SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Charleston Marriott Hotel
Charleston, SC

October 18-20, 2016

SUMMARY MINUTES

Scientific and Statistical Committee:

Dr. Marcel Reichert, Chair
Dr. Robert Ahrens
Dr. Carolyn Belcher
Dr. Jeffrey Buckel
Dr. Churchill Grimes
Anne Lange
Laura Lee
Dr. Amy Schueller
Dr. Alexei Sharov
Dr. George Sedberry, Vice-chair
Dr. Luiz Barbieri
Dr. John Boreman
Dr. Scott Crosson
Dr. Eric Johnson
Dr. Sherry Larkin
Dr. Genny Nesslage
Dr. Fred Serchuk

Council Members:

Dr. Michelle Duval, Chair
Zack Bowen
Ben Hartig
Mel Bell
Chris Conklin

Council Staff:

Gregg Waugh
Dr. Brian Cheuvront
Chip Collier
John Hadley
Julie O'Dell
Julia Byrd
John Carmichael
Myra Brouwer
Dr. Mike Errigo
Dr. Kari MacLauchlin
Dr. Julie Neer

Participants/Observers

Dr. Paul Ruderhausen
Dr. Joey Ballenger
Kenny Fex
Shepherd Grimes
Dr. Walter Bubley
Dr. Mike Larkin
Dr. Katie Siegfried
Anne Markwith
Dr. Erik Williams
Robert Johnson
Ira Laks
Rusty Hudson
Dr. Andy Strelcheck
Amy Dukes
Lora Clarke

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened at the Charleston Marriott Hotel, Charleston, South Carolina, October 18, 2016, and was called to order at 1:30 o'clock p.m. by Chairman Marcel Reichert.

DR. REICHERT: Welcome to the October SSC meeting. I hope everyone weathered the storm okay. Most that I have spoken to didn't have significant damage, and I hope that that's true for everyone. A special welcome to two new SSC members, Genny Nesslage and Robert Ahrens. Welcome to the SSC meeting. I also want to welcome Ben Hartig, our council liaison, and congratulate him with the National Fisherman 2016 Highliner Award. Ben, that was well deserved. (Applause)

Welcome to our Council Chair, Michelle Duval, and to Erik Williams, the Southeast Science Center representative, and also Shepherd Grimes from the Regional Office. Welcome to our meeting. I also want to welcome three AP members: Robert Johnson, Ira Laks, and Kenny Fex. They will participate in the discussions about the prioritization that we have later today. Gentlemen, welcome. Now, Gregg, Executive Director of the Council.

MR. WAUGH: Thank you, Marcel. I just wanted to give a welcome, and I know you guys have a lot on your agenda, and welcome to the new SSC members. I look forward to meeting each of you all, and I wish you well. The council really appreciates all you are tackling here, and I wouldn't say that we eagerly await the output, but we anticipate the output of your work here.

Just on a little bit of the lighter side, I wanted to mention that we've had a number of interesting father/son combinations over the years. In golden crab, we have the Neilson's, Richard and Dick, and I remember once that Richard turned to his father and said, go ahead, Dad, and you don't hear that a lot in meetings, and, on our Snapper Grouper AP, we had a long-term AP member, Phil Conklin, and now his son, Chris, is a council member here. Finally, Church, and Church has been on for a long time, and his son, Shep, is our NOAA GC for this meeting, and, Church, we hope that you instilled a lot of biological knowledge in him. I know he has a lot of biology in his background, and I hope it's just a little more biology than law, maybe, but we'll see.

The next step now is to get some mother/daughter or father/daughter combinations going in this process, but, again, I just wanted to welcome you all and, on behalf of the council, express our gratitude for all you all do. You have a very tough job, and you have a lot on your agenda, but I will be here, and I look forward to speaking with you all. Thank you.

1. INTRODUCTION

DR. REICHERT: Thank you, Gregg. I would also like to acknowledge Zack Bowen as one of our council members. Zack, and, of course, Chris, welcome. Unless I have forgotten anything, I would like to move on to the Introductions. I would like to remind everyone that this is a meeting that is both recorded and broadcast. If you could turn your microphone on and acknowledge yourself, so we can use that for the minutes, and, Scott, let's start with you.

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

MS. LANGE: Anne Lange, SSC.

DR. BOREMAN: John Boreman, SSC.

DR. SHAROV: Alexi Sharov, Fisheries Service, Maryland Department of Natural Resources.

DR. SERCHUK: Fred Serchuk, SSC.

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

DR. AHRENS: Rob Ahrens, University of Florida.

MS. LEE: Laura Lee, North Carolina Marine Fisheries.

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

MR. COLLIER: Chip Collier, South Atlantic Council staff.

DR. ERRIGO: Mike Errigo, South Atlantic Council staff.

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

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

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

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

DR. GRIMES: Churchill Grimes, SSC.

MS. NESSLAGE: Genny Nesslage, University of Maryland, Chesapeake Biological Lab.

DR. JOHNSON: Eric Johnson, University of North Florida.

DR. S. LARKIN: Sherry Larkin, University of Florida.

MR. LAKS: Ira Laks, Mackerel Cobia AP Chair.

MR. FEX: Kenny Fex, Snapper Grouper Advisory Panel Chair.

MR. JOHNSON: Robert Johnson, Snapper Grouper AP.

DR. REICHERT: Thank you. With that, let's move to the Approval of the Agenda. I have one comment. In the previous meeting, I believe we talked about perhaps having a presentation about natural mortality. We were not able to organize that for this meeting, and so we'll keep that on the agenda, maybe for the next meeting, and see if either Dr. Hoenig or Dr. Then are available, but we haven't forgotten about that. I am asking for any comments on the agenda.

MS. LANGE: Under Item Number 7, I was wondering if we should include some -- There is action items on there to review projections at specific reference points, and I wanted to know if we should include F 27 percent and then maybe a discussion of the application of the ABC control rule.

DR. REICHERT: Yes, we can do that.

MS. LANGE: It's just not a specific action item listed under the agenda.

DR. REICHERT: Okay. We can add that. Remember that we have the discussion of the ABC control rule later in the meeting also, but, yes, we can add that. Any other comments? Seeing none, then the agenda is approved. Any comments on the minutes of the May 2016 meeting?

DR. SERCHUK: I just had one suggestion for the minutes. I realize that they're different than the summary of the meeting, but I find it would be helpful, or it would have been helpful for me, if the minutes could have had subheadings for the topics that were discussed. It's just one run on after another in the minutes, and so if that's possible to do in the future, I think it would help in reading through the report. Thank you.

DR. REICHERT: I agree with you, and I actually added that myself. Mike, do you think we can do that?

DR. ERRIGO: Yes, we can discuss that at the staff level. We may be able to go in. I don't know if they would be able to do that when the minutes are being typed up, but we may be able to go in after the fact and break when different subjects are being discussed.

2. PUBLIC COMMENT

DR. REICHERT: I agree that will be very helpful. Any other comments on the minutes? The request was if we move from one agenda item to another to specifically mention that, and that will help with the breaks and creating the subheadings, and we can certainly do that. If I don't, remind me, Mike. No other comments? Seeing none, then the minutes are approved.

That brings us to the Public Comment. As you may have seen in the agenda, the council has requested that we expand the opportunities for public comment. To see how that would work out, we have, and, Mike, correct me if I'm wrong, but we have an additional opportunity for public comment at the end of today. Then, tomorrow, there will be an opportunity for public comment at the end of every agenda item. Then, on Thursday, it's at the beginning and the end of the day, and so the discussion within the council was to either provide an opportunity at the beginning and the end of every day or at the end of every agenda item, and so we'll have both opportunities here at this meeting, and then we can discuss how that works out for the discussions.

DR. ERRIGO: Just one small correction. Today, we didn't put in two public comment periods, because it's a really short day, and so there's only one public comment today, but, tomorrow, yes, there will be public comment after every agenda item. Thursday, we will have one at the start of the day and one at the end of the day.

DR. REICHERT: Thank you for that clarification. Also, on Thursday, we have an opportunity to discuss that under Agenda Item 15.

DR. BOREMAN: In the Mid-Atlantic, we have the public comment at the beginning of the discussion of a particular topic, because that allows the public to provide input before we discuss what we need to talk about, in terms of ABCs or whatever, and so that's something to think about, rather than have the public come in and say that they didn't like what you did or they like what you did, but maybe they can have some input and bring out some information that may be useful during the discussion of the SSC. Thank you.

DR. REICHERT: Thank you, and maybe we can revisit it when we discuss this at Agenda Item 15, but thanks for that. I made a note of that, to take a look at that. Unless anyone else has any comments or concerns, then we can pick this conversation up on Thursday. Seeing none, I am asking if anyone from the public has any comments at this point. Rusty.

