely to report as individuals. When it's a group reporting, then it's like somebody else will do that, and the response is likely to be much lower. I don't know, but I would imagine that somebody has done these sorts of

comparisons. Maybe there is some working papers, or maybe there are published reports, but it's worth considering.

DR. REICHERT: Thank you, Alexei.

DR. CROSSON: I just wanted to clarify that the SEP did not mention the idea of using the zip codes or something like that for economic impact. It was trying to get at what type of anglers are coming to the coast for fish for red snapper and what's the motivation. It's sort of a reveal preference model, just so that you can actually model and get an idea, depending on the season, depending on the structure, the regulations, when people are likely to go out there and fish, and so it's to aid in management more than it is to measure economic impact.

DR. REICHERT: Thank you.

DR. COLLIER: To Alexei's point, I have done some searches looking at recall bias with fish, and it's very difficult to find any. I think I found one or something like that, and, when you're thinking of a multispecies fishery like this, and you're thinking of something like -- If an individual catches five red snapper on the trip, or the group catches five, they're likely to remember that. However, if they catch fifty tomtate, it's going to be a different memory, and so it is going to be probably more accurate for some species and less accurate for others.

DR. REICHERT: All right. Anyone else before we move to Action 12?

DR. SCHUELLER: I am having the same turning over in my head that Alexei is having, and it just seems to me that individual responsibility would offer more compliance, only because, if there were repercussions for it on the individual, I feel like they're more likely to do it. I know, in Puget Sound, they require crab reporting, size and species, within a certain amount of time.

You see this in wildlife management as well. Granted, it's not a multispecies situation, but it's still -- There is a personal accountability there, and, if they don't do something, then next year they don't get a permit, or they don't get something. It's a hard-core response. In fact, my husband has a tag for something where, if you don't turn in your information, you don't get a tag for three years afterward, and so it's a pretty big consequence.

DR. REICHERT: Thank you.

DR. BUCKEL: I have the same concern, and so is that something that -- I guess, if your number gets drawn and you need to respond, and, if you don't respond, what is the consequence?

DR. COLLIER: Typically, that's not really put in by the council, as far as what they think the response is going to be, but I think there is going to be some recommendations on requirements of reporting and different things like that in order to renew the permit. I think they're going to want to put information like that in there, but that is getting into the details, and that's usually left up to the National Marine Fisheries Service.

DR. REICHERT: Thank you. We will move on to Action 12, unless anyone has any last thoughts. That's the alternatives to reduce release mortality. A couple of the things that I thought of are comparing it to the circle hook, in terms of compliance and enforcement. If there are other hooks

on the boat, it's relatively -- It's easier to verify that they're actually using those circle hooks, because you can look at the rigs. You can look at the gear.

For descending devices, they can have them onboard and then not using them at all, and so I think there is a difference between the approach for circle hooks and descending devices, and so I'm not sure if you guys thought about that. Then I have the same question there. It's important to get a handle on compliance, because that, by and large, determines the reduction in the bycatch mortality, and so, again, if they have them onboard but they're not using them, the bycatch mortality will be quite different from someone who is using that every single time he or she catches fish, and so those were some of my thoughts there.

MS. LANGE: I guess I was curious just how difficult it is to use a descending device. What exactly is it? Getting to the same point that Marcel was making, circle hooks are pretty straightforward. You attach it to the line the same way you do a regular hook, and then you just fish, but, if you have an extra device, how much more work is it? I guess I would think there would be less compliance with those other devices than there would be with a circle hook, and I'm not sure how you would evaluate that.

DR. COLLIER: Jeff might be able to speak to some of this, but a descending device can range from what it is to basically an inverted, barbless hook with a weight on it to a milk crate with a weight on it and a line attached to it to an old lobster trap with a weight with another line on it to some of the more high-tech ones that actually hook on a fish's lip and then release at a certain depth, in order to make sure they're getting down below something like the thermocline. That can have an impact on discard mortality.

Do they need to be used in all situations? That is another question. If you're catching a red snapper in sixty-foot of water, not all of those need to be descended. They could be released at the surface very quickly, and, actually, time out of the water is probably a significant factor for some of these species to reduce discard mortality. That is usually not measured in many of these surveys, or many of these studies, just because it is so hard to get at that. That is a confounding factor whenever you're doing any of this research. If you're tagging the fish, you're actually holding the fish longer, and so that could have an impact.

All of it is very difficult, and figuring out the usage rate of these is going to be really difficult, and it might come down to this is our best guess for the number right now and then we test it based on some of these tagging studies that are currently ongoing.

DR. BARBIERI: Chip, again, just a suggestion, because I was over there recently, but, if you call Steve Williams, with the Pacific States Marine Fisheries Commission, and John Devore, with the Pacific Council staff, because they were talking quite a bit about they use both by those three states, and the same type of regulatory approach, regulatory amendment approach, to apply this to the Pacific states and offshore fishing. They have already collected a lot of information and a lot of the same groundwork, and so, instead of you reinventing the wheel, they should have a lot of good suggestions.

DR. REICHERT: Thanks, Luiz.

DR. BUCKEL: I would agree with Anne that the circle hook compliance is a lot easier thing to do, and one of the pushbacks from using descending devices is the increased difficulty in using them and, for several of the devices, having a dedicated rod and just the time that it takes, and you may have all great intentions on using them, but, if it's really rough, then it's -- I was just talking to Mark, and he said that he was tagging fish, and he was planning on using a descender device to release red snapper, but it was really rough, and he just decided to vent, because of the difficulty in using the descender device when it's rough, and so I think I would not use that circle hook compliance, but probably use something a little bit lower, or that would be my recommendation.

I think that, where it's worked, there has been incentive to get the fishermen onboard. I think, in southern California, they had closed areas, and they said that they would open them if you used descender devices, and they got buy-in that way, and others might know more about that example, the ways to incentivize the industry.

DR. REICHERT: Have you guys discussed to require certain descending -- You just mentioned a list of different, anywhere from very simple to some more high-tech, and have you guys discussed requiring certain devices yet?

DR. COLLIER: We haven't gone down that trail yet to figure out which devices would be acceptable or approved or anything like that and how it would work. We're going to have a discussion at the next council meeting as far as different devices that are being used.

DR. REICHERT: Anyone else?

DR. CROSSON: Just that compliance and instruction on using these devices is the perfect thing that the Citizen Science group should be starting off with.

DR. REICHERT: I think that's a great recommendation. All right. Anyone else?

DR. COLLIER: There was that other aspect of this, changing the method and going from what was used in SEDAR 41 to the new approach, conditioning just on South Atlantic fish. Are there any issues with using that methodology? Is it a better methodology than was used in SEDAR 41?

DR. REICHERT: Maybe you can remind the committee what you're referring to.

DR. COLLIER: In the SEDAR 41, they used a model that was conditioned on -- They looked at the condition of fish in the South Atlantic and then used a model based on -- They used the discard mortality rates developed from a proportional hazard model for a mark-recapture experiment done in the Gulf of Mexico. We have switched from using fish in the Gulf of Mexico to using fish just in the South Atlantic to develop the proportional hazards model, and we are also going to explore different initial survival rates, ranging from 100 percent survival for the best condition fish down to 85 percent, given that some of these fish are caught in fairly shallow water and there is an indication that they have pretty good survival.

DR. SHAROV: When I read this, I was not sure if this was the proposal of the methodology, because there are no results reported. Is that what you are proposing to do and then asking for endorsement of this approach?

DR. COLLIER: Right. There is no values currently developed, and we are working on this, and hopefully, at the next meeting, we would actually have the values for you, but, if there is any concerns or anything that we should be looking at as we develop this model, it would be great to have input prior to coming with a final number for you guys.

DR. BUCKEL: Could you speak a little bit to the reasons why? My concern with just using the South-Atlantic-tagged fish is that the sample size drops, and my experience with those models is that your precision goes down pretty quickly with lower sample size, and so is there a good justification for throwing out the Gulf-of-Mexico-tagged fish, where that may increase your precision and have a better, less-biased estimate and we don't suspect it will be that different, if depth is the main driving factor?

DR. COLLIER: With some of these, when you're looking at when you're trying to apply some of that model from the Gulf of Mexico to the South Atlantic, it could be recapture rates are different in the South Atlantic compared to the Gulf, and so, when you're combining those two, it could have an impact. There is also the potential impact of a different thermocline, and thermocline is pretty important on discard mortality, and so it could have an impact. There is indications that the thermocline is greater in the Gulf of Mexico than along the South Atlantic coast, and so we're looking into those data as well.

Then just overall recovery rates between the two different areas. If the population is much different in the Gulf of Mexico and in the South Atlantic, if there is a difference in population size and therefore recovery rates, you're going to be seeing a different impact of potentially discard mortality, because the model is not going to -- It's assuming that recovery rate is going to be the same between the two different areas, and if you have a larger population size, your recovery rate could actually change, just due to that population size. You have a lower probability of catching that individual again, but you're much more familiar with these models than I am.

DR. REICHERT: I remember some information that the survival may also depend on, for instance, size of fish. If that's the case, then you may have a different size frequency in the Gulf than it is in the Atlantic, but, off the top of my head, I can't remember what paper or report that was.

DR. COLLIER: I have heard that a lot from fishermen, indicating that size of fish is an important factor. However, in a lot of these studies, it's very difficult to convince somebody to release a large fish, and so it typically is the smaller fish, and you do have a limited number of larger fish that are being released. In the South Atlantic, we are having more and more large fish, because, when Florida was doing their study, it started in 2010, and so they were releasing a variety of sizes, and I believe there is some indication of larger fish having lower survival, but I can't remember what the final model was saying.

MR. HARTIG: I think my concern, Marcel, has been with the compliance estimates, and I think Chip is well on his way to providing you with some really good information, and what I am going to say may not even hold any water by the time he's done and gives you the model and comes out with the numbers, but I've thought about this some.

The fishery is kind of being held hostage by the MRIP discard estimates, and so, if you developed a compliance standard on the recreational fishery, based on how MRIP samples, would that be appropriate? That's what I'm saying. You used MRIP to close the fishery, and could you use the

same MRIP sampling, in their limited number of samples, to actually determine compliance of using descender devices in the recreational fishery? That is the question.

DR. REICHERT: Thank you, Ben. Anyone else relative to descending devices?

DR. BUCKEL: Chip, you mentioned that having this control group is really nice, to know this is a group that we feel like is 100 percent survival, and so the tag return from that -- All the other fish in worse condition, the return rates of those can be compared to the return rate of the best condition. You have got surface releases in the best condition, and you mentioned some depths may be 100 percent and others 85 percent, and so I guess that is the plan, but I didn't follow completely. Is the plan to have that survival of best-condition fish change as you go to different depths or how exactly is that going to happen?

DR. COLLIER: The idea was just to start off with a flat rate and apply it to all the fish and then look at the impact of that estimate. As you go from an 85 percent survival to 100 percent survival, you are going to get different discard mortality estimates from that, and that would be used to test the sensitivity of the model to those assumptions.

DR. BUCKEL: I think there has been so many studies with red snapper that there is probably depth-specific survival rates for those best condition fish that may be an improvement over just using the flat rate. That would be one suggestion. Then back to the -- You were mentioning different reasons why you may want to just focus on the tagged fish for the South Atlantic, and I know, with Bev's gag work, she looked at fish size and the area effects, to try to statistically control for those, and so I think that's still a valid approach in trying to statistically control, within the Cox proportional hazards model, those different regional effects, if there is higher effort or a larger population size, and so the return rates are different, but I do agree that maybe you can't standardize for all of those and so it's worth doing the localized estimates and then compare the -- I would still encourage you to do both and then compare those two. If they're not statistically different, then maybe go with a larger sample size that gets you a higher precision that eventually will likely be used in the assessment.

DR. REICHERT: Thanks, Jeff. Any last thoughts? Chip, have you got enough guidance there?

DR. COLLIER: I do. Thank you.

DR. REICHERT: All right. I sensed a little hesitation there.

DR. COLLIER: The reason this paper was developed is it came about because we weren't positive if we would have an ABC for red snapper. We weren't positive if anything was going to be provided to you guys on a new method to develop an ABC for red snapper, and so we came up with an index-based approach to potentially develop an ABC for red snapper, and there is a couple of different options in here.

Obviously the first one, to start off with, is the DLM toolkit, but that is not something that you learn in a week. It takes a little bit more time than that, and so that's just a brief discussion of the DLM toolkit and where it's been used in the past, and John Boreman is much more familiar with it, as far as using the SSC and the DLM toolkit, and so that's definitely an option for this species,

and it could be done, but it would likely need to have a subgroup of the SSC to meet to discuss it and develop an ABC using those methods.

Another option, and this was my simplistic mind working, is trying to develop an ABC using some of the indices that were used in SEDAR 41 and looking at where those indices -- Looking at the trajectory of the indices and what could happen from that in order to go from there and then go into a potential ABC.

Within SEDAR 41, there were several different indices, and I gave reasons why some of the fishery-dependent indices weren't used, or weren't continued forward, and so we focus on just the discard headboat observer-based index and then the SERFS video and chevron trap index. What I have included in this paper is just the chevron trap -- Well, I have included both the video index, or the CVID index, and then the chevron trap.

The reason I included both is it takes a little bit longer to develop the video index. Typically, those values aren't going to be available until August. If we're going to develop some -- If we're going to potentially be using this for that year's estimation of a season, having something developed in August to potentially be presented to the council in September, that leaves very limited time for a fishery to operate, and so there probably needs to be discussion on whether the CVID index could be used in this type of methodology or do we need to go to just the chevron trap.

Going into this index-based approach, there are several different things that could be used to determine if overfishing is occurring, like looking at the trajectory of the index, and are you using the last three to five years, which survey you're using, and then some of the restrictions on potentially the headboat survey. I don't think we need to go into great consideration for this right now. These were just some ideas that were put forward.

We could look at an index and then develop something from that, and what I have here in Figure 1 is an index, standardized index, for the at-sea observer, and this was developed from the model that was presented in SEDAR 41. If you go through the entire time series, you can see that it's very variable over time, and you have some very large standard deviations associated with that.

Then, if you look to the figure to the right, we developed standard deviations, and a one, which is the bigger black box, and two standard deviations, based on those three years of data, is just going to this whisker, almost, and then the red whisker is three standard deviations. If you are using this type of approach, you could use that to indicate that, all right, if it's one standard deviation greater, you might want to have a little bit less of a change in your management response. If it's two standard deviations greater or less than, you might have a greater response.

Those are just the ideas that I was going along with, and so there is different things, but one thing that I do want to point out is that, if you look at one of these indices, and most of our indices have a lot of variability in them, and, looking at the headboat observer index, from 2000 to -- It's the last five years compared to the last three years, and you have a different trajectory for that index. That is going to have an impact on any of the decisions we make and the potential variability associated with that.

There is different indices that are associated here. I do want to indicate this one here. I was using the chevron trap index, but I was using the incorrect one. There was an issue with me reading a

table, and so this is actually the full normalized CPUE index for the chevron trap SERFS red snapper index, and you can see, going through here, this is the 2016 data point and 2015. It's continually increasing from this.

If you remember back to your SEDAR 41, when it was originally presented, there was a little bit of variability between 2014 and 2010 between the chevron trap index and the video index, and so, in all likelihood, there is going to be some difference as well between the video index and this chevron trap index, but this is the one that I had on hand, and I just wanted to present you guys with the accurate information here.

As I continue through this, the next approach is trying to develop an ABC scalar, and you guys have said that MRIP is not good for management, and so I was struggling with using MRIP for management as well, when we're saying we don't trust the numbers and there is too much uncertainty in the numbers for this species, and I struggled.

I do have a list of scalars here and then another scalar that I came up with, as people criticized me using MRIP, because they said, well, you said those numbers aren't good and how are you going to use those again, and the other option that you could potentially do is do it effort-based. Assuming that red snapper is the crème de crème, and has always been, if you open a day, everybody that wanted to go fishing for red snapper was going to go that day.

You could potentially do it based on the number of days that the season was opened for something like the recreational fishery. The commercial fishery, you do have more trust in your estimates, and so you would continue to use something like the landings from the previous time period to scale that ABC. Those were my thoughts around eleven o'clock at night, and you can tell me how bad they were.

DR. REICHERT: Thank you, Chip. I had a question, or maybe a suggestion. If you would like to use the fishery-independent index, the chevron trap, yes, we don't have the video data, but we may have the video data with a one-year delay. Because of the nature of the data, we could relatively easily come up with an update of the chevron index, probably in January or February, but, because of the time it takes to read the videos, we can't use the videos. Would it be helpful to include the video, but with a one-year delay? I am not sure how that would complicate the estimate, and so that was one thought I had.

Then scaled to the ABC, maybe -- I want to remind you that the CVID index was used, I believe 2010 through the terminal year, and there were reasons why the chevron trap wasn't used in the earlier years, and so, if we want to use that as a scalar, we have landings for previous years, so that we probably need to put a little bit of thought into the chevron trap index and how to compare that with the landings in those years, and so that's just a little bit of a caveat, if we want to be consistent with how the fishery-independent index was used in the stock assessment.

Now, we have done some analysis looking at including or excluding a variety of stations, because maybe you will remember that we added the SEFIS survey, and that significantly increased our efforts, in particular in the edges of our survey, North Carolina and Florida, and obviously Florida was the area where the population is a little higher, relative to other areas, and so that may create some issues with the index, and that's why those specific years were used. If we go back, we

looked at excluding and including certain stations, and the overall trends were similar, but that is something that we need to keep in our minds if we want to use those earlier years.

Any comments or questions? I fully realize that we probably won't come up with a fully-developed method now, but at least I think what you're looking for now is, is this generally a method that we want to continue developing. Is that correct, Chip? Okay.

MR. HARTIG: As you go down this road of developing this index, I think it's -- If you're using the SERFS survey exclusively, there are some real concerns about the survey, and some of those have been expressed to you in a paper, I think, that Peter sent out at the last meeting. There are concerns that that sampling, trap sampling, doesn't sample larger and presumably older fish in the same proportion that they occur in the stock. That's a real concern, and so we have had, in the past, a couple of openings of the fishery for the recreational fishery, short openings, and sampled intensively, where we have an age structure that we got out of those samples.

Science moves forward by hypothesis-driven experimentation, and, to me, if you want to answer this question of does the fishery-independent information provide samples in the same proportion of ages that the other hook-and-line sampling does, I would ask the SSC to have an experimental ABC, where we open the fishery for a short period of time and sample intensively, like we did in the mini-seasons that we've had in the past. Then compare and contrast those ages you get from that sampling with the ages you get from the fishery-independent information.

This is going to be short. Probably, in the interim between the two assessments, you could set it up however long you wanted to set it up to try and answer this question, but, to me, the beauty of having the fishery-independent samples to be able to compare and contrast with the fishery-dependent samples -- We have that in almost every fishery we have, and we don't have that now.

Unless we answer this question, the public is always going to be responding by, hey, your traps don't catch the older fish. They don't catch them, and we can't see them moving through the cohorts in the same proportion that the hook-and-line sampling does, and so further investigation could be done, and I have looked at Luiz's information in detail from the fishery-independent information they've done so far.

I think I would like to have Luiz bring his information back at your next SSC meeting and compare and contrast that to the trap survey and see if there are differences in what you see in cohorts move through the fishery. Like I said, I've seen that information, and it's pretty powerful, in some instances, but there is apples and oranges in there, and I can't rectify that with my background in sampling and looking at things and putting them together, but, if Luiz is willing to do that, that would be a start.

If you would get some kind of an answer to your question by looking at that and then possibly going further, because the fishery is hamstrung in these fishery-independent samples. It doesn't occur as the fishery would occur for recreational fishermen fishing in the pattern that they fish or commercial fishermen fishing in the way that they fish. Does that have an impact on the number of big fish, and presumably older fish, that could be caught? I think we have a start, with Luiz's data, to try and answer this question, and I would certainly like to see that at our next SSC meeting.

DR. REICHERT: Thank you, Ben, and, to that point, I am more than happy to ask Luiz to do that. I think one thing we need to keep in the back of our minds, obviously, is the differences in selectivity, and so obviously that is something that needs to be addressed and something that we are all aware of.

In terms of the experimental opening, I think the conundrum there is that we still have the ABC or OFL, and so we need to make sure that, if we do that, that we are not exceeding the OFL, in that respect, but obviously we've had that argument when we were discussing the short opening in the previous years, that it would provide an opportunity to collect the data.

I think you and I talked about that, that we also need to make sure that, when we do that, that we collect the data that can then be used in a variety of analyses, whether it's ages, length, reproductive information, or fecundity information, stuff like that. That we're not doing that, and then, in hindsight, say, well, that's all very nice, but we cannot use it in our analyses or in our stock assessments, and so I think we need a little bit of thought, and I think the committee can help in providing some information, in terms of, if we go that route -- Whether we call it an experimental ABC or we come to the conclusion that we have a short season, I believe, in particular for this fishery, we should maximize the information content that we get from that short opening.

Luiz probably remembers that, in particular in Florida, during the previous opening, there was a lot of effort that the states put in to collect information that was potentially useful, and so there is an effort and financial aspect of collecting the information also that we need to be aware of, because, as I said, I think the states, in particular Florida, put in a significant effort to collect that information. With that, I open the floor to questions or comments.

Mike reminded me of my earlier suggestion that we had three specific items, and we had a public comment on each of the three specific items, and so I am asking if anyone has any public comment relative to this method. I am looking around to see -- I think Rusty addressed some of that in his comment earlier, but I am looking around and making sure that I provide that opportunity, and so thanks for reminding me of that, Mike. Seeing none, then I am going to repeat my question. Does the committee have any feedback for Chip or others in terms of how to best approach this and how can we provide more guidance?

DR. COLLIER: I know, at the last SEDAR, there was indication that the level of sampling that the states were doing was likely unsustainable. It was very difficult and very time consuming, and so, if they do get nominated, it would be nice to talk to them first and make sure they're capable of doing that.

DR. REICHERT: Thank you, Chip, and that was exactly the reason why I brought that up, because that was a large part of the discussions we had earlier.

DR. CROSSON: To that point, if we do agree that a mini-season of some sort of is warranted, I would like some sort of permit requirement put in place before we get to that, and I think it should require reporting as a part of that measure, so that as much of the burden is pushed down to the angler as possible, so that we can get as much information as possible. That's my own take on it, but I think, as has been pointed out, you don't want to shift all this burden onto the states, where they're having to spend a lot of money to go out there and do this. I think this something that the anglers should be required to do as part of the experience.

DR. REICHERT: Anyone else? Does anyone on the committee have any thoughts or additional approaches or part of approaches that could be useful for Chip and others to take a look at?

DR. BARBIERI: It might be good to ask Erik whether the Center is looking -- Yesterday, during the presentation on the research items, use of the DLM tool was one of those things that was being considered. I think that this is such new territory that a variety of approaches will have to be tried, and we're going to basically have to review something that has just a whole bunch of methods applied, and so I think Chip's paper is a good beginning. It sets some good points there in starting this conversation, but I think it needs to be beefed up with actual application of the approaches. Then we can review something that has more detailed information.

DR. REICHERT: Thank you, and I think Erik addressed some of that earlier on. Erik, do you have any additional -- Correct me if I'm wrong, but you guys are working on developing potential methods to approach this, and so thanks for that, Luiz. Anyone else?

DR. SCHUELLER: I will just voice that I agree with Luiz. If this is going to move forward, there needs to be folks working together from the Science Center and the council and the SSC, et cetera, to fully vet whatever methods are going to be put together and then looked at for possible implementation.

DR. REICHERT: Thank you, and I believe, Fred, that was one of the points that you made earlier, in terms of let's make really sure that we vet this and this is reviewed, because obviously this will have implications in terms of what we allow the fisheries to catch, what is our -- If and when we can open the season.

DR. SHAROV: I also would like to know what is the intended length, in terms of number of years, of usage of this method? Is this a methodology proposed to develop the interim ABCs between the current assessment and the assessment update, which I expect definitely will be requested following the MRIP revision of estimates, and so we're looking at like a three-year period, or is it more a long-term -- Is it essentially a methodology to monitor the stock recovery up to the point that we should be able to state that the stock has been rebuilt and maybe still with the assessment model, the age-structured model, not in place, because, if there is no direct fishery, there is no information on catch at age, with all the consequences.

Depending on whether it's sort of the short-term approach or a long-term, the rigor and the need for detailed analysis may differ, but I certainly agree with what was said that it should be thoroughly reviewed or a good model, a good approach, should be put forward by a few experts, but I would suggest that maybe, in principle, I like the idea, but I think we should, in this case, we should utilize as much information as possible, so that, in addition to the fishery-independent, which is very important, the trap/video survey, there is still an observer-based headboat survey. If that continues, that is another index.

I would not discount the MRIP discard estimates as well. Yes, they are uncertain, but if you have, for example, a clear upward trend, where your every estimate in the course of the years is higher than the previous estimate, then the probability of this trend being not -- The probability of this trend being representative of what happens with the population is pretty good, right?

In terms of just simply defining trends in the population, you need to bring us as much in addition to the survey, video-survey-based index, plus the age structure that has been mentioned already. I don't know what is the best source, again, and probably that group should decide. Should it be based on the data collected through the short fishing season that's open, but that would have to be truly representative, or should it be based maybe on just specifically charter-survey-based or design-based simple collection for the age structure, where you would effectively charter specific trips to get to representative sites to collect the size and age structure information, but that, again, should be a part of the overall approach.

DR. REICHERT: Thank you, Alexei, and it's my understanding that this is a method that is meant to be short term and, obviously, when new data streams become available, and especially that will happen when the stock is at a size where we can reopen the fishery, and that means that we will have other data streams that may help the stock assessment.

I also agree that, once a new stock assessment can be done, and, again, that will depend on data streams and on MRIP, and, otherwise, we are basically in the same conundrum we are currently, then this will all, at least for red snapper, this will all be revisited. I have been thinking that this is more a method that could potentially be used in cases where we don't have any information other than maybe one index, and so maybe for other species, where we are or may be, in the future, getting into the same situation, in terms of the available data streams. Luiz.

DR. BARBIERI: I think Chip was ahead of me.

DR. COLLIER: Mine is a little bit off this topic, and so --

DR. REICHERT: Then Luiz and I will come back to you, Chip, in a little bit.

DR. BARBIERI: As a follow-up to some stuff that Amy said about SSC involvement, I got an email, last week or the week before, whenever that was, and I shared it with you and George and staff as well, from Rob Ahrens, and he has been talking with Tom Carruthers and thinking about developing some workshops to explore some of these techniques.

The Miami Lab folks, there is a few folks that applied the DLM toolbox in SEDAR 46 in the Caribbean and SEDAR 49 in the Gulf, and, for both of those, the initial impression was a lot of these methodologies are good and there is valid methods and procedures here, but they may not be fully ready for application to our stocks and our situation, given the way that they are based on other fisheries in other areas.

Tom came, and Clay Porch brought him down to Miami, and he spent some time there working with those folks, and, by time the SEDAR 49 recommendations came to the SSC, they had already addressed a number of the review panel's comments and adjusted a lot of the results and methodology to address those review comments and came and presented something that the committee felt acceptable, and, actually, it was used in the Gulf to provide an ABC for lane snapper.

I am just bringing this up because I can see that Rob already has an interest in staying involved, and there might be other folks that might be interested in staying connected. I know John has had some experience with this as well in the Mid-Atlantic, but it would be great to work with the Center

and work with the council staff as well and integrate all those different pieces, but Rob may be a good connection point there for us.

DR. REICHERT: Thank you, Luiz, and, actually, you forwarded that email, and I was thinking about the same thing, and so I think that's very good, and that actually brings me to two points. I think, listening to what I am hearing, I think it would be good, as a committee, to start thinking about who would be -- Who of you would be interested and good to have as SSC representatives to participate in this process. I am not sure how this is going to develop, but just think about that, because we may be asking for some volunteers, in terms of participating in this process and then reporting back to the SSC.