MR. HUDSON: Rusty Hudson, and thank you, Mr. Chairman. I'm a little tired. We're having fun in Daytona with Matthew still. Otherwise, we did submit -- The East Coast Fisheries Section submitted a written comment as well as Jimmy Hull, and they like the fact that you have that in the briefing book.

We are hoping that you can develop some positive solutions at this meeting. We don't want to see any closed areas, and I can tell you that much, as far as cutting in on any other fisheries that we have. They're afraid of that part. This part about the comments after the items, I think that's a pretty interesting idea, and so thank you very much for doing that.

3. STOCK ASSESSMENT PRIORITIZATION

DR. REICHERT: Thank you, Rusty. Are there any other members of the public that want to make comments? Seeing none, let's move to our next agenda item, which is the Stock Assessment Prioritization. These are Attachments 2 to 6. Attachment 2 and 3 are providing an overview of that stock prioritization, and Dr. Erik Williams presented that overview at our last meeting. Attachment 4 is an overview of the various metrics. That is a spreadsheet that Erik created. Thanks for doing that, Erik. I thought that was very helpful, and that will be our guide through the discussions.

I want to mention that be careful, because, as listed in the spreadsheet, if you make changes to one sheet, it carries over to one or more other sheets, and so be careful if you change some of these values, because it has an effect elsewhere. Attachment 5 provides an overview of the stock information that is included in the assessment and any available data that may help us, and Attachment 6 provides an overview of the landings trends.

Let me remind us of the action items. It is to provide recommendations for revisions or modifications to the draft application and discuss and provide recommendations on initial inputs, particularly those requiring expert advice, including: the value for time since terminal year for unassessed stocks; scoring range for factors; default values for unknown factors; and identify stocks to be considered for a data limited SEDAR assessment projects.

As I mentioned earlier, I am happy that a number of the AP members are here to help us with making those decisions, and it may be good, Mike, if we can bring Table 1 in Attachment 3 up. That lists all the different factors, and so it may be good to take a look at that. That is the list of factors, and there are a number that we are asked to provide input for. I counted about nine that we are asked to provide input for, and I thought that it may be good to look at some of the tables that are relatively easy to fill in. John, any further guidance?

MR. CARMICHAEL: I think we wanted to highlight what the documents are. I think what I would do is, maybe for the benefit of the AP folks who are here, is just kind of explain to them what this is all about, because it's probably relatively new to them.

This is something that's been going on for a while. The SSC and the council have had some presentations on it, and so you've probably seen some of this through the briefing materials. The agency has come up with a process for trying to prioritize stock assessments. As we know, there is far more need for stock assessments than there is ability to do stock assessments, and deciding which ones get done and when is a pretty tough business, at times.

Within our system, the council, the SSC, the advisors, they all make recommendations. They go through the SEDAR Steering Committee, and they really have to fit however many squares -- As many things as they can into a system that really needs to do more than what it can, but that's the reality that we face.

One of the things that the agency has come up with to deal with this is this process for determining what the priorities are, and this is from the national level. On one hand, it's potentially a way to compare across regions what are the needs, what are the priorities, and perhaps how many of the real priorities are actually being addressed. Through a kind of quantitative approach like this, we're certainly hoping, in the South Atlantic, it will help show where we rank in terms of meeting the needs that we have, and using a tool that's been put forth by the agency should help give some support for that.

If you look at the presentations and stuff, it seems kind of complicated, but, really, as Marcel mentioned, it's just a number of criteria, and they're scored in different ways, depending on the type of information, but what we wanted to get the input from the advisors and the others and have the discussion here is really focusing on these things up here in the blue top group, which is the fishery importance.

If you notice, we have the commercial fishery importance, and the recommendation there is scaled from the value of the fishery. Recreational importance though is scaled from regional input, because those fish aren't sold, and so you don't have that value assigned to each individual fish. The importance of subsistence, and, as I said, this is national. There is areas of the country, like in the Pacific Northwest, where some of the salmon stocks can be critically important to peoples' subsistence.

With snapper grouper, perhaps not quite as much, just given the nature of where those fish are caught. It's very different than say a real inshore fish, but these are the criteria that we're working on, and so our goal here is to go through all of these today. The non-catch value, this is one where I think a number of our species probably do have something. Goliath grouper is certainly one that comes to mind, where the council has decided the non-catch value of that species is very high.

The constituent demand and choke stock is another place where we think getting feedback from the advisors could be very helpful and just understanding the importance of the fisheries themselves.

The SSC had looked at this, and there's a spreadsheet, which I will go to next, which has criteria for each one of these, and the SSC went through these. Dr. Williams from the Science Center put this together, and we worked together on this, to try and come up with a way to apply this to our region, and so the general process is we get this, we get the scores, and we apply it to our regions, and then we have a ranking for what the priorities really are within the South Atlantic. Then that's hopefully going to help inform the council and the SSC about what priorities we go forward to the SEDAR Steering Committee with.

Ideally, we will get a sense here today of what we think are good scores for these different ones that require this sort of expert input, and I will show those in the spreadsheet, because that tends to make it a little more understandable. This is your Attachment 4, and this is the stock prioritization spreadsheet.

As you will notice in there, we have all the different inputs, and there is different weightings. This is the weighting for the inputs. What we're going to focus on, for example, is what are the scores we would put in here say for recreational importance of the fish. We have a group of representative species that were selected, thirty-three stocks here, based on things that have been assessed or look like they could be assessed or they're important to the fishery overall. We are trying to manage the workload some and not deal with every species. There are some species that the data are so scant that we may not be able to assess them, and so we've tried a first cut just to be realistic with the species we're working on here.

The idea would be that we can put in different scores here for what you think the recreational importance is, and the starting scores that are here are based on a couple of different things, and so I have the metrics. You will see that Metric 1 was just the percent of recreational catch, Metric 2 is a log scale of the maximum, and then Metric 3 is the average of those two, and that's what is being used for the score.

If you go down these, and you can see different fish, based on the amount of recreational catch, have different levels of importance, and so you have here is a relatively high one. Dolphin is a 4.7, and cobia is a 4.5. Silk snapper comes at a 1.8, and red hind is coming down here to 1.5, and so higher recreationally-caught species are higher on the list than less recreationally-caught species.

That's just the starting point. That's one way to do this. You guys may look at those and say, you know, that really makes sense and those seem like they're real recreationally-important species, or we may look at those and say, you know, some of those -- Maybe they look pretty good, but others, we think, for other reasons, are actually of greater importance to the recreational fishery, and I think we could just change those scores, and that is sort of the idea of this expert input. Here you have one approach to looking at it, but the expertise comes in with looking at these and saying why you think one fish is greater than another.

We will go over here to the one on subsistence, and these have all just been basically no values put in there, and so if we didn't really think any fish had some subsistence value in our fishery,

then this wouldn't be something that would really contribute to our factors, and we wouldn't have to spend a lot of time on that one.

Constituent demand is one that I think we can make some progress on, in looking at this, and this is just a way of saying what are the important fish in our fishery, which ones do you hear about and which ones are really targeted and which ones have the greatest interest. These were all set at just a 2. These is set up with a little slider, so we can give it a range of one to five, but, as you can see, we can go down and you can say, well, black grouper, that's really important, and maybe black sea bass is at a max, and maybe silk snapper is kind of low, and we can move these around and change the scores.

One thing to keep in mind with something like this is if we were to set -- Right now, everything is set at sort of the middle of the range, at 2. That means this is a relative ranking. It's how does silk compare to black sea bass? If everything were set to 5, then everything is going to look super important. What's really important here is how does one fish compare to another fish?

If you go in there and you think maybe some are really not important to the recreational fishery at all, we would set all of those really low, and maybe you have a number that you say this is really important to the recreational fishery, maybe black sea bass or red snapper or things like that. We can set those to 5. Then we're starting to build some resolution in that scoring, and that's what is going to be important, is to get the resolution in that scoring. If there's some we kind of don't have any information or you're not really sure or you think it's probably equal commercial and recreational, you could just leave it at like a -- You could leave it at like a 2, to deal with that part.

Then we have the non-catch value. This is another similar thing, of just saying what fish -- There's kind of way to capture ones where you don't think the other criteria have really given it maybe the importance that it needs. Some fish just have this intrinsic value to them and you want to capture that, and those would be ones that we would want to probably raise the score up some on.

Those are really the ones that I think we'll probably get the most benefit of impact from you guys that are experienced with the fishery, and the others have a number of different ways that they've been going about it that's more technical, but I think perhaps, if we get far enough in this ecosystem importance, it might be good, where I think you guys could give us some input as well.

With that, I guess I just think if you guys are sort of clear on where we're trying to go and what we hope to accomplish here in the next couple of hours -- We have paid attention to the agenda, and we know that this is the sort of thing that could occupy our time for three or four days if we would let it, and so we're going to try to be rather efficient and get through this by say five o'clock, at the latest, so that we can continue on with our agenda, but, if we need to take more time, I think we'll do what we need to do. If things came up that we thought needed more work, we could deal with that, but it would be nice to have scores for this, preliminary scores, by the end of this meeting, to feed into the council at their December meeting and the discussions of the things that we do in the future for stock assessments.

DR. REICHERT: Thank you, John. Before I get to some questions, I failed to acknowledge Chip Collier, who has again volunteered to help us out with the notes, and he will, in particular, concentrate on the main points in our consensus statements, and I will ask various SSC members, in particular if you contribute to the discussions, to help with the report writing, and we will review

the notes and the consensus statements at the end of every agenda item and then again at the end of the meeting, and so that's just as a request to all of you to please make notes and help us write the report. With that, Erik Williams was one of the people who designed this spreadsheet, and, Erik, at this point, do you have any additional comments or suggestions? Again, thanks for doing this, with others.

DR. WILLIAMS: I think John actually summed it up pretty well. The only thing I would add is just keep in mind that this is a tool and it's not going to set the SEDAR schedule in any way. It's basically a tool that's going to help the SEDAR Steering Committee in making their decisions, and that's all. It's not going to set anything in stone and it's not going to fix the SEDAR schedule.

The SEDAR Steering Committee still has the final authority on determining what stocks they want to assess in a given year, and so this is just a tool. Keeping that in mind, don't get hung up on the details, I guess is my main advice. Just try to fill this thing in as best we can, and maybe we will refine it over the years, but I think the important thing is to get this thing rolling and see how it works, because, again, it will just be a tool. If we see that the tool isn't really working very well, we can go back and refine it.

DR. REICHERT: Thank you, Erik.

DR. SERCHUK: I wanted to follow up on that, because one of the things that one could do is look retrospectively at the priorities that have been already assigned through the SEDAR process and then see, through this scoring system, whether the scoring system would mimic those decisions. If they do, that's fine. If they don't, one would ask why don't they, and that, I think, gets back at what Erik was saying, that this is a tool.

There will always be some subjectivity, and there will always be some other issues, perhaps, that are not in this procedure that would change priorities, but we do have an opportunity to look back at the decisions that were made and then, using this template, this process, see whether we would come to the exact same prioritization that has already happened. If it does that, then that's fine. If it doesn't, then I think we should ask if there's something that came into the picture that caused decisions to be made, in terms of prioritization, that wouldn't be reflected in the template that we have.

DR. SHAROV: I am trying to understand the general concept here. The way I understand it is that we are developing the tool that will help us to introduce various factors in the most independent way possible that we could come up with. Based on that, I would think that the initial assumption is that each of those factors is rated in the range of 1 to 5 and they have an equal weight. That would be sort of the baseline.

The document that was sent to us says that the further -- The Center, I believe, will be looking at developing the weighting procedures as to how you would assign a different weight, to give a higher weight, to particular factors, which is totally logically and that should happen, and, depending on the species, it could be either fishery importance factor or maybe ecosystem importance factor that should be given a higher weight, but I wonder if there is any concept behind it or any idea behind it in how this is going to be done or is this going to be essentially an ad hoc decision that will -- If that's the case, it essentially will be equivalent to simply sitting down without any scoring and saying it is most important for our fishery and that's why we're giving it

the higher strength, and so, is there a concept in terms of the weighting of these factors or not at this point? I am curious.

DR. REICHERT: Mike, to that point?

DR. ERRIGO: The factors do have different weights. They are not equally weighted right now. The second tab in the spreadsheet is the relative factor scores, and so their percent importance of how they affect the outcome of the rankings. It looks to me that it's more constituent driven, and so, regionally, they can change, but I don't know how these default values were arrived at.

DR. REICHERT: I think the other thing is that, and correct me if I'm wrong, we are also asked to comment on the ranges and the scoring, and so we have an opportunity to make some recommendations in that field.

DR. AHRENS: How do you address regional differences? You look at some of these species, like yellowtail snapper and black grouper, and they probably have very little importance in a wide area of most of the region, but they're very important in a specific area, and so how would you handle that?

MR. CARMICHAEL: I think that's sort of one of the things we come to grips with here. We're not sure. If you look at the recreational importance, for example, I think we would just look at these and think -- I sorted these, and so here is your top ten, for example, recreational fisheries, using that Metric 2, which is the default now, and we can just look at these and see if we think those are the top fish. If not, if yellowtail snapper comes down here, and you think, well, to the snapper grouper fishery overall, do you think that's about where it should be or not, and, if we think it should be a little higher, than I think we'll just change the value.

I don't think that the regional differences -- I think they should be reflected. Even though it's a regional fish, if it's incredibly important to the recreational fishery, then it should be reflected as a high value here. I don't know that a fish that is all over the region, versus one that's in a smaller area, should carry any more weight. Certainly not here. Maybe in some of the other factors which were a little more open, like constituent demand, perhaps. That's an area where you could say, well, maybe you give a little nod to one that is more far-ranging than one that's a little bit smaller, because it impacts more constituents, perhaps.

DR. CROSSON: I was actually thinking about that exact question, because I wanted to define the definition of constituent demand. The way it's listed in Attachment 3, the way it's described, it says constituent demand is envisioned as the place where the importance of less measurable considerations may be emphasized.

For example, some species that are very important for one fleet or area may have lower overall catch values, and so that's what that particular tab is designed to do, is to catch something that is really important to one specific area or specific fleet that's heavily dependent on it, but you're not going to see it, because it's going to get subsumed in the economics or whatever of all these other stocks.

DR. SERCHUK: I have one comment, Mr. Chair, about the scoring system, if I may. One of the scores that's listed under fishery importance factors is rebuilding status, and there are only two

possible values for rebuilding status. You're either in a rebuilding plan or you're not. You are giving zero or one. From my perspective, if an assessment has been done and a rebuilding plan has been put into place by the council, monitoring or evaluating the efficacy of that rebuilding plan is extremely important to the council. That's why they put it in. They put in management measures which they hoped would make progress towards rebuilding the stock.

Understanding that, it seems to me that only having a one point difference between not having a rebuilding plan, which, in many cases, means it's not applicable and we don't know the status of the stock, and so it's not under a rebuilding plan, and only a 1 if you have a rebuilding plan, which the council has invested a lot of time and effort into and in which, in many cases, because there are not other metrics to evaluate the status of that rebuilding plan until you get another assessment, that is we don't have a fishery-independent index, seems to me that the scoring should be really quite a bit more disparate than zero and 1.

I just raise that as a point, because the other factors, of course, in terms of commercial fishery importance and so on and so forth, they have a range of values, but it seems to me that the difference between zero and 1, in terms of the total score that would go into the prioritization, is minor, when in fact, from our perspective, it's major if a stock is in a rebuilding plan as opposed to not in a rebuilding plan, and I would have thought, from a management prioritization point of view, that it would be very important, and so I raise that as an issue, Mr. Chair.

DR. REICHERT: Thank you, and, again, that's one of the things that we can recommend, to make changes to some of these ranges.

DR. CROSSON: Right, but that's the whole idea behind this, is that this tool be used to demonstrate some of the opportunity costs of continually trying to reassess a stock that's in a rebuilding plan when you've only got another year or two worth of data. Every time you assess one species, you are basically knocking another one further down the list, and so I'm not sure why that would be of particularly high importance.

DR. SERCHUK: The reason I think it's important is many of the stocks do not have any interim measure of evaluating whether you are rebuilding or not, other than doing the assessment. Again, there is no index of stock size from any of the stocks that you can say, well, yes, we see an improvement. The index went from 2 to 8, and we think, without doing the assessment, that we're heading in the right direction or we're going in the wrong direction.

The difference between not having a rebuilding plan and zero is -- In some cases, we know nothing. There is nothing. We don't know the status of it. We don't have sufficient information to do it, and that's what I'm really getting at, and 1 is a very definitive course of action and the other includes stocks that have information, but we haven't assessed it, or the information is not available do the assessment, and so we have no idea.

That was my only point. I don't want to get into a debate here about it, but I just think the range is too short between zero and 1, and it should be much larger, given that the council invests a lot of money and a lot of time and a lot of thought when they put a rebuilding plan together.

DR. REICHERT: Thank you, and I do feel we should start looking at the scoring, but, Luiz, to that point.