The other thing, which is kind of unrelated, that I thought of, in thinking about what Ben just said, is, currently, the CVID index, the chevron trap video index, we don't have an ability to measure the length of the fish. I think, from what you were telling us, that it's probably something that should be -- That would be very useful, and I know the Science Center has been working on developing methods to do that, because some of the available techniques are rather bulky, and that may affect the catchability of the current trap, and so we are very careful, when we are trying to make adjustments to the traps, not to affect the traps too much, because that may have some issues.

I think it would be good for the SSC to potentially put in, as a research recommendation, that that -- In particular for red snapper, that it should have a research priority to continue to develop methods to come up with length estimates for the video index, because you may remember that currently we are borrowing the length and age comps from the chevron traps for the video index, and so I think that may be helpful information, and I think a recommendation from the SSC may help the Science Center, and so that's a recommendation that I want to put forth. Any thoughts? Good idea? Okay. Thank you.

DR. COLLIER: I struggle with whether or not to bring this up or not, but there has been a lot of discussion on the uncertainty of the MRIP numbers, and the PSE is typically one way that that is considered. PSEs for red snapper discards are actually pretty good. It's usually less than 30, and so I understand the other part of the MRIP conundrum is the changeover from the telephone survey back to the paper-based survey, and should there be any discussion at the SSC level about what is the acceptable PSEs or the usability of these different MRIP estimates?

DR. BARBIERI: Well, Chip, not really. Not at this point, off the cuff. I think that those are very good points to be included in whatever guiding document. If there is a working group that is put together, they could take these issues into account, but I don't have anything to offer.

DR. REICHERT: To that point, I think, at the last council meeting, there was actually a suggestion that perhaps this would be a good topic for a joint SSC meeting, because obviously other SSCs are struggling with the same issues, and so there was a suggestion to potentially have a joint SSC meeting with the Gulf of Mexico SSC, and I think that's something we will discuss under one of our next agenda items, but I agree with Luiz that, at this point -- We had some of that discussion the last SSC meeting, when we were discussing red snapper.

DR. BOREMAN: I have been involved with MRIP for the past year in writing a strategic plan, and this is a response to a request from GAO. Even though we had an implementation plan, it wasn't what they defined as a strategic plan. Part of that strategic plan is going to be addressing

this particular issue, and so it is on their radar screen. It's a very high priority item, and it's going to be tackled in the short term, in the next couple of years, and so this is a -- As you said, it's a problem that the whole country is working on.

DR. REICHERT: You said they're working on it for the next couple of years. Do you know anything about the timing, in terms of when there would be some information available that could be useful for us to discuss?

DR. BOREMAN: Without looking at the -- In the plan, there is a timeline for all the projects, and there is scores of projects, and they're just ranked with priorities. Off the top of my head, I can't give you that, but it will be in the plan exactly when that project is being undertaken and how long it's going to take.

DR. REICHERT: Maybe you can update us the next meeting, to see where that is, and whether there is any useful information that we could use in our discussions, and so thanks for that, John.

DR. WILLIAMS: Sorry to interrupt again, but, to that point, I would direct you to the third paragraph in the letter from Bonnie to the council. We are proceeding with a workshop.

DR. REICHERT: That is part of Attachment 21. Again, this is for people that are following on the webinar. Thanks, Erik, but go ahead.

DR. WILLIAMS: So we're basically proceeding with a workshop that is going to address basically everything you guys were just talking about, essentially things like at what point is the uncertainty too high for these estimates to be used from MRIP and so on and so forth, but you can read the paragraph there, and we are standing up -- We have a steering committee that we're putting together to get this workshop put together. It's going to include the Gulf, the South Atlantic, and potentially the Mid-Atlantic as well, and so it will be an overarching, very useful workshop, I hope.

DR. REICHERT: Yes, and it was my understanding that you are looking for input from the SSCs or participation from SSC members, and that's why I was mentioning earlier to start thinking about that, because we will be asking for participation in that effort.

DR. WILLIAMS: Yes.

DR. BOREMAN: I am looking at the draft plan now, the strategic plan, and there is a tactic called establish minimum quality standard for survey statistics to be provided to the public, which is what we're talking about here, and that starts the second half of this year and is going to go on until the second half of 2019, and so it's a two-year project.

DR. REICHERT: Thanks for that clarification, John. Chip, do you have enough guidance? Erik, do you have enough guidance right now? I think we all realize that this is not something that is going to be resolved in the next couple of weeks, and so we will definitely come back to this point. As we said earlier, we need to make sure that there is a thorough review and discussions at the SSC, and I expect not just at this SSC in this manner. Any last comments or questions or concerns? Chip, you're good? Thank you. With that, it is 11:30. I am going to propose to have a little bit of an early lunch and come back a little early and then complete the remaining agenda items.

DR. ERRIGO: We may be able to tackle the fishery performance reports right now.

DR. REICHERT: Yes, that's a good point. Mike suggests perhaps to spend a little time on the fishery performance reports. That was an agenda item that we skipped yesterday, and I think we can do that relatively quickly and then have a bit of an early lunch. Then we can come back after lunch and finish the remaining agenda items.

DR. BOREMAN: Are you still going to have a hard stop at three o'clock?

DR. REICHERT: I am planning on having a hard stop at three o'clock, because I assume that people have made their travel plans based on finishing up at three o'clock, and I think we can do that. Looking at the remaining agenda items, I think we can do that, especially if we don't have an extended lunch. If we can have lunch in about an hour, then we can come back and finish our remaining agenda items. Kari is going to give us a brief overview of the fishery performance reports, and I think those were discussed last week at the AP meetings also, correct?

DR. MACLAUCHLIN: Yes.

DR. REICHERT: Okay. Thank you.

11. FISHERY PERFORMANCE REPORTS

DR. MACLAUCHLIN: Hello. These, we provided the fishery information documents that we had sent to the APs, and they are Attachments 16 through 18, and then Mike sent you updated Attachments 16 through 18 that have the draft fishery performance reports attached at the end there, and this was the first time that we had tried these, and we did red grouper with our Snapper Grouper AP, cobia with our Mackerel Cobia AP and Cobia Sub-Panel, and they met jointly, and then dolphin with the Dolphin Wahoo AP.

We are still learning this. We based them on the Mid-Atlantic's fishery performance reports. They have been doing them for five or six years now, or maybe longer, and, basically, we provide some basic information about landings, and I just put together these slides so it would be a little easier to talk about. Provide some basic information about landings over time, and then they go, and, with their advisory panels, and I think they do every species every year, and now it's just an update.

They ask them about the stability of the fishery, the quality of the fishery, factors influencing recent changes and any major changes that they have observed, and then they get some input on the regulations and possible research, and so that's what we did for our Snapper Grouper, Mackerel Cobia, and Dolphin Wahoo APs, and then these go to the SSC. They can go to the council, but it's just to create a line of communication between the SSC and the AP and then also just to give you guys some information about what they're observing on the water.

You have the draft, and those were based on our notes. We had two people taking notes, but we still probably missed some things. We will go back through the minutes and then have our AP Chairs go over those, and so here are some of the discussion questions that we included. They are similar for all three species that we did last week, but just to kind of stimulate discussion with the APs for catch levels over the last five years, how is the price and demand for red grouper, is there

demand for charter/headboat trips that target red grouper? When and where are the fish available? Has this changed? Tell us about the size of the fish that you're seeing and then effort shifts to and from red grouper. Then we got into a little bit about the management measures, the minimum size limit, and if the council should consider any new management measures.

Then a little bit of information about environmental or ecological, and so about the abundance and availability that they see tied to an environmental factor. We asked them about the low recruitment and any kind of factors that would identify that. We did ask, about red grouper specifically, about any stock structure observations and then timing and the length of the red grouper spawning and what do they see now in terms of recruitment. Where are the young fish? Then any other suggestions for research priorities or important information for the council to know.

Overall, the red grouper, the Snapper Grouper AP said the size and availability has been generally consistent. It is rare to catch them recreationally in the past two years, but it's a regional fishery, primarily off of North Carolina, and they have been less available since 2008. For commercial trips, they said it's primarily a bycatch species. No one is targeting red grouper, but they do catch them with scamp and triggerfish. The smaller fish are caught in shallow waters and estuaries. They are not a desirable restaurant fish, and so it's not something that commercially they are targeting.

One thing that came up was that there was an increased popularity for red grouper for the spear fishers in Florida and that there has been a marked increase in people targeting red grouper, because of the restrictions on hogfish. That used to be the number-one species, and now they're moving towards red grouper, because they're available and they're easier to spear. Then they recommended more research on juveniles and the impact of lionfish, and so there is more details in the draft reports. They're only about three or four pages long, but we feel like they have good information.

For cobia, we had folks all the way from Virginia to Florida, and so we broke it up into kind of two separate discussions, one on Atlantic cobia, which is Georgia through New York, and then one on just Florida east coast cobia. They are available primarily in the summer for Virginia and North Carolina, and they did note that the cobia are being caught further north in the Chesapeake Bay than they have ever seen before, and not that they're not available all over the bay, but just that they are finding them up around Maryland more and more, and there is an increase in sight-cast fishing and the number of recreational boats in the Chesapeake in North Carolina.

This is where either there is a boat with a tower or a skiff with a stepladder, and they stand -- They explained to us. They look for the fish. When they see them, they try to bait and catch them, and this is fun and pretty easy, and so people are really excited about it. It's easy for people to get a boat and participate. There is plenty of fish, but the size of the big cobia is smaller than it used to be. They say there are females with eggs all summer long in the Chesapeake, and there is some increase in directed commercial trips and an increase in the charter demand specifically for cobia.

The availability in Port Royal Sound, they maybe will be available for a year or two after the Waddell stock is released, and then they go away, but they are hard to find in Port Royal Sound, which you guys have probably known about it, but they said they've been showing up a little south of Hilton Head Island a little more.

Then, for Florida, they said, in northeast Florida, they come in for six weeks and they get hit hard. They are swimming with the rays, and so a lot of people focus on them, and the peak is around now, and then they're not available near-shore. They're only offshore, but they're available year-round.

The Florida folks said that abundance and size seems to be about the same. They haven't noticed any changes. There was a lot about the cobia have learned to move with the bull sharks in south Florida, and so they will -- Boats will chum the sharks and the cobia will be following the bull sharks. Then they will catch the cobia. However, the bull sharks have also learned this, and they will eat the cobia as soon as they hook them, and this is also a problem.

They have always been smaller in Florida than they have been in Virginia and North Carolina, and, down in the Keys, they say the cobia size is fine and the abundance is fine. There seems to be more cobia on the bay side than on the Atlantic side, but, in general, it's just something they catch when they find them. They don't particularly know where to go to find them. I think it was good to have all those folks together from such different places, because they definitely asked each other a lot of questions and learned a lot about cobia in the different areas.

Then, in dolphin, the availability varies each year. It depends on environmental factors, and 2015 was great. 2016 was less successful, especially Florida, and the South Carolina folks said the larger dolphin seem to be migrating offshore, and so there's not as much availability for these smaller recreational vessels, but the commercial vessels and any vessels that can get offshore seem to have an advantage to get out there and get those fish off of South Carolina.

There is some increased recreational effort in Florida, just because, overall, there is increased population and vessel ownership for recreational. Charter demand is consistent overall. In the Outer Banks, the charter demand specifically for dolphin inversely aligns with tuna abundance, and so it's an important secondary target species, but people wanting to go on charters, they specifically want to go for tuna, but then they will go for dolphin also.

Commercial demand is increasing, especially for local demand in restaurants, and that was one report from the Florida Keys. Then imports play a large role in the price. With the imports down in recent years, the prices for the domestic dolphin have risen. The longline landings suppressed that ex-vessel price until the market clears. There is no major effort shifts observed towards or away from dolphin, and then they had some discussion about satellite tagging research, and they support that.

Overall, we talked to the SEP about these, but we hope that this information will be helpful. Once we kind of get into a rhythm with these, we'll be able to provide them to you and have a little more time to look over them and maybe have some additional questions to send back to the AP. We want to have some communication between the SSC and the APs. Then what species would you be interested in having the APs provide a fishery performance report on?

For dolphin wahoo and the CMP, once we get the base ones in place, then we can just probably update all of those every year, but, for snapper grouper, obviously you want to focus on a few specific species, and so we were thinking, for the fall Snapper Grouper AP, black sea bass and any other one that you guys -- Vermilion maybe, but I just wanted to show these to you guys and get some feedback if you wanted to, and that's it.

DR. REICHERT: Thank you, Kari. I think this is really very valuable information for us, especially when we are looking at connecting this to the landings and getting the update for the fishery-independent index and combining these. That may help us in looking at what it means, what the landings mean, and I think we've talked about that before, in terms of patterns and a reflection of what's happening in the population or patterns that we're seeing. Do they have to do with market processes or what is happening in the fishery, and so I think this is really important information, and so I think it would be very helpful to get these updated and provide them to us and others, but I think, for the committee, this can potentially be very valuable.

DR. SEDBERRY: I just wanted to add to what Marcel just said. We find, from time to time, that it's really helpful to even have AP members come and talk to us about what's going on in the fishery, and that's sometimes hard to do, and so having these reports on those fisheries as we need them, I think that would be very useful for our deliberations.

DR. CROSSON: The SEP was asked to look at this, and we thought they were wonderful, and the only comments I think that we had, or potential questions, was -- The first is was there any reason that the members of the AP took more or fewer trips for the species in the previous year, although it does sound like you're asking a version of that, because you had something about, for example, for the red grouper, the dive fishermen are taking more trips for red grouper because of the hogfish closure or the hogfish restrictions, and so it sounds like you're actually asking a version of this, but both of these questions apply both to the commercial and the recreational sector. The other one, I think that Chris Dumas suggested, which is a very good question that you might add, is did anything change the cost of fishing trips for the species in the previous year.

DR. BOREMAN: This exercise was based on our experiences in the Mid-Atlantic. We're still doing the fishery performance reports. The reports are not targeted just for the SSC. They also go to the council, and it's a lot of important information there, feedback and so on. In terms of species, we ask the advisory panels to do a species performance report a couple of weeks prior to our deliberations on ABCs, and so we have the assessment, the assessment update, data update, and then, coupled with those, are the performance reports, which helps us to interpret basically the effort side of the equation, the catch.

A lot of times, it's why hasn't the catch been up to quota? Mostly, as Fred said yesterday, it's market conditions or weather conditions or cost of fuel, et cetera, a lot more than just -- A lot of times too, they can't find the fish, like for mackerel. It's tough to find them sometimes, and so it's very enlightening.

What I have experienced is, and, in reading your performance reports, I think you are sensitive to this, and that is what goes into the report depends on who is in the room at the time, and, as you know, in every advisory panel, there are a few outspoken individuals who have opinions, and they're not necessarily trained in the scientific method, and so the opinions sometimes carry much more weight than they should, in terms of representing what the panel said, and, as I said, the way you crafted your language is very good.

When you get a sense that this is what the group is saying, you say that, but then you say that one fisherman said this or another individual said that, and that's great, and that is something that we're still learning in the Northeast. It's who comes to the meeting and who has the loudest voice, and

we've got to temper that with is this something that the entire group is agreeing with or is it just one individual's opinion, and so, with that, I encourage you to do this. You have a lot more species here, and I don't know how many advisory panels you have here, but take advantage of them. That's what they're there for.

DR. REICHERT: Thanks, John, and that made me think of, as a committee, when we look at the landings, when we look at some of the other information that we have available, at some point, we may want to ask for the fishery performance reports of species that we haven't seen just yet, but we may have some concern on, based on the information that is presented, and so, as a committee, let's keep that in the back of our minds when we look at landings and some other information, that we can actually request that information that may be helpful for us in determining whether or not we should, for instance, take another look at the ABC recommendations for that particular species.

MR. HARTIG: I had a question for John. John, have you ever considered going outside of your AP, your AP advisors, and getting information from other fishermen?

DR. BOREMAN: I am probably not the person to ask that. It's a council question. We do have advisory panels. If the advisory panel participants -- If I was on an advisory panel and I found the council was making an end-run and going to other people, then I would say, well, what's my role, and hopefully you want to get an advisory panel that's representative of what's out there.

There is also going out with questionnaires, and that's a little touchy, in terms of the Federal Paperwork Reduction Act and all of that stuff, and so it hasn't been discussed. We think our advisory panels that are constituted every year are well represented, in terms of a cross-section of the fisheries.

MR. HARTIG: I appreciate that insight. Thank you.

DR. REICHERT: Thank you.

DR. YANDLE: I just wanted to be another voice supporting this. I think this is an excellent way of systemizing a lot of the sort of human side of equation with these, and, in addition to what everybody else has said, the couple of things that I think that's going to be great about these, beyond the basic documenting of knowledge and, as other people pointed out, the reasons for when we see catches lower than what was anticipated, is they also provide nice opportunities for documenting conditions that are current now that will eventually become historic, and, by doing that, we can provide a way of guarding ourselves against things like shifting baselines.

I really am excited about how, down the line, this can provide some interesting longitudinal information for us as well as the explanations of, well, this is why this particular anomaly we do or don't see happen, and so I think it's got that added value as well.

DR. REICHERT: Thank you.

MS. LANGE: I agree with both Tracy and John that it's good to have these reports to give a little background. To Ben's question, it's been a long time, but I know, when I was in the Northeast, port agents would provide these reports on a regular basis to the various fisheries, and, as an assessment scientist way back then, I received them several times a year for a variety of species,

where the port agents would go out and they, based on the interactions with the industry representatives, would report back to the Center, and so I don't know if they still do that or not. No? Okay.

DR. REICHERT: Thank you, Anne. I think I am hearing a ringing endorsement of these reports, and so do you have enough guidance from us? Excellent. Thank you. It's a little before twelve. I would suggest that we come back here at one o'clock and complete our agenda. As I told John, we will finish up at three o'clock, and so thank you, and enjoy lunch, and we will recess.

(Whereupon, a recess was taken.)

12. MRIP DISCUSSION

DR. REICHERT: Welcome back. Our next agenda item is Item 10, uncertainty and outliers in the MRIP estimates, and that was Attachment 24. I have a suggestion that, given the earlier discussions we had, the working group, and a possible workshop, that perhaps we should postpone the discussion on this topic until we have more information or clarity on the path forward. I want to ask if anyone has any objections to that. Seeing none, then I suggest we move on.

DR. BOREMAN: Not an objection, but just a comment that there has been talk with Gregg about having a joint SSC meeting with the Gulf to discuss what PSE values basically make sense and how to interpret uncertainty in MRIP, and I told Gregg that the Mid-Atlantic Council has asked me to also participate to represent their council's interest, just in case blueline comes up or something.

DR. REICHERT: I think it will probably come up, but I think that's a good point, because I think, as you mentioned earlier, we're all struggling with this issue, and so that's a point well taken, and so thank you for that. Rusty, we do have an opportunity for public comment, although we are not discussing this any further.

MR. HUDSON: Thank you for the opportunity to comment on the uncertainty and the outliers in MRIP estimates. Our fishing industry members who have participated in the SEDAR process have been frustrated with the Center's use of clearly unreliable MRIP landings and discard data for important fisheries stocks, many of which are based upon just a few overinflated data points.

These MRIP estimates and resulting unacceptable PSEs confound their use in future stock assessments, including red snapper, and we support your proposal for a joint South Atlantic and Gulf SSC meeting to resolve on alternative methods for recreational ACL tracking, and we encourage you to consult with our fishing industry members in this process. Thank you.

DR. REICHERT: Thank you, Rusty. Our next agenda item is Agenda Item 11, research and monitoring plan review. The attachments are Attachment 25 and 26, and Mike, I believe, is going to give us an introduction.

DR. ERRIGO: I just wanted to make sure that, right before we left the MRIP bullet point, that the committee is in support of the proposed joint meeting, because I wanted to put that as a consensus statement, and I see nodding around the table, and so good. Then we can move on.

DR. REICHERT: Also highlighting the point that John brought up, that it would be good to include the -- Okay. Thank you.

13. RESEARCH PLAN REVIEW

DR. ERRIGO: Okay. I will briefly go over the draft 2017 research and monitoring plan, which is Attachment 25. We tried to rework this document quite a bit to be more efficient and useful, and we went through -- Staff went through and tried to update as much of it as we could, and so it's broken down into a bunch of different sections. There is short-term research needs for stock assessments to be completed in the next five years, 2018 to 2020, and there are a bunch of things listed there. The stars are potential projects for citizen science work, and so everything that has a star next to it.

Then there are quite a few under the short-term stock assessment needs, and then there is short-term needs for the spawning SMZs and short-term needs for MPA monitoring, and there are bullet points under each one, and so these are all research needs under each of these different topics.

There is also a long-term needs category with all of these research needs that are long-term needs, but they don't necessarily have to be completed within the next five years, but at least started or development to begin. I am not sure if the version you have has this. It was added very late, but it's habitat research and monitoring needs. It does? Okay. I did send that out. Good. It has the habitat research and monitoring needs, and I added that one very recently.

Then there is a category specific for monitoring priorities, such as like funding for MARMAP and SEAMAP and mixing rates for king mackerel, and so to monitor these types of things, developing monitoring programs for specific stocks. Then there is a section for citizen science priorities, and most of the starred projects have been put down into here.

DR. CROSSON: Just a clarification. Can you scroll back up again? What did you mean by monitoring cobia and dolphin and golden crab? That one. Develop monitoring programs for cobia, dolphin, and golden crab, and what does that mean?

DR. ERRIGO: We don't have any independent surveys for those species, and so I believe that's what that was meant to get at.

DR. REICHERT: To that point, I think it would be good to indicate if you're specifically talking about fishery-independent monitoring programs, to add that language in there, because that helps, if that's the intention.

DR. SERCHUK: I have a comment, Chair. The comment refers to the prioritization of these lists. Typically, these are often -- I don't mean to be unkind, but a grab-bag of different needs, and I am not really quite sure how these get translated into real-time projects or real-time research. Some of them obviously have the date lines on them, in terms of assessments, so that they are obviously are time dependent. Others are just listed, but they are not listed in any prioritization, so you can see these are the priorities.

I am wondering, from a funding point of view, or from an execution point of view, whether it might be better to reexamine these sorts of things and indicate, either 1 to 10, in priority order, or otherwise indicate which things really are most important to get funded or to get conducted. Otherwise, it just seems that many of these things will just linger until the next time we do the prioritization program.

DR. ERRIGO: You're talking about within each of the categories to try to further prioritize, within each category, which ones we would really need?

DR. SERCHUK: Yes, thank you.

DR. REICHERT: Yes, and then a question I would have is who prioritizes, because I can imagine that maybe the council has a different list of priorities than the Center or then the SSC. Some of these come out of SSC research recommendations and some of them come out of stock assessments and other processes.

DR. ERRIGO: I believe this is a council document, and so, ultimately, the council would -- We could suggest a ranking, and then the council could approve or modify.

DR. REICHERT: Any others?

DR. GRIMES: It seems like, under Roman Numeral VIII here, there's already a couple of bullets about having meetings actually to discuss the priorities on these things with the Center, and I think we put that on there a long time ago. We used to have such a thing, actually.

DR. REICHERT: Anyone else?

DR. BARBIERI: For Roman Numeral IV, long-term needs to be developed within the next five years, it may be just wasted ink and paper or electrons, but I think that the first bullet there should be development and implementation of an enhancement to the MRIP survey focused on the offshore component, the reef fish component.

All of these thing are going to cost money to be implemented, but a lot of the discussions that we had this week, and, of course, all of the discussions going on regarding red snapper, a lot of the discussions yesterday regarding red grouper, and assessments here would benefit tremendously by having better estimates, and MRIP has been working with the Gulf States for the last three or four years and testing some of these new survey methodologies that actually allow estimation integrated on top, and as a boost to MRIP.

I really think that it would be very beneficial to have the council articulate this need very, very clearly to the agency that this is something that we need to have in place, and I know that the council staff here have been working on implementing a lot of the stuff that Chip discussed earlier, some enhancements to recreational reporting, testing logbooks and descending devices and all of this, and so those things are good, but I think that having a broad recreational fisheries survey that is in better shape would be very, very beneficial all around.

DR. REICHERT: Thank you, Luiz, and I agree, and so I would actually add to the language that Mike put on there that the SSC feels that that should have a very high priority. Any other

comments or additions? Seeing none, then we will pause so Mike can catch up, and it's also a good opportunity for us to kind of look and see what's up at the screen. If we need to make any adjustments, we can do that right now. Thank you.

DR. DUVAL: Your council liaison, Ben Hartig, has had to leave to head back to Florida, and so I'm going to fill in a little bit here, but I was wondering if the committee, given some of the conversation that you all had yesterday, would consider either -- Discuss potentially adding to the research priorities list an evaluation of the existing projections that we've had thus far.

I recall that Dr. Williams brought this up, that this is, I think, a priority that the Science Center is interested in, in terms of the -- I guess, for lack of a better word, the success of the projections. In other words, how have the projections met expectations, both in terms of the science component as well as in terms of the management component, and I didn't know if you all wanted to perhaps discuss this, and so that's my public comment. Thank you.

DR. REICHERT: Thank you, Michelle, and, actually, I made a note to that when Erik mentioned that earlier, and so I think that's an excellent point, to add that to our recommendations, and, again, I think I would argue that that would probably have a high priority, because of the discussions we had today and yesterday. Any other comments or questions or concerns relative to that recommendation? Thanks for reminding me of that point, or us.

DR. SERCHUK: We talked about items to go into a research track. This seems to deserve a workshop or some sort of focused activity that we should either go through SEDAR or could organize ourselves, because it has been brought up time and time again, and I am just wondering if we -- It's certainly worth putting on there, but can we provide the leadership for it in seeing that it happens?

DR. REICHERT: You mean in terms of recommendations or in a much more practical sense?

DR. SERCHUK: What I am suggesting is we often talk about what stocks we want to see assessed, and we have an interaction with the council on it. I think, to the extent that this affects all of the assessments in one way or another, it would be worthwhile to say this has a high priority and we would like to see this happen. I don't know the mechanism for making it happen, whether we have to get the council's approval to do it, but certainly I think this should be done sometime in the near future, maybe within the next year, and that's why I am sort of bringing it up as putting some emphasis on it. Thank you.

DR. REICHERT: Thank you, and another one that I just -- Well, we can talk about that in one of the upcoming agenda items and potentially add that, if we feel so inclined. Any other suggestions? All right. Seeing none, Mike, does that give you enough guidance for now? Okay.

Our next agenda is Agenda Item Number 13, the update on the Southeast Reef Fish Survey update. This is the presentation that the committee receives, in the last couple of years, every spring meeting, and Dr. Joey Ballenger is here to give us a brief overview of the combined efforts, and this is Attachment 28, the SERFS report presentation, and there is no specific actions required, but this is the same as the update on the landings, just for our information, to see where the fishery-independent survey results are going, and so, Joey.

14. SERFS TRENDS UPDATE

DR. BALLENGER: Thanks for having me here today. Just to let you guys know, I've also got Dr. Wally Bubley behind me over here. He also works for the South Carolina Department of Natural Resources. He's the one that's been primarily involved with updating these indices the last couple of years, and I've got Dr. Tracey Smart back here as well, who has also assisted me with that, and so I just wanted to point out those folks as well.

As Marcel said, this is the annual update of the Southeast Reef Fish Survey, giving an update on our activities in 2016 and some updates on our trends in relative abundance of some key species. I am going to move through this pretty quick, but, as you remember, the Southeast Reef Fish Survey is composed of three different funding sources: the MARMAP Program, the SEAMAP South Atlantic Regional Reef Fish Complement, and the Southeast Fishery Independent Survey. These things have been working in partnership since 2009 and 2010. Prior to that, it was just the MARMAP survey that was involved with fishery-independent monitoring of reef fish species in this region.