DR. BARBIERI: Thank you, Mr. Chairman. If you want to get started on the scoring, I think that's fine. I was just wondering if this scoring -- There is some rationale behind the scoring, behind the criteria, and Erik could kind of help clarify, because my understanding is that the agency has been working on this for a while, and they put together a national team with regional representation to sort of come up with this general template for how the scoring was going to be accomplished.

I am not saying that there is no opportunity to change it, but I think it would help if we had a refresher on some of these issues, Erik, if you feel you can, if you can remember some of those things, and you can help clarify, because I think it would bring the committee to a level of comfort just to know the reasoning behind some of these initial proposed scorings.

MR. CARMICHAEL: I appreciate that, and there was a national thing that came up with that, but they also expected a lot of regional input. I think it's easy enough, if this group thinks that being in a rebuilding plan should be worth more, than you make that 5 instead of 1, and we do that and move on. I think you would find that more effective to make that decision after you get through more of these and you discuss the overall weighting and decide what that value actually should be and you decide if you think a stock that is in a rebuilding plan is getting enough bump.

As we said, it doesn't mean that this is the last thing either. This is just one tool, and so my concern of getting too much into the really fine-scale details of the scoring and everything is that we're not making the most of our opportunity with our AP chairs here to score these couple of things that require expert input that this committee, at the last meeting, said we don't have the expert knowledge to decide what the recreational importance is.

I am willing to talk about these other things as long as the committee wants, but I want to make sure, out of respect to our AP guys that are here, that we talk about these couple of issues that require their feedback, and so I think, as Erik said, we should focus on these and not so much some of the details of the other aspects.

DR. REICHERT: Yes, and, in particular, the ones that we are asked to provide input for, and so, unless anyone would like to comment, let's make sure we're not forgetting this, but I looked at the various factors, and, with the committee's permission, I thought maybe importance to subsistence, that non-catch value, and then talk about commercial and recreational importance and then move to the key role in ecosystem would be a good start, in terms of the sequence of these decisions, because I think a couple of the first ones may be relatively easy, although I may regret saying this.

With that, Mike, if you can bring up the importance to subsistence, and we can actually change the value or put it in an extra column, so we're not changing the original file, but I will leave that up to you, Mike.

DR. ERRIGO: I have a copy of the original, and so we can go ahead and change this one. That's fine.

DR. CROSSON: To start off this discussion, I guess in the interest of putting a strawman out there, I tend to think of subsistence fisheries as being inshore fisheries. It's seldom that somebody would go far offshore and be able to afford to do that, to catch a lot of these fisheries, and so I'm

thinking, to my mind, the subsistence fisheries that might exist in this list are probably going to be confined to the Keys, things that people can catch close to shore, and yellowtail snapper pops into my mind. I guess hogfish pops into my mind. Beyond that, are there any other subsistence fisheries that we really think of that are on this list? I mean, I'm a North Carolina native, and I don't see many of them out here that I can think of that folks are just catching at the subsistence level.

DR. REICHERT: I would agree. I looked at the list, and I didn't have any of the species listed that I thought subsistence fisheries played an important role, but, Kenny, Robert, Ira, do you have anything to add? Do you think some of these species may actually be important for subsistence fisheries?

MR. LAKS: I would say, and I don't see it on the list, but gray snapper in the Keys would probably be the only thing, for people off of bridges, but I would think that would be the only one.

DR. REICHERT: That one is managed by the state or is it federal? It's federal? Sorry.

MR. CARMICHAEL: If we're going to think gray snapper, so, considering the people that are fishing for subsistence, how important is gray snapper to them? If it's one of the most important fish, then maybe it's a 5. I think, around here, the important things to subsistence to people that fish around Charleston are going to be like spot and kingfish.

Those are the things they mainly catch, and then things they rarely catch, but still depend on, could be a lower number. For the people that are fishing and catching gray snapper for subsistence, do you think it's kind of one of their top fish and we give it a 5, or do you think it's maybe a little lower and we give it maybe a 2 or a 3?

MR. LAKS: I would say it's probably at least a 4. That's one of the reasons, I believe, Florida kept the lower size limit, was so that they can keep some fish for people that are on the land. Basically, you can go down to any bridge in the Keys and see people with not Orvis tackle fishing for gray snapper. I would say that there used to be, I would say, also Spanish mackerel, but the water quality I don't think allows people to catch them as much on the bridges as it used to be.

MR. FEX: I would have to put Spanish mackerel in that same category, and I would probably rate it at about a 3, because it's pretty important at this time of year for the local inshore fishermen that go off the shoals and catch them.

DR. REICHERT: Thank you.

DR. SEDBERRY: I was also wondering about lane snapper and white grunt in the Florida Keys, if they might also be subsistence species. I know they are in the Caribbean.

DR. REICHERT: Anyone else to that point? Do we agree or disagree?

MR. CARMICHAEL: Do you think 2 or 3 for the lane and white grunt?

MR. JOHNSON: Probably 3 for the lane and the white grunt.

DR. CROSSON: How about for the first two that I mentioned? How about for yellowtail snapper and hogfish?

MR. LAKS: Yellowtail, I really don't think. Most of the smaller ones that you would catch on a small boat or on a bridge, they're going to probably not be keepers. Hogfish, I really don't know a whole lot about, but you might have some people that can snorkel and catch them. I don't think there's really a rod-and-reel land-based fishery for hogfish, at least that I've seen.

DR. REICHERT: All right. I think that's a good start. Any other comments? Let's make those numbers there, and remember we can always make adjustments there, but I think this is a good start. Let's move to the non-catch value.

MR. CARMICHAEL: This one now has everything as a 2, and so I think sort of the same thing. If we can just think of some you think really have some value and crank them up. In this case, think if there are some that you think really should be maybe scored lower.

DR. REICHERT: Yes, and the one that I thought of was goliath grouper. I think that should have a higher score than 2. I think that's one of the species on this list that may have a non-catch value, particularly in Florida. I see Luiz nod. Are there any other species that we have a significant non-catch value or species that we should lower the value relative to the non-catch value?

DR. CROSSON: Anything that's an extremely deepwater species. Like wreckfish is going to be pretty meaningless, I think, in terms of non-consumptive value.

DR. REICHERT: That's a good point. You recommend to lower those scores?

DR. CROSSON: Yes, I would certainly lower them all the way down, pretty much. I'm not going to say it has no value outside of consumption. That might be a bit risky, but wreckfish and snowy and anything that's caught in 1,000 feet or 2,000 feet of water is not going to have much non-consumptive value, other than I guess occasionally people get a warm feeling in their hearts thinking about them.

DR. REICHERT: Yes, and that's the point I was going to make. Non-value is also the value of just knowing that that species is there.

DR. SERCHUK: I had a question. I know that the sheet has been filled in with all 2's, but it could have been filled in with all zeroes as well, because I look at these, and my reading of the non-catch value is it has a value that's unrelated to any of the other factors in this that people may say, look, we want this protected, because we feel it has a place in the ecosystem.

In that sense, I liken it to charismatic species, whales and so on and so forth, where people will have a willingness to pay. If you went to a willingness to pay approach, they would basically say, yes, we're willing to pay that, in the sense of a non-catch value, not related to recreational landings or revenues and not related to commercial, but it has some other thing.

I am just wondering why you put all 2's in rather than all zeroes and then just put values in that we do feel that have a non-catch value. That's just a question. I am not -- I understand why 2's.

It makes everything equal, but I am just wondering, does it really go to the idea of what a non-catch value is?

MR. CARMICHAEL: I think it's just sort of illustrating different ways of going about this. If we scored everything as a 2 or everything as a zero, relatively, they're exactly the same. As we get into changing things, yes, I think there is some issue there. If you guys think it's better to score each of these as starting with a zero and then crank them up, then we can do that. Do you think that's a better approach?

DR. CROSSON: I don't care if it's a zero or a 1. The idea that something has some general value in people knowing that it exists, then, yes, you start everything kind of equal. I don't think there's any species on here that everybody hates and would rather see exterminated, but I do think you're going to see -- I do think you also need to look on this list. I'm not much of a snorkeler or a scuba guy, but some of these things are probably decorative things that people look at when they're out there on the reef, and if some of those species are on this list, then they're probably things that should be a little bit above the other ones.

MR. LAKS: I think he's right with the more ornamental fish, but you have to realize too that divers will take pictures of a school of kingfish or anything else, if you have a photography business, or there's photo contests and all kinds of stuff, and so I would say, besides really the deep, deep water fish, somebody is enjoying them somehow.