Just as a quick reminder, we have three primary fishing gears that we're using in this survey, that being the chevron trap, with, more recently, video cameras attached to the chevron trap, the long bottom longline survey, and a short bottom longline survey.

The chevron trap has seen consistent and standardized use since 1990, and it's generally deployed in depths up to about 110 meters deep. We have a standardized soak time for this trap of ninety minutes, and it's baited with clupeids. As I said, since SEFIS came online in 2010, we have been generally putting one to three video cameras on each trap, one looking out over the funnel and one looking out the opposite side.

Our short bottom longline survey is generally 110 foot, and the short bottom longline survey is generally used to targets high-relief habitats, with the target species being snowy grouper, jacks, tilefish, and speckled hind. As with the chevron trap, we also have a soak time of ninety minutes with this gear, and it's baited with whole squid.

Then, finally, our long bottom longline survey, which is deployed from the R/V Lady Lisa, is primarily used to target golden tilefish. It's deployed in depths of approximately 170 to 270 meters deep on mud-bottom habitat that is generally found sixty to eighty nautical miles offshore, where we're sampling. Once again, it's a soak time of ninety minutes, and, once again, it's baited with whole squid.

Currently, as part of the SERFS survey, we have approximately 4,000 chevron trap sampling stations that are in known hard-bottom habitats, and we randomly select between 1,500 and 2,000 of those stations annually for sampling, and those are the blue X's that you're seeing in the map there on the right. For the short bottom longline survey, we have approximately 300 sampling stations, and these are being depicted by the gold or yellow X's on the map on the right, and, annually, we're selecting between 100 and 150 of those to be sampled annually. In contrast, our long bottom longline survey is set up as a block design, where we have fifteen blocks in known tilefish habitat, where we target a minimum of two long bottom longline sets per block each year, and more if possible.

As far as who is working with the data, the MARMAP and SEAMAP South Atlantic research programs and the South Carolina Department of Natural Resources are deploying chevron traps and both of the longline gears for the development of indices, and they are also responsible for all life history processing and analyses of life history data. Our partners at SEFIS, which is up at the Southeast Fisheries Science Center in Beaufort, are also deploying chevron traps on their research cruises, and they are responsible for video processing and analysis related to the video data. Importantly, we do try to maintain one combined database housing all of our data.

Just to show you what we did in 2016, we deployed a total of 1,537 chevron traps on known live-bottom habitat and seventy-eight short bottom longlines and thirty-one long bottom longlines. Those are being shown by the blue dots, the yellow dots, and the red dots, respectively, in the graph to the right. Also associated with our survey gear, we also deploy CTDs with each set, or the set of gear is deployed at the same time, and then also we collect samples from rod-and-reel or other miscellaneous gear, and so we have 431 collections via other gears in 2016.

Just going into the reef fish survey results from 2016, this sort of shows some of the updates in the indices now. In 2016, we captured almost 49,000 fish, representing eighty-nine different species. However, the top sixteen species shown here represented approximately 98 percent of our total catch, and what I have done is I have highlighted some of those that are generally considered of higher economic value in this region in red, and so our top species captured of economic value include black sea bass, vermilion snapper, gray triggerfish, red porgy, white grunt, red snapper, snowy grouper, and scamp grouper.

As I have said in previous years, our overview of our CPUE of our chevron trap index represents a time series now from 1990 through 2016. Our short bottom longline index represents a time series from 1996 through 2016. Our long bottom longline index represents 1996 through 2016. For the development of each index that I'm going to show over the next few slides, we use species-specific depth ranges, those being the depths where we have observed greater than 95 percent, and generally 100 percent, of our catch for that species throughout the history of the surveys, regardless of gear.

For our index, our catch per unit effort is catch per trap hour or catch per longline hour or catch per hook. Generally, here I am going to be presenting results based off a delta-GLM standardized approach. Most commonly, these are delta log-normal models. We do have a couple of species, I think only black sea bass this time around, that a delta gamma model was selected as the most appropriate. We have normalized the index to the long-term average, just so they're on relative scales, and the error bars that you're going to be seeing on the plots represent a plus or minus 95 percent confidence interval.

As we always do, we want to throw out a few caveats with these indices. This is a summary overview and not necessarily an update of stock status. As you're well aware of, there is a lot more information that goes into an actual stock assessment, and, within that respect, not necessarily the index I am showing you here would be the exact same index that would be presented at a stock assessment or used in a stock assessment model.

Different constraints, different stratification methods, different units, and models for CPUE may be different from those used in stock assessments, and also keep in mind that many species have

not been assessed or updated through the SEDAR process. Not all trends and analyses have been discussed in the SEDAR framework.

With that, I will go into actually plots of the different species. These are organized by family in alphabetical order. First up is gray triggerfish, and I'm just going to pause here for a second and let you guys look at each one of these graphs. If you have any questions, please let me know. That is gray triggerfish.

I would just highlight that the first year of our chevron trap survey was in 1990. We see this somewhat of an anomalous point for several species in 1990, and we don't really know what's going on there. It's been hypothesized that it could be to the effect of Hurricane Hugo occurring the previous fall. We haven't really nailed that down if that's the case or not, but triggerfish is one of those species that we see that.

Next up, we have tomtate. This is probably not one that is targeted economically, but it is a forage fish species for many of the snapper grouper species in the region. Here, we have white grunt. Here, we have red snapper. This is the same figure that Chip Collier showed a little bit earlier today when we were talking about the red snapper discussion. This is the delta GLM updated through 2016. I would just highlight, once again -- Basically, what you've got to remember with the SEDAR 41 stock assessment is that only the data available from 2010 through 2014 were used in that assessment.

As Chip mentioned earlier today, the actual model that was used in the SEDAR stock assessment was a zero-inflated negative binomial stock assessment model. Since we were originally able to provide the data to Chip, I have been able to update that index as it was used in the stock assessment, and that is what I am depicting right here.

Once again, it's on a fairly standard trend. I know you are probably asking yourselves how those two compare, and, once again, highlighting that that's the data used in the stock assessment. The red dots represent the nominal values. The gray bars aren't showing up very well, or the gray shaded area, but that represents the 95 percent confidence interval for the bootstrap analysis.

Keep in mind also that when this was used in the SEDAR 41 stock assessment that it was combined with the video index, and so it's still not quite the same as what you would have seen during the stock assessment. Here are how those two indices compare when they're normalized to those time series averages, and so the longer time series represents the average of the entire time series, while the dashed line represents only the average of the 2010 through 2016 period.

When I normalize those to the exact same period, they are pretty much congruent in what they are telling you with regard to the stock for red snapper. Here is the index for vermilion snapper. We are happy to see that we've seen sort of this uptick in recent times for vermilion snapper, and so at least continued through 2016.

DR. REICHERT: Joey, this is another example where we see that point that may be different from what you would expect.

DR. BALLENGER: Yes, and there is another one where 1990 seems to be a little anomalous compared to other years. Here is the only one that I'm going to show for the long bottom longline.

We see a couple of breaks in these indices. Those earlier breaks, between 2002 through 2006, are because we generally either had no sampling in those years or less than two positive longlines for golden tilefish during those years. Then you can see that break between 2012 through 2014. That was because we halted the long bottom longline during that period of time, due to financial considerations. We didn't have the resources available to conduct the survey during that time period.

Going back to the chevron trap, here is another forage fish species, black sea bass. Another one that you all talked a good bit about today, or over this meeting, is the black sea bass. Here is the delta GLM trends report version of that index that we provided as part of the trends report. This is different than the index that is used in the stock assessment models.

For that reason, once again, I try to rerun the models exactly how they were used in the stock assessment, and that's what I am showing here. This is actually the index that's been submitted as part of the SEDAR 56 update for black sea bass, and this is a zero-inflated negative binomial GLM model. It's not necessarily going to be the final model used, but it's probably pretty representative of the final model that's going to be used.

Just to show you how that compares, the long-dashed line is the trends report SEDAR index for black sea bass through 2015. The heavy black line is the one that we're recommending for use for SEDAR 56, and the SEDAR 25 index, that short-dashed line, dotted line, represents the exact same model used during SEDAR 25. It's just extended through 2015.

You notice there's been a common theme. When they differ, we have moved from a delta GLM -type approach to a zero-inflated negative binomial type of approach. We are considering, as far as updating this report next year and in future years, actually moving all of our indices to this more contemporary modeling structure, and so we hope to be able to do that moving forward.

Here is the chevron trap index for gag. Once again, this is one of those showing that anomalous value in 1990. You see a couple of breaks in this index, and that's because of less than two positive traps for gag in those years. Here is red grouper. Here is scamp, another species that's forthcoming on the update schedule. Here is snowy grouper, as determined via the short bottom longline index. This is knobbed porgy. That's another one of those species where we've seen apparently an anomalous value in 1990. This is red porgy.

Stenotomus species, if you remember, we have difficulty in the field identifying scup versus longspine porgy, and so we consider them as a genus level. That's all I had, as far as this presentation is concerned. Like I said, I just want to, once again, acknowledge Wally Bubley and Tracey Smart. They've been the ones that really have put this together the last couple of years, and also just all the folks that are involved with the Southeast Reef Fish Survey for all the data collection they've done throughout the history of the programs, and the research and vessel crews. With that, I will take any questions.

DR. REICHERT: Thank you, Joey. Any questions from the committee? Seeing none, thanks, Joey, for this update. We appreciate that. Mike reminded me that I skipped an agenda item, and so we'll go back to Number 12, Stock Assessment Improvement Plan Review, and I believe that John -- Were you introducing this Agenda Item Number 12, the Stock Assessment Improvement Plan Review, Attachment 27?

16. STOCK ASSESSMENT IMPROVEMENT PLAN REVIEW

MR. CARMICHAEL: We sent this around to you. It's the agency's stock assessment improvement plan. They do this every couple of years, and hopefully you had a chance to look at it and see the ideas that they have, and we would be interested in any comments you would like to make, and the council intends to provide comments on the improvement plan at our June meeting and have it available by the end of our June meeting, and so any suggestions that you have that we should incorporate into our comments would be much appreciated.

DR. REICHERT: That is indeed the only action item here, to review and provide comments and recommendations to the plan. As I mentioned earlier, it's Attachment 27. Any comments relative to this plan?

DR. GRIMES: A couple of things that are left out of it that I noticed, and I'm sure there are more, but all of the plans to change to research assessments and operational assessments and that whole -- None of that kind of thing is in here, I don't think. Also, a lot of data-limited method stuff is not really in it that could be.

MR. CARMICHAEL: I would say probably the reason like the research plan and such isn't is because is the national, the overall agency plan, and that's more of a Southeast Region thing that we're working on.

DR. REICHERT: We may want to note that in our notes or the report. Any others?

DR. BOREMAN: All the councils are submitting comments on this, but my first impression of this is the original stock assessment improvement plan was written in order to secure more funding from the Hill, to be blunt about it, and it worked. We got tens of millions of dollars out of Congress, and that money went to a lot of good causes, and a lot of people probably in Erik's shop were hired because of that money, as well as other places.

If you look at this document though, it's not written that way. It's just these are the 12,000 things we would like to do and fund us, and I think it should be marketed a little better in terms of priorities, identifying priorities. If we did get extra money, what should be funded first? How are things going to progress? What's the strategy here to get from Point A to Point B? Something that can be shopped on the Hill, in terms of giving a congressman or a senator an idea of what return they would get on an investment in improved stock assessment. Right now, it's everything we would like to do that we haven't done yet, and that is a little too broad, I think, to have any real use, in terms of getting a boost in funding for stock assessments.

DR. REICHERT: Thank you, John. Anyone else? Does this capture --

MS. LANGE: If we have comments as we go through over the next few weeks, do we send those to you, John?

MR. CARMICHAEL: Yes.

DR. REICHERT: That captures it, John? Okay. Anyone else? Again, I forgot to ask if there are any public comments relative to this agenda item. I also forgot to ask that same question relative to the SERFS update, the Southeast Reef Fish Survey update, and so I am going to look around and see if there is public comments relative to the SERFS update. Rusty, come to the table if you have a comment on Agenda Item 11. For the record, this is the public comment for the Research and Monitoring Plan Review.

MR. HUDSON: Thank you, Mr. Chairman. Sometimes it's difficult to hear. If we had a speaker or something back here, like we do at the council meetings, it would probably be a little easier on us over there. On the research and monitoring plan review, through our involvement in the South Atlantic SEDAR process, our members have become keenly aware that too many important fish stocks are too data-poor for conventional catch at age modeling and stock assessments.

To that end, we strongly encourage the SSC and the council to recognize the utility of cooperative research projects between state and federal scientists and our fishing industry members. With federal and state budgets for fisheries research facing cuts, cooperative research proposals maximize the economic efficiency of quality fisheries and independent and dependent data collection for many stocks in upcoming stock assessments and research on marine protected areas, et cetera.

The semi-annual Florida Fish and Wildlife Commission red snapper CRPs with our members have and will continue to be critical to finally characterizing the South Atlantic red snapper stock. The 2016 bottom longline CRP for golden tilefish, likewise, is an important CRP that will benefit the assessment of South Atlantic deepwater stocks and should be continued as an alternative to more expensive fisheries-independent programs from the past. Thank you very much.

DR. REICHERT: Thank you, Rusty. That brings us to -- Maybe you will remember that we updated the committee on the national SSC efforts yesterday, and so that brings us to Agenda Item 15, the black sea bass bag and size limit analysis. That is a suggestion that we have to treat this via the committee process that we discussed in the last meeting, and I think it's an excellent topic to approach in that fashion, and so, Mike, unless you want to give us a brief introduction, I think one of the things we need are committee members who are willing to participate in that process.