MR. CARMICHAEL: Which is kind of, perhaps, another reason to say these are 2's instead of zeroes as subsistence. If no one at all is subsiding, then that makes sense, in terms of when you total up the scores for a species, versus putting this at 2, where it says every fish has some non-catch value. We care about this fish at some level, even if we didn't catch any of them. If that's the way we feel, then they probably all should start with some value.

If you read what's in the box about non-catch value, does snowy grouper really count as a 1, just because, if you didn't catch it, you wouldn't care as much? Do you think that makes it less important than say any of the other fish that are in there? Does red snapper, because it has such great interest, count maybe a little bit higher here? I think what I sense, from dealing with issues in the councils, that seems to have quite an amount of value that exceeds the level of catch and certainly the level of people that participate in catching it.

DR. REICHERT: Thank you, John. Is anyone against adding some value to red snapper? Then, circling back to the deepwater species, would we agree that those are the species that, in terms of non-catch value, may have a somewhat lower score than the average, because, as you said, people don't account for them and they are not photographed, maybe with the exception of a few deepwater divers? Those would be tilefish and some of the other deepwater species, but we can look at the life history table for that.

MR. CARMICHAEL: You have wreckfish, warsaw, tilefish, snowy grouper, blueline tilefish. Are there others that you think you would put in that?

MR. LAKS: Speckled hind.

MR. CARMICHAEL: Speckled hind, silk snapper, red hind? What else have we got? Scamp.

DR. ERRIGO: Just to throw this out there, we have put a lot of work into trying to protect speckled hind and warsaw grouper, and there is no fishery for either of those species in the South Atlantic. It seems odd to reduce their non-catch value to 1 when we're putting a lot of effort into protecting them.

DR. REICHERT: That's true for warsaw and speckled hind. Any thoughts on that?

MR. LAKS: There is a state water fishery for those fish in South Florida.

DR. ERRIGO: There is also a federal fishery for them in the Gulf, but, here, we were looking at closed areas and all of that.

DR. BUCKEL: I guess you could think of this as reducing those to 1, or, if 1 is the baseline for everybody, there is a group that wants to just know that there is marine conservation going on. Then they all get the 1, and then you're adding 1 to the fish that folks can scuba dive and take pictures of and so on, or these could all stay 2's and we add 1 to all the ones that they could scuba dive and you get to 3. Either way is fine with me, but I think I would like to see the language say, okay, either it's everybody gets a 1 right off the start, because it's an ocean fish and there is an effort in the country where folks -- They know nothing about what's out there, but they just want to know that things are protected, and so everybody would start off with the same either 1 or 2, and then we build on top of that. That would be my vote.

DR. BARBIERI: In the case of the warsaw and the speckled hind, I think it's more a question of the stock being declared overfished and undergoing overfishing and us not be able to really conduct a quantitative stock assessment or change the stock status, and so it's an issue, perhaps related to what Fred brought up earlier in terms of the council's priority for conservation measures and rebuilding those stocks.

DR. SERCHUK: Sorry to be a bear about this, Chair, but I think we have to look at these categories and the ranges that have been given to these categories in relationship to the ranges that have been given to other categories. I understand we can start off with a baseline, and we can put everything at zero or we could put everything at 1 or we could put everything at 2.

This is a category that has a range from zero to 5. Some have smaller ranges. Some categories have smaller ranges, and so, if you think that this category -- If somebody felt that this category, in the national thing, should carry at least five points, in their mind, for those things that people felt really that there was a public understanding of its non-catch value, as a maximum, and I feel we're tippy-toeing around it.

Maybe it's just because we're just going through the exercise, and I understand that, but there should be some differences, in our minds, about a category that can get five points as a maximum as to a category that can get ten points as to a category that can only get two points, and I think we have to bring that to bear, because they all contribute to a composite score at the end. I don't have the answer, but I think it's important to realize that we've been given different bins, and the different bins have different ranges, and somebody has made a decision that that seems to make sense to them, and so I think we need to keep that in mind. Thank you.

DR. REICHERT: To that point, in addition to that, there is the percent importance, and so that's where some of that discussion can also take place, in terms of the importance of that range, because it may not make a difference whether you have a zero to ten or a zero to five score, because that comes into play in the relative importance. I understand where you're coming from, but there is a way to address your concern, and I think John put up the table there.

MR. CARMICHAEL: I think, when we get to this part, where we can rank them, looking at that max score would be important, because clearly you're multiplying that by this, and so one that only goes to one versus one that goes to five or ten will have to be viewed differently. We are hopefully trying to balance these to get what we think is appropriate weighting of all the different factors, and you really can't do that unless you know how much its maximum value is, and so we can fill this in so you can see that as we go through this ranking, when we get there, and I think that would be really helpful.

MS. LANGE: My concern on this is if, you give a category a large number, like 10, does that imply that we have a more refined idea of what the value should be? How is a 3 in a scale of ten different from a 1 in a scale of five? To me, it implies that you've got more precision that you're assigning to a particular category if you're going to be able to break it into ten choices rather than just two, and I'm wondering if that's the intent or if that's appropriate.

DR. REICHERT: John or Erik, can you comment on that?

MR. CARMICHAEL: I agree. I think that is an observation you could take out of this, and that would be fair, and so, yes, how we deal with that, I don't know. Again, I think, when we deal with the relative rankings, we should take that into account. If we feel like ranking things from say 1 to 5 on this non-catch value is not right, then I don't see why we couldn't use 1 to 3. If we feel like that implies a level of precision, using 1 to 5, that we don't think is appropriate, then that's good. The subsistence, maybe you went the same way there, and you just said yes or no.

Maybe you feel like 1 to 5 is the kind of thing -- We kind of scaled a little bit of them in there, to say, well, yes or no or maybe, and perhaps a category of 3, but, then again, I think we run the risk of potentially even then are we kind of making too much of this, and maybe we should get through the exercise and see what sort of outcome we get. If we look at some and say, you know, that's really inappropriate for all of these fish, then maybe we go back and just make a global change on them, but I think without seeing sort of where -- Once you get all of these values in there and then we do that prioritization part, that weighting of all the different factors, I think some of this may come to light, and we'll decide what are the things we really need to burrow into.

DR. REICHERT: Erik? Erik has no further comments. He agrees. Thank you. Talking about the -- Again, we can come back to these tables, as John said, later. Non-catch value, we discussed a number of factors. We made some changes to the scoring. Unless anyone wants to bring a point up, we can move to the next point.

MR. COLLIER: I didn't really hear any scores on that one, and so if we could go through them.

DR. REICHERT: On which one?

MR. COLLIER: Any of the species.

DR. REICHERT: I thought we had actually filled those in. Goliath grouper, I suggested a 5.

MR. CARMICHAEL: There's a number of changes. I've got them here, and we're going to put these in.

DR. REICHERT: That's what I thought. John changed the ruler, and so that changes the scoring in that column. Robert, Kenny, Ira, any last-minute comments there? As I said, we can come back to this. All right. The next one on my list was the commercial and recreational importance, and so let's go to the commercial importance.

DR. ERRIGO: Commercial importance doesn't have a tab, although we can adjust the scores if you go to the stock scores calculations. There is a commercial fishery importance. Right now, it's calculated using ex-vessel value. We can look at the scorings and say, yes, that makes sense, but if you think something is out of place and doesn't belong or it has to be higher or lower, we can adjust that.

DR. REICHERT: My first question to the committee is if anyone has any concerns about using the ex-vessel value to rank the commercial fishery importance. Seeing none, let's move to the recreational importance, because that is a tab, and we are asked to provide some input. The recreational importance, there's a score in there, and that was based on the percent recreational catch, the log rescaled to maximum and then the average of Metric 1 and 2. Those are the numbers that are currently in that list. One of the things I am asking the committee is if in that list, in the current scoring, if there's anything that you see that you feel is appropriate, either too low or too high, and that was, again, in the input recreational importance tab in Attachment 4.

DR. SERCHUK: A question to Erik, and Scott can weigh in on this too, but I'm wondering, comparing recreational importance and commercial importance, from an economic point of view, that can be done in many different dimensions. You can have multiplier effects, and you can have community effects, and so on and so forth, and I'm just wondering, was that discussed on a national basis?

It may be something like landings of very large pelagic fish, tunas and dolphins and so on and so forth. The actual landed catch may not be very much, even if it's sold on a commercial basis, but there's a lot of revenue put into the catching of this, and I am just wondering whether those are aspects, in terms of that should be considered when we talk about importance.

DR. REICHERT: Scott, to that point, and then I will ask Erik or John to comment.

DR. CROSSON: I am looking at this, and you want to supply consumer surplus numbers to make comparisons to the ex-vessel values, but you don't have that for all of these species, and so that's where they're using this other formula. My natural response to your point would be, yes, economic impacts are of importance, and consumer surplus estimates are of importance, and I'm guessing we're going to have to hit that in the constituent demand tab, which is sort of the catch-all for addressing those things, right, because these are rankings of importance.