17. BLACK SEA BASS BAG AND SIZE LIMIT ANALYSIS

DR. ERRIGO: All I want to say is there is a scope of work document in there. It's just basically a draft of how things could go. I have done quite a lot of work on this already, but, with a workgroup, hopefully we can get all the bugs worked out of it, and it may go quicker than I anticipate, which would be great, but the scope of work document has a timeline laid out, but all we really need to get in this meeting is whether you think this would be a good candidate for the complex analysis review process that you guys had approved in -- I believe you approved it at your last meeting.

DR. REICHERT: Yes, we did.

DR. ERRIGO: Then just see who would be interested in being on that workgroup, and then we can -- That's all we really need.

DR. REICHERT: I am going to ask for comments or concerns relative to that suggestion. Seeing none, I am going to ask for volunteers or people who are interested in participating in that process. I am going to look around the table and see if anyone, at this point, is interested in participating.

DR. JOHNSON: Marcel, I would be interested, for sure.

DR. REICHERT: Anyone else? I may be talking with individual members later, especially those who are part of the black sea bass stock assessment, since we are talking about black sea bass here.

DR. ERRIGO: There are also several members not present, and so we can send out an email to let people know what was decided here and see if anyone is interested and things like that.

DR. REICHERT: Okay. One more chance. Thank you, Eric. Then we will continue this and see if we can identify additional committee members to participate here. Before I forget, are there any public comments on this agenda item at this point? Rusty.

MR. HUDSON: Thank you, Mr. Chairman. On Agenda Item 15 -- In the overview, of course, it never said a word about black sea bass, but, in the actual agenda itself, black sea bass, and that did come up last week in our Snapper Grouper Advisory Panel meeting, because there has been a massive amount of discards that's been going on for several years now, since the recreational increased that size.

There was some work that was done on the commercial aspect of the black sea bass pots, something else that has not been utilized correctly in the wintertime for three-and-a-half seasons now, until just now, after the ESA review, and so, even though Paul Rudershausen had done some good work in trying to look at a little larger mesh size, apparently the company is not interested in being able to produce it to be able to equip the thirty-two endorsement holders with the wire that would make that possible.

The Vice Chair of our council, in fact, has some of that increased-size wire that was Tom Burgess's stuff that he had used for the CRP with Paul, and he purchased that ability to use that, and so this is an ongoing effort, and the council will be considering that more at the June meeting, and so we'll be a little more focused on that size limit, but we are asking for no increase on the commercial size and a decrease on the recreational size, because we think it's a prudent thing to do, and so thank you very much.

18. THEN ET AL. M

DR. REICHERT: Thank you, Rusty. Any other comments or questions before we move on to the next agenda item? Seeing none, we will move to Agenda Item 16, and that's the guidance on natural mortality estimation. Maybe you will remember that, on various occasions, we talked about the potential utility of having some additional information on natural mortality, and there were some new developments during the blueline tilefish webinar relative to the Then et al. paper.

I think that this may be a topic that is better addressed through the SEDAR process, maybe a SEDAR workshop, rather than us addressing that. It's also a topic that obviously is relevant for other SSCs and council jurisdictions also, and so one of the things that I thought is that perhaps we should discuss this or this should be discussed more in the SEDAR framework than here at the SSC, and so, with that, I will open the discussion.

DR. BELCHER: This actually, when we were doing the black grouper assessment, did come up. That was actually part of the life history discussion, were the compares and the contrasts among the different estimates for mortality, and so I think there is kind of already -- At least from that workshop, I see the precedent is there that people aren't not paying attention to the changes.

DR. REICHERT: Thank you, and, as I said, in the blueline tilefish, we came up with yet another way to estimate natural mortality, and there was a lot of discussion on that, and so any objections against recommending that this perhaps should be addressed through the SEDAR process or as a SEDAR workshop?

DR. SHAROV: I don't have an objection, but I would like to understand how this is going to be addressed by a SEDAR workshop and what is the question or questions that are going to be put in front of that workshop. That is, we have a summary paper that reviewed a number of methods, and that is published and easily accessible, but obviously there is still always a choice to be made by the assessment group. Are you looking for like development of specific recommendations as to how the natural mortality methods should be selected or what is it that is going to be done at the SEDAR workshop?

DR. REICHERT: The way I was looking at this is more of -- Every assessment, we spend a lot of time on the estimator of natural mortality, and there is some developments in that area in recent years, and I think it would be good to develop some guidance, in terms of how this could be approached in a consistent manner, because I think one of the concerns that I have heard was that it almost seems like we are looking for -- The result of the discussions are a slightly different approach from assessment to assessment, and that perhaps this would be a way to take a look at that or to address that.

I am not entirely sure what the format would be, but I do not necessarily -- I personally do not necessarily envision a recipe book on how to approach it, but at least address some of the discussions that we had, that were had in, in particular, recent data workshops, at least in this region, but I don't have a precise vision on how that should be done, but that's where I think maybe the SEDAR best practices group can provide some guidance, and I think, if I remember correctly, we already talked about that, but, as I said earlier, I thought maybe that's better handled through that process than through our committee.

DR. SHAROV: If I could, I still am trying to understand. The best individuals that could contribute towards this are, I would assume, primarily the assessment scientists that are working on a number of different species and have a particular experience with application of a variety of methods. None of them is perfect, yet there are some recommendations offered in several papers, including Then et al., but I am puzzled as to who will generate these recommendations.

You mentioned, and I not familiar with the best practice workgroup, and are these the people that understand how the natural mortality estimation methods are being derived and how they are going to be ranked, et cetera? How are we going to achieve the progress in this area?

DR. REICHERT: John or maybe Julia is -- Julia is coordinating the best practices, and there is members of that best practices panel that have that expertise, but this is a group that came forth out of the SEDAR best practices workshop that we had, I believe it was the year before last, in Atlanta, where we were trying to address, more in general, best practices to help improve the SEDAR assessment process.

I am not saying that that's the group that will develop these guidelines, but I am more talking about the process, in terms of that group has discussed a potential workshop or addressing topics that come up in multiple SEDARs to address some of these problems that come up in multiple SEDARs, in that framework. John, maybe you can elaborate on that.

MR. CARMICHAEL: I can help you out of the hole. I think you raised some good points, Alexei, and it's certainly something that we've thought about with regard to this agenda item as well as the request, is kind of the point there is what are the concerns and what is the SSC interested in regarding natural mortality? T

here were some questions raised at an earlier assessment about the Then et al., I guess, method. The council noticed that and was interested in hearing what you guys think about it, and so, before we know what we're going to do in any type of SEDAR workshop, we would have to have a sense of what the issues are. If we pursue it in the SEDAR framework, and there is certainly reasonable justification to do it that way, getting everyone from the region involved in dealing with this and having consistency, which is always desired, certainly by people from the Science Center and the Regional Office who deal with all the different components of our region.

We would want to get everyone together and get a sense of what the ideas are and the concerns are, and we would probably have a -- We would develop some sort of organizing committee of various SSC folks and Center folks that might come up with the terms of reference and what the questions are for the workshop, and it would be considered by the SEDAR Steering Committee and go into the list of things that they would like to do for procedural workshops when we can get around to it.

The better sense we have of what's desired and what the outcomes are, probably the better case we can make for saying, hey, this is really an important priority and we need to do it, and I think natural mortality seems like one of those things that does get talked about a lot and gets national workshops devoted to it and other things, and the information about it seems to be changing quite often, and so, if you guys have some specific things that you would like to discuss, it would be helpful to know them. If it's more of a general concerns and thoughts, then it might be more difficult to get them resolved.

DR. REICHERT: John, remind me. When was the last national workshop on natural mortality? That was years back, right?

MR. CARMICHAEL: Yes, years back. It seems like there was one that maybe NMFS organized. I think at one of the meetings they talked about it, and I think ASMFC organized one, eight or more years ago. It's been a while.

DR. REICHERT: Yes, and there has been some developments in that field since the last meeting.

DR. BARBIERI: To John's point, a question. Some concerns came up with some of the databases that went into developing the new relationship, and, to tell the truth, I have discussed this with John Hoenig, and his response was that he always had planned for the database to be a dynamic thing that would be updated from time to time and that he felt that folks providing feedback to him for removal of some of those or addition of other ones might make that equation more realistic and more in line with what would be expected.

My concern is that, during some of the most recent assessments, because this was the last paper published in the Hoenig series of natural mortality, basically this is the one that was considered the best available science and was used. Then, since the buck stops here, as far as the very final review of what sticks and what doesn't, and this committee really provides the catch level recommendations to the council, I felt that it would be good for us to have this general discussion and understand that there have been some concerns about the revised equation.

John is aware of it, and he's thinking about perhaps publishing an errata to kind of comment on this, and I think a workshop at some point to evaluate all of those issues in more detail would be in line, but, in the meantime, what I didn't want to see is something that sounded prescriptive, of the Then et al. 2015 is the one that's going to be used, because this is the latest one in the series, when some questions have come up, and these need to be looked at in more detail.

DR. REICHERT: I think that -- Yes.

DR. BELCHER: I am trying to recall the specifics of when we were doing life history for black grouper, but we kind of looked at it the same way we've looked at it with all of the other estimators that there are for mortality, natural mortality. You kind of put the suite down in front of you and then have the discussions about which one you think is more appropriate, but make sure that sensitivities cover the full range of values that are represented, and I don't think we defaulted to the Then et al. approach. I think it was kind of relative to what the last assessment had been and was there reasons to think that there was anything that would lead you to a different estimator.

DR. REICHERT: Someone correct me if I'm wrong, but that depends on the type of the assessment, if you're talking about a benchmark or an update or a standard. The other thing is there have been, since the black grouper, the last one that we looked at, some developments in estimating natural mortality, I believe, and that's why, at meetings, we have come up -- We had a lot of discussion.

For instance, in red snapper and gray triggerfish, we had lengthy discussions on the best estimation, and I remember -- If I remember correctly, that may have been the assessment where we looked at the range and kind of looked at something that was in the middle, or an average, and I think that came back from the review as an inappropriate way to look at an estimator of natural mortality.

I believe, in the assessment following that, that led to a lot of discussion, in terms of, well, you have all these different estimators and they all provide a different estimate of natural mortality and what is the most appropriate to use, and, again, you go back to a series of discussions about what is the most appropriate, and especially relative to the Then et al. paper, because that did provide a fairly different estimate of natural mortality if you use that method than other methods.

I think, when we started talking about this, I believe about two or three SSC meetings ago, we were kind of talking about it, and some of us have said, well, maybe it's a good idea to kind of take another look at that or discuss that, because those are discussions that come back time and time again, but that then goes to what John earlier said.

As I said, I understand all the issues, and I don't believe we need to come up with a way to approach that right now, or at least I don't think that's necessary, but the points are well taken that were made, and those are definitely things that should be taken into account, but, in terms of the process, I felt that perhaps this was better handled within that framework than trying to have a lengthy discussion about best approaches here, and that's where I kind of left it, and so I'm not sure if that answered the questions.

DR. BELCHER: I am speaking for Luiz at this point, but it does seem like the SSC making that call would make it difficult when you're straddling between two councils, because, if the Gulf doesn't have the same approach to how they want to handle natural mortality, it makes it more difficult, where, if it's a SEDAR approach, then it's inherent to SEDAR, which means that everyone that would be under that umbrella would approach it the same way.

DR. REICHERT: Yes, and I agree. Thank you. Anyone else? We have not had public comment, and so I open the floor for public comment on the natural mortality. Seeing none, John.

MR. CARMICHAEL: Not public, but I'm just trying to think about what we do. Maybe approaching the best practices group is an efficient way to start with this, and I totally agree that -- I support doing this with SEDAR, for the issues of having one SSC go down this path, and the best practices group is dealing with the data and the issues and such, and they may know it best, and they are involved in all of the assessments across the board that SEDAR works on.

They can consider what type of outcome should be desired on something like this. Usually, in any sort of SEDAR best practices process or procedures workshops, we tend to avoid trying to be extremely prescriptive for each assessment, because you never know what situation you're going to face, and you never know what research is going to hit the books tomorrow, and so perhaps starting it with the best practices group and running it by them for some comment is a good way, and they have discussions over webinars, and we're not incurring travel expenses and whatnot to talk with them.

DR. REICHERT: Thank you, and that reminded me. Have we had an update on that best practices panel? Perhaps that may be useful. Alexei reminded me that perhaps we haven't informed the SSC on what's going on there, and so that may be good to have a brief update, to see where they are and what their approach is, and so maybe we can think about that for our next meeting. All right. Thank you.

Moving on to Number 17, we have an update on the Socioeconomic Panel. I believe Scott has mentioned some of the results from that, and I think we all have that report. Thanks for getting that to us so quickly, Scott, and I will hand it over to you if there is any additional information to provide to the committee.

19. SEP REPORT REVIEW

DR. CROSSON: A number of the things that the SEP was asked to review are not on the SSC's agenda, and so I am not going to include those here, other than people are welcome to read the report as it comes along. Some of the stuff about red snapper management and permits, I have already commented on. There is some additional stuff in the report, again, that people may want to look at, and we certainly encourage the council to look at it.

The only other thing that I wanted to mention is that I don't know that I mentioned it during our discussion of the ABC control rule, but we were asked, as the SEP, to consider whether there are any economic and social indicators of stock status, particularly for unassessed stocks, and so we did have a number of things that could be considered, and I know we had this discussion, where perhaps we have non-robust and robust stocks, but, for the non-robust stocks, where you don't have great stock assessment information, we talked about changes in ex-vessel value, changes in unemployment rates, anything else that might be a driver of changes in behavior besides a change in the biological status of the stock.

The socioecological systems analysis that Tracy and I have done for golden crab and wreckfish is very rich, and certainly also kind of time consuming to create, but it's something that can, again, be used, given the lack of a stock status report for those particular species, and so that's all I had to say about that.

DR. REICHERT: Thank you, Scott. Any questions of any of the members relative to the SEP report or questions in general for Scott relative to the Socioeconomic Panel?

DR. CROSSON: I just wanted to say, and this is both to the public and other SSC members, but our group is doing its program review this year, in a few weeks, and so, if people are curious about that, you can follow along on the webinar.

I know each of the different parts of NMFS have undergone these in recent years, and I think we are the last ones up, and so the Northeast Science Center social science group will have its review next week, and Tracy is going to be one of the outside reviewers for that group, and then our group is two weeks after that, and so, if you want information on that, it's either on the Southeast Science Center's website or I can provide you the link directly.

20. UPDATE ON CITIZEN SCIENCE EFFORTS

DR. REICHERT: Thank you. No questions? Are there public comments? Seeing none, let's move on to the update on the citizen science efforts. Amber provided a little bit of information earlier relative to the citizen science efforts. She provided a brief overview and a request for volunteers for that advisory panel. Amber, do you have any additional updates for us?

MS. VON HARTEN: Not right now. In the fall.

21. COUNCIL WORKPLAN UPDATE

DR. REICHERT: Okay. Thank you, Amber. We look forward to hearing from you in the fall where the efforts are going, and so, with that, I am asking if there is any public comments relative to the citizen science. Seeing none, we can move to the next agenda item, which is an update on the council workplan. Those are Attachments 32 and 33.

DR. ERRIGO: This is just provided for the information of the committee. There are no specific questions that any of the staff has asked of any of the amendments or anything. Otherwise, they probably would have been in the agenda, and so, unless the committee has any questions or comments on any of the information provided, this is really just provided as an FYI.

DR. REICHERT: Thank you, Mike.

DR. CROSSON: I have a question for Mike and/or for Marcel. If the council chooses to look at or chooses to start considering the revisions that we proposed to the ABC control rule, then the next logical step for them would probably be to create that as a new amendment, or I guess it would be a multi-FMP amendment that would affect -- We were talking about not being bookended into particular species groups anymore, but is that what we would expect to happen?

DR. ERRIGO: Yes, and so they would probably begin the process, I am guessing probably at the June meeting, but I would be a lot like the Comprehensive ACL Amendment, which affected almost all of the FMPs, and it probably take quite a bit of time to get everything set in order, but, yes, it would be a comprehensive amendment that would affect, I would guess, at least coastal migratory pelagics, dolphin wahoo, and snapper grouper.

DR. REICHERT: Any other questions or comments? Seeing none, from the committee, is there any public comments relative to the council workplan? I am looking around and seeing none. Then we can move on to Agenda Item 20, which is our public comment, and this is the general public comment period at the end of our meeting, and so I am asking anyone who has public comments at this point to come forward. Rusty.

22. PUBLIC COMMENT

MR. HUDSON: Thank you, Mr. Chairman. This process of having public comment after each agenda item, at least the ones that are relevant to the stakeholders and where we can prepare for that, we like that format.

Unfortunately, people that are hard-of-hearing like myself probably could use a speaker back here, because, if you swing away from your microphone and then swing back around, I might not hear the public part going this way and the comment part going this way, and I might be thinking that you're talking to your SSC members, but, that being said, thank you, because the opportunity to provide written comment and to participate after agenda items and before the SSC discussion and trying to move forward with that into the future, we hope that stays.

DR. REICHERT: Thank you. Your point is well taken, and I think it would be good, if that occurs, if people have a hard time hearing what we are saying, to let us know that, and we can certainly talk with staff to see if we can do something about that. It all depends on the room and where we are, but thanks for letting us know. The other thing is thanks for joining us at the SSC meeting. I think it's very important, and I really appreciate you taking the effort to join us and provide input, and so thank you for that.

MR. HUDSON: That being said, that is the future of the stakeholders, depending on the process that's been established by Congress to be able to work with everything, and we understand that it's going to be tough times coming ahead, and so we are anxious to try to be able to see the science catch up with what we're seeing on the water, and so thank you very much.

DR. REICHERT: Thank you, Rusty.

MS. COLE: I just wanted to apologize. We did bring the speaker. I know that it's kind of hard to hear, and I'm trying to control the volume. We brought it, but, when we hooked it up, it had too much interference. We figured that would be more interrupting than not being able to hear, and so I just wanted to apologize to everyone and let you know that I'm sorry for the lack of being able to hear, but that was totally on us. We couldn't get it to work, and so sorry.

DR. REICHERT: Yes, and I think, amongst ourselves also, if people think that people should speak up, then I think we shouldn't be shy to tell each other to speak up a little, because it is important that not just us, but everyone else in the room, can understand us also, and so I think it's a collective responsibility of letting each other know, whether it's the committee members or outside the committee, if you can't hear us. Let us know, and we will work on doing something about it.

DR. DUVAL: Again, before you guys go into your last item of report and recommendations review, I just wanted to offer my thanks to all of you all for all the work that you do on behalf of the council. I know that we tend to load you guys up quite a bit, and there always seems to be some sort of last-minute thing that we would like the SSC to consider, but I really appreciate all the time and effort that you all put into trying to give us the best scientific advice possible, and so thank you again for everything that you do.

DR. REICHERT: Thank you, Michelle.

MR. CARMICHAEL: I also wanted to say, about the public comment, any time -- We have the thing set aside, but, if somehow it gets overlooked or something is going on and people have something, always feel free to raise your hand and try to be recognized. We know Marcel has his back to him, but walk over to him and get his attention, and it will always be fine.

We're talking about a group that's not all that huge in here and not that many members of the public, and so I think we can accommodate it. Sometimes we will overlook it, and it's always been okay, within the SSC, to raise your hand and ask to be recognized, and so, yes, sometimes the Chair will forget, but I think he's done a pretty good job with the new process.

23. REPORT AND RECOMMENDATIONS REVIEW

DR. REICHERT: It happens. Thanks, John, for that, and so, yes, absolutely. When you feel that I forget, just don't hesitate to tap me on the shoulder, but not too hard. All right. That brings us to Agenda Item 21, Report and Recommendations Review. As I said earlier, I really appreciate Mike catching up with what we did. I think it worked a lot better this time than our last meeting, in terms of following what's going on, and Mike highlighting our discussion.

As I said earlier, Mike will send out what we currently have, and I really hope that you take a look at that, and, in particular, the agenda items where you provide a significant input to help us write the report and provide some background, and, to come back to a suggestion that Luiz had earlier, our red snapper discussions were complex. Mike tried his best to keep up, and I think that was one of the agenda items where I think it's really useful if -- Luiz, if you wouldn't mind coordinating and looking at that report part with the other members who were assigned that agenda item and then provide Mike and myself with comments on the report, as we currently have it.

Initially, I thought that it would be good to go back and go through the agenda items and see what we have. I am more than happy to do that with the committee, but, when I was looking at what Mike did, I think we captured the most important agenda items. If you disagree, let me know, and we can certainly go back and look at those agenda items.

For me, for my benefit, I think I have, with my notes and the ones that George made, I think have sufficient material to start drafting the report, but let me know if you would like to see particular agenda items and our recommendations and the capture of the discussion. If that is not the case, then I will work with Mike and others to complete the report.

DR. ERRIGO: I was just going to send that I will send out the version that I have here with the notes for every agenda item, where there are notes and things, and I have also incorporated any feedback that I have gotten so far. I have gotten some feedback for the last two days of notes, and so I have incorporated that, and I will send that version out to everyone to take a look at, and please feel free to use that to change or modify or move around or reword. Then we'll get this thing put all together. Thank you.

MS. LANGE: The final report will be in the same format as Mike has been editing all along, correct? In italics, what actually happened during the meeting, and so you're not going to have to cut and paste and create a whole new report?

DR. REICHERT: No, and Mike actually suggested to do it that way because we tailored that after the general report format that we have been providing to the council, and so that actually helped us draft the report already while we were in the meeting, and so, yes, you're right. If you will comment on the -- As you can see, comment on the text that is in italics. That is our recommendations and the summary of our discussion. The rest of the text is as you have found it in the overview. Any questions?

MS. LANGE: When do you want response, or you will say in the email?

DR. REICHERT: Yes, and that's something that I was going to ask Mike, in terms of the timing.

DR. ERRIGO: The absolute -- The briefing book deadline for the June meeting is May 23. We would like to have all the documentation in, so we can put the briefing book together, because then there's the holiday weekend and all of that. May 23 is the deadline to have all final materials in, but I will need to -- If I am getting comments in from multiple sources, they need to be synthesized and put together, and so we'll need a time hopefully before that, and so the week before, I would say, if we got all the final comments in, or at least a week or a week-and-a-half before, and then I can even send out a final copy for everyone to look at.

DR. REICHERT: So I am asking everyone to get your comments to me in a week-and-a-half, and would that be good for you guys? Would that be enough time to get that? That would get us the first week of May, and so let's say on Friday, May 5th. Would that work for everyone? That's a little less than a week-and-a-half, and then Mike, George, and I can -- George, go ahead.

DR. SEDBERRY: When you say get comments, you're talking about our edits on the document that Mike is going to send out to all of us?

DR. REICHERT: Yes. Then we can work on drafting the final report and then send it to you, because, last time around, I apologize. The committee had very little time to review the final draft, and so then Mike and I can work, with George, work on the final draft and then send it out to you so that you have a little bit of time to take a look at that before we have to add it to the briefing book, and I think that provides a little more information, because you obviously are not aware of each other's comments, and so then we try to get that to you by the end of the following week. That will give you some time the week after that, which is around the 17th and 18th, and then we can provide the draft to the final briefing book. Thank you.

All that's left is to remind you of the next SSC meeting, which will be October 24th through 26th here in Charleston of this year, in the fall, and then the upcoming council meeting is June 12th through 16th, and that's why we need the materials for the briefing book by May 23rd. Then the council meeting following that is September 11 through 15 in Charleston here, in South Carolina, and then the December meeting is in North Carolina, in Atlantic Beach, and that's December 4th through 8th, and so that's the usual council schedule. With that, any other questions or remarks?

DR. COLLIER: There was an issue that was tabled for red snapper, discussion of the ABC, and I did not know if it was tabled for later on in this meeting or tabled for the next meeting.

DR. REICHERT: At this point, relative to the discussions we had and the acknowledgement that, at this point, we cannot provide an ABC, I think we may table that to a later date, if it is relevant at all at that point, and so I don't -- I should have mentioned that earlier, but that's why I didn't come back to that, because, at this point, we are moving in a different direction, and so thanks for reminding us. Anything else? With that, I wish everyone safe travels back home, and I will see you in October, if not earlier. Thank you, and we are adjourned.

(Whereupon, the meeting adjourned on April 27, 2017.)

- - -

Certified By: _____ Date: _____

Transcribed By:
Amanda Thomas
May 19, 2017

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Dr. Marcel Reichert, Chairman
SC DNR/Marine Resources Division
PO Box 12559 (217 Ft. Johnson Road, Charleston SC 29412); Charleston, SC 29422-2559
843/ 953-5778 (ph)
ReichertM@dnr.sc.gov
3/08*, 6/11, 6/14*

Dr. George Sedberry, Vice-Chair
NOAA
Gray's Reef National Marine Sanctuary
10 Ocean Science Circle
Savannah, GA 31411
912/ 598-2345
george.sedberry@noaa.gov
6/10*, 6/13*

Dr. Robert Ahrens
University of Florida
135 Newins-Ziegler Hall
Gainsville, FL 32611
352/273-3630 (ph)
rahrens@ufl.edu
6/16*

Dr. Luiz Barbieri
FL FWCC/FMRI
100 Eighth Avenue SE
St. Petersburg, FL 33701-5095
727- 896-8626 ext. 4920 (ph)
luiz.barbieri@fwc.state.fl.us
3/08*, 6/10*, 6/13*

Dr. Carolyn Belcher
GA Department of Natural Resources
Coastal Resources Division
One Conservation Way, Suite 300
Brunswick, GA 31520
912/264-7218 (ph); 912/262-3143
Carolyn_Belcher@dnr.state.ga.us
12/01*, 3/08*,6/09*,6/12*, 6/15*

Dr. John Boreman, Jr.
23 Covington Lane
Durham, NC 27712
919/768-7198 (ph)
John.Boreman@ncsu.edu
6/09*, 6/12*, 6/15*

Dr. Jeffrey Buckel
Department of Zoology
Center for Marine Science and Technology
North Carolina State University
303 College Circle
Morehead City, NC 28557
252/222-6341(ph); 252/222-6311(f)
jeffrey_buckel@ncsu.edu
9/05*,3/08*,6/10*, 6/13*

Dr. Scott Crosson
NMFS SEFSC
75 Virginia Beach Drive
Miami, FL 33149
305/361-4468
Scott.Crosson@noaa.gov
3/08*, 6/11*, 6/14*

Dr. Churchill Grimes
211 Moriah Creek Road
Crawfordville, FL
831/713-6543
churchill.grimes@gmail.com
6/10*, 6/13*

Dr. Eric Johnson
Department of Biology
University of North Florida
1 UNF Drive
Jacksonville, FL 32224
904/ 620-5764
eric.johnson@unf.edu
6/10*, 6/11*, 6/14*

Anne Lange
1493 Diamond Blvd
Mt Pleasant, SC 29466
843/ 971-0628 (ph)
AMLange@aol.com
3/08*, 6/11*,6/14*

(Continued)

SCIENTIFIC AND STATISTICAL COMMITTEE (continued)

Dr. Sherry L. Larkin
Food & Resource Economics Dept.
P.O. Box 110240
University of Florida
Gainesville, FL 32611-0240
352/392-1845 Ext. 431(ph);
352/392-3646 (f)
SLarkin@ufl.edu
6/04*, 6/15*

Laura Lee
NC Division of Marine Fisheries
3441 Arendell St.
Morehead City, NC 28557
252/808-8094 (ph)
laura.lee@ncdenr.gov
6/15*

Dr. Genny Nesslage
Chesapeake Biological Laboratory
P.O. Box 38
146 Williams Street
Solomons, MD 20688-0038
410/326-7223 (ph)
nesslage@umces.edu
6/16*

Dr. Amy Schueller
NOAA Fisheries SEFSC
NOAA Beaufort Laboratory
101 Pivers Island Road
Beaufort, NC 28516
252/838-0815 (ph)
Amy.Schueller@noaa.gov
6/14*

Dr. Fred Serchuk
Casa Bonita 1, Unit 704
26000 Hickory Blvd.
Bonita Springs, FL 34134
774/392-4975 (ph)
fred.serchuk@gmail.com
6/15*

Dr. Alexei Sharov
Maryland Dept. of Natural Resources
508 Taylor Avenue
Annapolis, MD 21401
410/260-8288 (ph)
ASHAROV@dnr.state.md.us
6/15*

Dr. Tracy Yandle
Dept. of Environmental Studies
Mathematics and Science Center
Emory University
400 Dowman Dr.
Atlanta, GA 30322
404/727-6314 (ph)
404/727-4448 (f)
tyandle@emory.edu
6/11*, 6/14*

*Denotes year of appointment. SSC members serve 3-year terms.