What I would think of is that if there's a species that you look at these landings, and it's not going to tell you that, on a per-species value, some of these species have a much higher consumer surplus

value than others, because people are much more willing to go offshore recreationally and catch them. It's also not going to tell you that particular suppliers of recreational trips, like headboats or something, are heavily dependent on some of these species, and then there's a lot of economic impacts that are going to spread out of those, because we know that when they started really ratcheting down the red snapper catch that there were very specific constituents to the council that were hurt, disproportionately, because their whole business models depended on that, and so I don't know. If we go in here and start fiddling with this particular tab, is this the right place to do it versus that other tab?

DR. REICHERT: That was one of the points that I was going to make. Let's keep the description of each of these factors in mind, that we're not muddling or combining values from one tab over another, and I think that's the point you were trying to make.

MR. FEX: I would question Number 10, the warsaw grouper. I don't know why that would be there, but I think vermilion should be higher on the recreational.

MR. CARMICHAEL: I think this is the tab to capture whatever you think are factors that make the fish important recreationally, and I think the discussion should be about why you think it deviates from what we have here. The starting point was just the amount of recreational catch. The issue with warsaw grouper is it has very low catch, but clearly a lot of what is reported as catch is reported in the recreational fishery.

Some of those fish are probably misidentified when they're landed and they're brought to shore. The MRFSS sampler sees them and says, oh, that's a warsaw grouper. The person might not have even meant to, or people might not even be aware of the regulations. Yes, this is one that comes up as important when you look at the catch, but that's where the expert judgment comes in and say, you know, this really isn't important and that is just an artifact of the regulations that are in place and just where the few that are landed show up, and maybe you drop that one down to like a zero and say it's not important at all. I see nodding for that. Do you think we should change warsaw to zero?

MR. FEX: Warsaw, I don't think it should be on there. I don't even know anybody that really catches it recreationally. That's another deepwater species. It would be right along with speckled hind, but vermilion is way more important than warsaw could ever be.

DR. NESSLAGE: Just a question. I assume these were MRIP weights, catch and weights, rather than numbers used? Sometimes, for some of these low-sampled species, the weight may be way off, and that may be throwing the importance value off. I'm just curious why that was chosen, weight versus numbers.

MR. CARMICHAEL: I would say the reason for that is because it's percent recreational catch, and so percent of the total, and so the fastest way to get the total is to use the commercial poundage. To get numbers and the equivalent, we would have either had to like take the numbers and use some recreational average weight or take some commercial average weight and use the numbers, and so I think it was just, as Erik said, this was sort of a fast-and-dirty approach. I think you're right in a lot of cases. If we have some that we think are rising up really high, but maybe it is a weight issue, we can go ahead and adjust those too.

MR. LAKS: Also, like with white grunt, I know it's important. It gets caught a lot, but nobody is going out and saying let's go hammer white grunts today. It's just not -- It ends up being a fish that's caught, and there's a lot caught, but, as far as importance -- Also, it's so hard to say, because with environmental factors -- Like, in the area I fish off of South Florida, like twenty years ago, king mackerel might have been much higher, because they were easier to catch. Now, for some reason, they're harder to catch and people don't want to do it.

It's really kind of difficult to really weight it on importance, because, for example, king mackerel are now coming back with the tournaments, and so that's a whole important sector that is now reemerging because there is more and more fish, and so, to take a long-term look at this, when there is such short-term changes, it's just a little hard to really get your hands around it.

MR. JOHNSON: In snowy grouper, one fish per vessel, it's just not -- I don't know anyone in the recreational sector that targets snowy grouper.

MR. CARMICHAEL: Ben says that he does, and so I will go back and catch up on Ira on the white grunt. You think that would be a 1? With a scale of zero to 5, where would you place that importance? A one?

MR. LAKS: I don't know if I would put it at a one, but it's important at the end of the day. It's not important at the beginning of the day. How about that?

MR. CARMICHAEL: A 2? At 3, you're kind of relatively important all day. A 5, I want to go get you first thing, right?

MR. LAKS: If it's an eight-year-old, it's a 5, but I could compromise on a 2 or a 3.

MR. CARMICHAEL: Maybe we should just sort of go down the list. I sorted them by what they're ranked now, and let's look at things that look really odd. We've got a couple here, but do folks agree like dolphin and cobia definitely belong at the top?

DR. REICHERT: I want to give Sherry a chance. Sherry, go ahead.

DR. S. LARKIN: Part of this discussion is based on trying to determine versus abundance or quantity. One way -- I liked when Fred was sort of talking about a litmus test and yes or no. You could look at those and look at studies that have tried to estimate the willingness to pay per fish. There's a group of those.

Now, you could debate about which study you like versus another study and how they rank, but there is sort of a set of literature where people have tried to estimate value for some of these and then some that they've never tried, and that would be one way of incorporating more value versus quantity.

DR. REICHERT: I have one question to that point. Where is that different from, for instance, constituent demand? I may be mixing things up, because I thought that those considerations were part of the constituent demand. The term "importance" may include a lot more than catches, which it basically reflects currently, I believe, more than other measures of importance, but maybe I am misunderstanding that.

MR. JOHNSON: Just going to that thought of what do my charter customers request, what do they want to catch when they call me up on the phone, and it's mahi and it's grouper. It used to be red snapper, but they all understand that they're closed, but that's the two caught. A lot of these species we catch, and they're very important, because it is part of the trip, but when you talk about when somebody calls and says, hey, we want to go catch mahi, that's probably the number one request I get year-round. Then grouper would be right behind that.

DR. SEDBERRY: Should we score those the highest and scale everything to that, do you think?

MR. JOHNSON: I'm sure every operator is different. There may be a charter boat someplace that the customers call up and want to go catch sea bass. I am just speaking of my clients. That's their two top fish.

MR. CARMICHAEL: All groupers or one in particular?

MR. JOHNSON: All groupers.

MR. CARMICHAEL: Would that mean you would put like a 5 on a snowy?

MR. JOHNSON: No, they understand they can't catch snowy, and so we're not going to run fifty-four miles to try to catch one fish.

MR. CARMICHAEL: So like red and gag would be the ones?

MR. JOHNSON: Red, gag, scamp. If it's a grouper, they know it's good to eat and that's what they want to catch.

MR. CARMICHAEL: So we could put red, gag, scamp, black. Do folks agree with that? Those are things that people assign a lot of importance to when they're wanting to choose what to go fishing for.

DR. BOREMAN: The comment about snowy grouper, even though they know they can't catch them, if they could catch them, would they want to go out and get them? I think that's the importance here. We are looking at what dictates assessment rankings, and so, if it's an important species recreationally, but right now it's prohibited from being caught, someday you're going to reopen that fishery, and you can't reopen it without a benchmark assessment or something.

MR. JOHNSON: To John's point, snowy grouper are very unique. They're a deepwater species. Most recreational anglers that fish for them are using electric reels. On my boat, I'm not going to provide them with that. They're going to have to hand-crank it, and so, no, they don't want to do it. I'm just being serious, but this points to the differences between a charter boat operator and a recreational fisherman. There's a huge difference, and I don't know how you account for that in this.

MR. LAKS: I would definitely say dolphin is right up there. People just -- If you catch a twenty-one-inch dolphin, they're jumping around, but, to Robert's point about groupers being high, for a fishery in South Florida, I don't really encounter that many groupers. They're closed the time of

year they're around me, and so, for me, mutton snapper and yellowtail would be way higher than groupers would be.

DR. REICHERT: I would argue that's an example of those regional differences.

DR. CROSSON: I know this is recreational importance and not recreational value, but, the further offshore you have to go for travel costs, the further you have to pull this thing up from the bottom, from a thousand-plus feet of water, there's going to be that cost that's going to be rising, and that's going to subtract away from the value of that particular fish, and people are going to be less willing to go out there and get it.

Like you said, if you have to go fifty-four miles offshore, it really better be worth it when you're cranking that fish all the way up, and I doubt a snowy is for most folks. That is another factor, is that recreational fishermen do respond to travel costs and other types of costs. It has to balance into their equation.

DR. ERRIGO: There seems to be confusion about recreational importance versus constituent demand. Recreational importance is a lot like commercial importance, in which, if we had value, we would use that. We would have used that instead of landings to calculate these metrics. Constituent demand is a little different. If you read what it says here, it has to do with demand for excellence in stock assessment. This might include stocks in a catch share program or choke stocks that limit access to other stocks, stocks with controversy over the existing assessment, stocks with high sociocultural fishery importance to the region, or simply stocks for which regional or national constituents have come to expect high-quality and timely stock assessments. Constituent demand has more to do with demand for assessments, timely assessments. They want more assessments and they want better assessments and not that the constituent demand for fishing.

DR. REICHERT: Thank you for that clarification. That's very important. Thank you. That means that the desirability is part of the recreational importance, if I understand correctly, and so thank you for that clarification.

DR. SERCHUK: I had a question about the commercial fishery importance, which we have gone past, but I want to bring it up now. I don't know where the numbers that we have came from. I presume they came from the NMFS national database, but I am just wondering what years were covered. Is it five years or three years or two years or ten years? I am also worried about it because, in some cases, we have imposed on fisheries that at one time had a very high commercial importance very stringent regulations.

That would basically, in some cases, prohibit the landing of these fish, or very much of the landings of these fish. They have no ACL, and so many of the fish are discarded. They don't appear, but what I'm suggesting is I'm finding that, just looking at landings by themselves, particularly when fish, in some cases, are highly-valued commercial fisheries which have now been put under regulatory control because they want to see these stocks rebuilt to their former high abundance levels. So we can enjoy the benefits of that, they have very low landings now, very low -- They may have high catches, but they have low landings, and I am just wondering how that gets factored into the commercial importance.

DR. REICHERT: Mike or John or Erik, can you comment on that?

DR. ERRIGO: According to how this is set up, the only thing that goes into it is the landings and the price per pound.

DR. REICHERT: But over what period?

DR. ERRIGO: The last five years, average of the last five years.

DR. REICHERT: Again, although that's not a tab, we can certainly express that concern, in terms of how those values came about.

DR. WILLIAMS: The other thing to add to this, and I guess it relates a little bit to what Fred is saying, is the intention is actually to update this every year, and so stock statuses would be updated, because that goes into some of the factor calculations, and average landings. All these formulas, in theory, will be updated every year. In that sense, it will be timely.

DR. SERCHUK: That's exactly what I am concerned about. If you have a species, and let's take red snapper, for example, in which your commercial catches are not allowed or allowed at a very low level, that's going to take on no importance in the NMFS database after five years, none at all, and I am worried about that. I am also worried about that there seems to be a huge discard issue with that as well. Those discards don't count as landings, and so I'm just trying to think of is there another way we can approach the problem, that's all, in those cases where maybe the catches themselves are not reflective of the commercial fishery importance, that's all.

DR. BARBIERI: For discussion purposes to that point, Mr. Chairman, and, Fred, I think that, in that case, yes. I agree with you that, from a tonnage or biomass landed, it would not be important, but when you integrate all the other factors, the recreational value, and the stakeholder demand, I bet that it would go through the roof and rise to the top.

DR. SERCHUK: That may be. I am not discounting that, but I think we ought to go factor-by-factor for the description. It's saying, all other things being equal, is the commercial importance of Species X represented by landings? In my feeling, it isn't. There can be cases where there is a high commercial importance, but, right now, because it's under severe management restrictions, the revenues, the ex-vessel revenues, do not reflect the commercial importance. That's all I'm asking. Sure, it could be counted other ways.

DR. REICHERT: I agree, and perhaps we can, at some point, discuss what other options are available. An easy one is to look at those species that are currently under a moratorium and adjust that score, and you're making an absolute valid point in terms of red snapper, because I think that would be a commercially-important species.

MR. CARMICHAEL: So we're back to our recreational importance and constituent demand. I thought the issue of snowy grouper was interesting, because it shed light on the difference in demand versus importance and trying to define how you score the two of them. I think there's probably cases where recreational importance is high and demand is going to be high.

I thought John Boreman's question about snowy was good, and it's something to think about. There are things that, due to regulations, they're not maybe seemingly that important to folks out

on the water, but maybe, in the back of their minds, they are important, and that would be one that I think could be scored high for both, and so I don't think I mind scoring that one high so much. I think let's try to get back on these, and I know we haven't dealt with the constituent demand, but I think that's a good place to go after we get through this, because we're starting to get some understanding of what that might mean.

DR. REICHERT: I think it's important, and that's why I asked you to please contribute to the report. I think it's important that, if we change those values, that in the report we indicate the factors of why we thought it was important to change these, and that's where Fred and others members' points, we can highlight those in the report, and so please keep that in that back of your mind when we start writing the report.

MR. LAKS: I have just a little question on when you're talking about the demand from the public for stock assessments, and I worry that gets into a dog chasing its tail situation. Take mutton snapper. Two years ago, there would be no demand for a stock assessment in South Florida. Today, there's a super high demand, and so I just don't understand how you're going to go from no demand to a high demand. That seems an unfair weight. Your demand is always going to be based on your last stock assessment.

DR. REICHERT: That's a good point, and when we start talking about constituent demand and some of the other factors, let's keep that in the back of our minds. I want to go back to that recreational table and the values we currently have there and see if we agree with those scores or with those changes and if there's any others that we need to make. Again, we can come back to this. As Erik said, this will be updated regularly.

My question is would those updates involve input from the experts again or the SSC again? Would this come back to us on a regular basis so we can make adjustments when necessary? Erik is nodding his head, and so this is not the last time we will see this or we will be able to comment on that. Does anyone have a burning desire to change any of these numbers as they are currently on the list?

DR. S. LARKIN: No burning desire, first off, but I am still a little confused. We have three metrics, all based on volume, but then a description that says direct measures of recreational value for each stock may not be available, and so where is the metric that captures if those values are available?

DR. REICHERT: Are or are not available?

DR. S. LARKIN: Are.

DR. ERRIGO: I think that, unless they're available for all stocks, because these are relative measures, then you can't use it at all. I think that's why they weren't used.

DR. S. LARKIN: I guess I would argue that doing any type of research is expensive, and if NOAA has invested to determine the economic value of some of these stocks, those studies inherently separate those with value from those that don't, and so I don't think you would see estimates of recreational value for all of these. To discount the ones that are available because we don't have them on all seems kind of strange.

MR. CARMICHAEL: I think that could be a consideration you bring to this new column, just as we've heard from the fishermen about what their constituents demand, what people ask for and what they call and say, hey, I want to go fishing for this. Are there stocks that you're aware of that they've done this value that you think carry more value and carry a value that's greater than where they currently rank in this listing now? Then let's throw them out there on the table and see what folks think about scoring them.

DR. CROSSON: Not that I am volunteering to do this, but a lot of those values would be in the amendments. Whenever we do amendments for these different species, usually we do provide the values, whether they're from the NMFS economists or whether they're from outside researchers, whatever is considered to have passed some sort of peer review and is being used.

Then those numbers could be at least listed next to yours, so you could see which species are at sixty or seventy-dollars per fish or something like that for consumer surplus estimates, keeping in mind that there are diminishing returns when you keep catching additional fish for the same angler, and so I don't think you need to go down that road, but at least list some of those values that were very commonly being used by the council for amendments.

DR. REICHERT: Thank you. I think that's a -- Do you want to make that a recommendation or does the committee want to make that a recommendation?

DR. AHRENS: I think that's a great idea. I think it would be nice to tie that in with some of the network analysis that's done, so that when you have species complexes -- If you have an evaluation for one species tied into the network analysis, to say this is in this complex and, therefore, it is possible that these will all have the same value associated with it. Can I ask for one point of clarification, Mr. Chairman?

DR. REICHERT: Absolutely.

DR. AHRENS: Could I get a rationale behind Metric Number 1 and why that is being used as a relative ranking and what the thinking behind that was?

MR. CARMICHAEL: I will address that one first. First of all, the metrics that are being used, it says it's the average of Metric 1 and Metric 2. Metric 1 is the percent recreational catch weight times five.

DR. AHRENS: I am just curious kind of what's that intending. That's relative to a commercial catch as well?

MR. CARMICHAEL: It's relative to the total. If a stock is 50/50, it's going to be lower than if a stock is -- Say dolphin, it's primarily recreational harvested, and so you see it as a 4, and you see cobia as a 4, and so those are ones that are pushing nearly all recreational landings. If you go down to the bottom, you've got wreckfish with no recreational landings, and it comes out as a zero, and so it's just way of getting it to this range of 1 to 5.

DR. REICHERT: It's a relative measure.

DR. SEDBERRY: The percent is the percent of the total catch that is the recreational component?

MR. CARMICHAEL: Yes. As you can see, if you want to scroll over, you can see it's in the data tab. It shows you where it's coming from and how it's calculated. I think the idea of putting if we know something about value of fish in there is fine, but I come back to going forward with the scorings and what we look at now.