Participants:

Rusty Hudson
Mike Larkin
Erik Williams
Kyle Shertzer
Shep Grimes
Dr. Roy Crabtree
Dr. Joseph Ballenger

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

2017 COUNCIL MEMBERSHIP

COUNCIL CHAIR
Dr. Michelle Duval
NC Division of Marine Fisheries
3441 Arendell Street
(PO Box 769)
Morehead City, NC 28557
252/808-8011 (ph);
252/726-0254 (f)
michelle.duval@ncdenr.gov

VICE-CHAIR
Charlie Phillips
Phillips Seafood/Sapelo Sea Farms
1418 Sapelo Avenue, N.E.
Townsend, GA 31331
912/832-4423 (ph); 912/832-6228 (f)
Ga_capt@yahoo.com

Robert E. Beal
Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland St., Suite 200 A-N
Arlington, VA 20001
703/842-0740 (ph); 703/842-0741 (f)
rbeal@asmfc.org

Anna Beckwith
1907 Paulette Road
Morehead City, NC 28557
252/671-3474 (ph)
AnnaBarriosBeckwith@gmail.com

Mel Bell
S.C. Dept. of Natural Resources
Marine Resources Division
P.O. Box 12559
(217 Ft. Johnson Road)
Charleston, SC 29422-2559
843/953-9007 (ph)
843/953-9159 (fax)
bellm@dnr.sc.gov

Zack Bowen
P.O. Box 30825
Savannah, GA 31410
912/398-3733 (ph)
zackbowensafmc@gmail.com

W. Chester Brewer
250 Australian Ave. South
Suite 1400
West Palm Beach, FL 33408
561/655-4777 (ph)
wcbsafmc@gmail.com

Mark Brown
3642 Pandora Drive
Mt. Pleasant, SC 29466
843/881-9735 (ph); 843/881-4446 (f)
capt.markbrown101@gmail.com

Chris Conklin
P.O. Box 972
Murrells Inlet, SC 29576
843/543-3833
conklinsafmc@gmail.com

Dr. Roy Crabtree
Regional Administrator
NOAA Fisheries, Southeast Region
263 13th Avenue South
St. Petersburg, FL 33701
727/824-5301 (ph); 727/824-5320 (f)
roy.crabtree@noaa.gov

Tim Griner
4446 Woodlark Lane
Charlotte, NC 28211
980/722-0918 (ph)
timgrinersafmc@gmail.com

Ben Hartig
9277 Sharon Street
Hobe Sound, FL 33455
772/546-1541 (ph)
mackattackben@att.net

(Continued)

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

2017 COUNCIL MEMBERSHIP (continued)

Doug Haymans
Coastal Resources Division
GA Dept. of Natural Resources
One Conservation Way, Suite 300
Brunswick, GA 31520-8687
912/264-7218 (ph); 912/262-2318 (f)
haymanssafmc@gmail.com

Dr. Wilson Laney
U.S. Fish and Wildlife Service
South Atlantic Fisheries Coordinator
P.O. Box 33683
Raleigh, NC 27695-7617
(110 Brooks Ave
237 David Clark Laboratories,
NCSU Campus
Raleigh, NC 27695-7617)
919/515-5019 (ph)
919/515-4415 (f)
Wilson_Laney@fws.gov

Jessica McCawley
Florida Fish and Wildlife
Conservation Commission
2590 Executive Center Circle E.,
Suite 201
Tallahassee, FL 32301
850/487-0554 (ph); 850/487-4847(f)
jessica.mccawley@myfwc.com

LT Tara Pray
U.S. Coast Guard
909 SE 1st Ave.
Miami, FL 33131
305/415-6765 (ph)
tara.c.pray@uscg.mil

Deirdre Warner-Kramer
Office of Marine Conservation
OES/OMC
2201 C Street, N.W.
Department of State, Room 5806
Washington, DC 20520
202/647-3228 (ph); 202/736-7350 (f)
Warner-KramerDM@state.gov

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

COUNCIL STAFF

Executive Director
Gregg T. Waugh
gregg.waugh@safmc.net

Deputy Director – Science & Statistics
John Carmichael
john.carmichael@safmc.net

Deputy Director - Management
Dr. Brian Cheuvront
brian.cheuvront@safmc.net

Fishery Scientist
Myra Brouwer
myra.brouwer@safmc.net

Financial Secretary
Debra Buscher
deb.buscher@safmc.net

Admin. Secretary /Travel Coordinator
Cindy Chaya
cindy.chaya@safmc.net

Purchasing & Grants
Kimberly Cole
kimberly.cole@safmc.net

Fishery Scientist
Dr. Chip Collier
chip.collier@safmc.net

Administrative Officer
Mike Collins
mike.collins@safmc.net

Fishery Biologist
Dr. Mike Errigo
mike.errigo@safmc.net

Fishery Economist
John Hadley
John.hadley@safmc.net

Public Information Officer
Kim Iverson
kim.iverson@safmc.net

Fisheries Social Scientist
Dr. Kari MacLauchlin
kari.maclauchlin@safmc.net

Senior Fishery Biologist
Roger Pugliese
roger.pugliese@safmc.net

Outreach Specialist
Cameron Rhodes
Cameron.rhodes@safmc.net

Fishery Citizen Science Program Manager
Amber Von Harten
amber.vonharten@safmc.net

SEDAR Coordinators
Dr. Julie Neer - julie.neer@safmc.net
Julia Byrd – julia.byrd@safmc.net

PLEASE SIGN IN

In order to have a record of your attendance at each meeting and your name included in the minutes, we ask that you sign this sheet for the meeting shown below.

South Atlantic Fishery Management Council

Science and Statistical Committee:

April 25-27, 2017

NAME & SECTOR/ORGANIZATION:	AREA CODE & PHONE #:	EMAIL ADDRESS:	MAILING ADDRESS:
Amy Dukes - SCDNR			
Tracey Smart SCDNR			
Lora Clarke - Pew			
Erik Williams - SEFSC			
Rusty Hudson - NOAA GFA ECFS			
Tom Ballenger SCDNR			
Stacey Weinstock CofC			
Wally Bubley SCDNR			

SSC APR 25, 2017 DAY 1 OF 3

Last Name	First Name	Email Address
Ballenger	Joey	ballengerj@dnr.sc.gov
Bell	Mel	bellm@dnr.sc.gov
Bianchi	Alan	Alan.Bianchi@ncdenr.gov
Boreman	John	John.Boreman@ncsu.edu
Bowen	Zack	fishzack@comcast.net
Brouwer	Myra	myra.brouwer@safmc.net
Burgess	Erika	erika.burgess@myfwc.com
Cheshire	Rob	rob.cheshire@noaa.gov
Cole	Kimberly	kimberly.cole@safmc.net
Conklin	Chris	conklinsafmc@gmail.com
DeVictor	Rick	rick.devictor@noaa.gov
Fitzpatrick	Eric	Eric.Fitzpatrick@noaa.gov
Helies	Frank	frank.helies@noaa.gov
Hudson	Russell	DSF2009@aol.com
Iverson	Kim	kim.iverson@safmc.net
Larkin	Michael	Michael.Larkin@noaa.gov
Markwith	Anne	anne.markwith@ncdenr.gov
McCoy	Sherri	sherrim@wildoceanmarket.com
McGovern	John	John.McGovern@noaa.gov
Mehta	Nikhil	nikhil.mehta@noaa.gov
Neer	Julie	julie.neer@safmc.net
Olson	Skip	j.skip.olson@gmail.com
Pulver	Jeff	Jeff.Pulver@noaa.gov
Ralston	Kellie	kralston@asafishing.org
Schueller	Amy	amy.schueller@noaa.gov
Seward	McLean	mclean.seward@ncdenr.gov
Siegfried	Katie	kate.siegfried@noaa.gov
Takade-Heumacher	Helen	htakade@edf.org
Wyanski	David	wyanskid@dnr.sc.gov
bubley	walter	bubleyw@dnr.sc.gov
carmichael	john	john.carmichael@safmc.net
mershon	wayne	kenyonseafood@sc.rr.com
vara	mary	mary.vara@noaa.gov

SSC APR 26, 2017 DAY 2 OF 3

Last Name	First Name	Email Address
Ahrens	Robert	rahrens@ufl.edu
Arnold	Bill	bill.arnold@noaa.gov
Atran	Steven	steven.atran@gulfcouncil.org
Ballenger	Joseph	ballengerj@dnr.sc.gov
Beckwith	Anna	anna@downeastguideservice.com
Bianchi	Alan	Alan.Bianchi@ncdenr.gov
Boreman	John	John.Boreman@ncsu.edu
Bowen	Zack	fishzack@comcast.net
Brouwer	Myra	myra.brouwer@safmc.net
Brown	Mark	capt.markbrown@comcast.net
Burgess	Erika	erika.burgess@myfwc.com
Byrd	Julia	julia.byrd@safmc.net
Cheshire	Rob	rob.cheshire@noaa.gov
Clarke	Lora	lclarke@pewtrusts.org
Cole	Kimberly	kimberly.cole@safmc.net
Collier	Chip	chip.collier@safmc.net
Conklin	Chris	conklinsafmc@gmail.com
DeVictor	Rick	rick.devictor@noaa.gov
Fitzpatrick	Eric	Eric.Fitzpatrick@noaa.gov
Glasgow	Dawn	glasgowd@dnr.sc.gov
Hadley	John	john.hadley@safmc.net
Hartig	Ben	mackattackben@att.net
Helies	Frank	frank.helies@noaa.gov
Hudson	Russell	DSF2009@aol.com
Iverson	Kim	kim.iverson@safmc.net
Laks	Ira	captainira@att.net
Lee	Laura	laura.lee@ncdenr.gov
MacLauchlin	K	kari.maclauchlin@safmc.net
Markwith	Anne	anne.markwith@ncdenr.gov
Martin	Gretchen	gbmartin71@gmail.com
McCoy	Sherri	sherrim@wildoceanmarket.com
Mehta	Nikhil	nikhil.mehta@noaa.gov
Merrifield	jeanna	jeannam@wildoceanmarket.com
Neer	Julie	julie.neer@safmc.net
Olson	Skip	j.skip.olson@gmail.com
Pulver	Jeff	Jeff.Pulver@noaa.gov
Schueller	Amy	amy.schueller@noaa.gov
Seward	McLean	mclean.seward@ncdenr.gov
Smart	Tracey	smartt@dnr.sc.gov
Takade-Heumacher	Helen	htakade@edf.org
Von Harten	Amber	amber.vonharten@safmc.net

Walker	Ron	rwwalker999@aol.com
Wyanski	David	wyanskid@dnr.sc.gov
bubley	walter	bubleyw@dnr.sc.gov
carmichael	john	john.carmichael@safmc.net
malinowski	rich	rich.malinowski@noaa.gov
vara	mary	mary.vara@noaa.gov

SSC Apr 27, 2017 Day 3 of 3

Last Name	First Name	Email Address
Ballenger	Joseph	ballengerj@dnr.sc.gov
Beckwith	Anna	anna@downeastguideservice.com
Bianchi	Alan	Alan.Bianchi@ncdenr.gov
Boreman	John	John.Boreman@ncsu.edu
Bowen	Zack	fishzack@comcast.net
Brouwer	Myra	myra.brouwer@safmc.net
Burgess	Erika	erika.burgess@myfwc.com
Cheshire	Rob	rob.cheshire@noaa.gov
Cole	Kimberly	kimberly.cole@safmc.net
Collier	Chip	chip.collier@safmc.net
Conklin	Chris	conklinsafmc@gmail.com
DeVictor	Rick	rick.devictor@noaa.gov
Dufour	Jacques	merrymarlin@gmail.com
Exley	Gary	river92@bellsouth.net
Fitzpatrick	Eric	Eric.Fitzpatrick@noaa.gov
Glasgow	Dawn	glasgowd@dnr.sc.gov
Harmon	Bill	wildbill2@yahoo.com
Harmon	Bill	billharmon2@yahooo.com
Helies	Frank	frank.helies@noaa.gov
Hudson	Russell	DSF2009@aol.com
Hull	jimmy	hullsseafood@aol.com
Iverson	Kim	kim.iverson@safmc.net
Laks	Ira	captainira@att.net
Lee	Laura	laura.lee@ncdenr.gov
MacLauchlin	K	kari.maclauchlin@safmc.net
Markwith	Anne	anne.markwith@ncdenr.gov
McCoy	Sherri	sherrim@wildoceanmarket.com
Mehta	Nikhil	nikhil.mehta@noaa.gov
Neer	Julie	julie.neer@safmc.net
Olson	Skip	j.skip.olson@gmail.com
Pulver	Jeff	Jeff.Pulver@noaa.gov
Ralston	Kellie	kralston@asafishing.org
Schueller	Amy	amy.schueller@noaa.gov
Siegfried	Katie	kate.siegfried@noaa.gov
Sinclair	Cindy	cinsinclair1@aol.com
Sinclair	Fred	fsinclair55@aol.com
Takade-Heumacher	Helen	htakade@edf.org
dick	kelsey	kelsey.dick@duke.edu
howard	tod	outofwackback@aol.com