If we don't use something like that here to adjust some of these scorings, then that's not really adding anything to the exercise. It's adding some information, but I would rather see the information that's used to adjust the scores that could be a good justification for a fish and why you think it should have a higher score, unless we have a sense that some of those values are such that it means some of these fish here may be in the middle and should be higher or lower. Then just adding that information to the table -- It's some more data, but it's data that aren't being used, and so I'm not sure really what it does.

DR. REICHERT: Any other comments on this tab, the recreational importance?

MR. JOHNSON: I am looking at this, I am looking at the list here, and I see knobbed porgy and vermilion snapper down below white grunt and lane snapper, and I am just sort of questioning that. I mean, you're talking about vermilion are a staple for most of the east coast and catch, whereas knobbed porgy, I'm not even sure who catches those. Some of these species like lane snapper are more of a South Florida fish. That's just an observation.

DR. REICHERT: My question to you is do you suggest we give vermilion snapper a higher score?

MR. JOHNSON: Either that or give knobbed porgy a lower one.

DR. REICHERT: Knobbed porgy is between gag and red grouper, and so do we collectively feel that -- I would be more comfortable giving that a lower score and then perhaps then vermilion a higher score, or perhaps both. Jeff, to that point.

DR. BUCKEL: The question was we had making vermilion higher, but we never gave it a value, and so I agree with that, that it needs to be higher. That would be my vote. In North Carolina, knobbed porgy are definitely important, and so I wouldn't, at least from the North Carolina perspective, necessarily lower them, but I like Robert's idea of using the groups that are caught together. At least in North Carolina, and others can weigh in for their area, but the vermilion snapper tend to be caught with gray triggerfish, and so I would put them in that same value as gray triggerfish, somewhere in that 3.5 range, or 3.4, whatever it is. That is North Carolina, and so others could weigh in on that, but that would be my vote, for them to be moved up into that 3 or three-and-a-half range.

DR. REICHERT: I've got Ira and then Robert, and then I really think we should take a brief break. Then we can continue the discussion after the break.

MR. LAKS: I think the difficulty in this, again, unfortunately is the effort. We don't think knobbed porgy is that big of a deal, but everybody who goes out on a weekend in their little boat

with a squid rig in South Florida, which is a tremendous amount of people, is catching a knobbed porgy. Every headboat in the Keys is catching knobbed porgies.

It's just hard to really, without knowing how much effort is really being put into these fish -- Like, in South Florida, vermilion are -- I fish for them, at times, on a charter, but the conditions have to be perfect for me to fish for them, and so I say I encounter a lot more knobbed porgies than I do vermilions on charters, just because, the way we fish, they're available to me, and there are so many people catching them, because they're easy to catch with a little piece of squid, where vermilions are much harder to catch in our area.

MR. JOHNSON: I am just looking at what people are going after, what's important to them, and no one really starts a trip out, and I understand the regional differences, but no one really starts a trip out wanting to target or go catch knobbed porgy. It's just something that happens along the way. I look at a lot of these species, and even a pure recreational angler and not a charter boat operator, they're going to go fishing and everybody wants to catch the big guy.

That's really what they are fishing for. That's why they left. That's why they went. They keep these other fish, yes, because they caught them, and another question I do have is we have some of these species -- I think knobbed porgy is part of the porgy complex, isn't it? How do we handle that? I mean, it's part of the complex and it's not even a stand-alone -- Almaco jack, they're part of the jack complex.

MR. CARMICHAEL: If they're in the complex, they could be something that becomes an indicator, maybe, or maybe they become one of the ones that we try to get an assessment of within that complex. It could affect our thoughts on it.

DR. REICHERT: With that, let's take a ten-minute break, and let's come back here at 3:20. Then we will continue.

(Whereupon, a recess was taken.)

DR. REICHERT: All right. We were discussing the recreational importance. Before the break, I was asking if anyone had any additional comments. We had a few, and so I am going to repeat that question before we move on to the next category.

DR. ERRIGO: I just wanted to ask about a couple of species. We decided, for warsaw grouper, to set that at zero. I wanted to ask about a couple of other ones related, like speckled hind and goliath. Do you think those should be also set to zero? I also wanted to ask about red snapper. Do you think that one should be set lower or higher, or should it just stay where it is?

DR. REICHERT: Let's do it species-by-species. The first species you mentioned was speckled hind.

DR. ERRIGO: I was wondering if we might set that at zero like warsaw, since it's pretty much permanently closed here.

DR. REICHERT: I see nods.

DR. BUCKEL: Someone mentioned before that these fish do come to the dock, because of misidentification, and so somebody is taking them home to eat them, and I saw a warsaw this summer at the dock. Someone thought it was a snowy, and so I guess that's an argument against putting it at zero, because they are still being brought in for consumption by recreational folks.

DR. ERRIGO: If it's mistaken for something else, wouldn't the recreational importance go to whatever species they thought they were landing?

DR. REICHERT: I see agreement there. The next species was goliath grouper, and the score currently is --

DR. ERRIGO: The current score is 2.5. Oddly, it got a 5 in Metric 1 and a zero in Metric 2, and I don't know how that happened, but it did.

SSC MEMBER: There is a value of 1 put in for recreational in the data. If you go to the data tab, it's got zero for commercial and 1 for recreational.

MR. HARTIG: Recreationally, in South Florida, there's a huge catch-and-release fishery for goliath grouper. There is people who capitalize on that and that's what they do. They strictly target goliath groupers. You can go on the internet and see videos of people catching goliath grouper all day in South Florida. It is important as a catch-and-release species, and so I would leave it at 2.5.

DR. BARBIERI: To that point, Mr. Chairman. There are charter captains that advertise specifically for the catch-and-release of goliath in South Florida.

DR. CROSSON: I'm a little bit confused though. That got a 5 in Metric 1. If Metric 1 is recreational catch in weight, and it's a catch-and-release fishery, how did that -- I don't understand how that got a weight if it's a catch-and-release fishery.

DR. ERRIGO: It's the percentage of the catch that is recreational to the total catch. If you look in the data tab, the recreational catch is 1 and the commercial catch is zero, and so 100 percent of the catch is recreational for the last five years.

DR. SERCHUK: Let's try to be very specific about our words, because I'm hearing "catch" and I'm hearing "landings", and they are two different metrics.

DR. ERRIGO: It's actually landings. It says catch here in the tab, but it's actually landings that are being used. Red snapper, are we good with where red snapper is? It actually falls out pretty high, at a 3.9, but do you think it should be higher or lower or stay there? It seems to have a lot of importance to people, even though they're not allowed to catch very many of them, or none at all. That's why I wanted to ask.

DR. REICHERT: I would argue that that would have a very high -- It's 3.9, and I would argue that it would probably be a little higher than that. Should we leave it at 3.9 for now?

DR. BELCHER: Jeff and I are just kind of having the same question. How do you have one that's a prohibited species that has such a low rank and one that's a prohibited species but has a high rank?

DR. ERRIGO: It has to do with the importance to the fishing community. Warsaw and speckled hind are prohibited, but nobody really makes a lot of noise about them.

DR. BELCHER: I am thinking more of the goliath and the red snapper, because you've got a fishery in Florida that people obviously -- I am still trying to wrap my head around catch and release on a prohibited species, or being out there advertising that you're catching and releasing something that you shouldn't have, but the idea that you've got goliath and then you've got red snapper, which both of them obviously have very high intrinsic value within that recreational, but yet they're on opposite ends.

MR. CARMICHAEL: I think, with goliath, you can fish for them, but you can't possess them. There's a lot of things you can fish for, but you can't possess. It's kind of different than in some cases where they actually say that you can't even fish for those, but that's kind of rare, and so you could have the catch-and-release fishery for goliath, as has been mentioned.

DR. BELCHER: That was my misunderstanding then, because I was assuming they were prohibited. I know they can't be brought on the boat and they have to be handled in the water, and so I just didn't realize there was still a targeted fishery for them.

DR. ERRIGO: Another thing to consider is so goliath is a very regional fishery, whereas red snapper, although the concentration is fairly regional, it's a lot more widespread than goliath is. The spread is as far north as North Carolina, whereas goliath is very southern Florida centric, and so that might explain the difference in the metric rankings.

DR. SERCHUK: Can you explain to me again, just so I'm clear -- There are three metrics here. One is percent recreational catch, and is that catch or landings?

DR. ERRIGO: It is landings. This thing says catch, but it's actually landings in weight.

DR. SERCHUK: Then this Metric 2 is the log landings rescaled, right? We're talking about landings, but I am finding a dissonance here when we're talking about species in which you cannot land them, and they must have a value of zero.

MR. CARMICHAEL: I think the issue with goliath that we're stumbling over is kind of like warsaw and speckled hind, where some people break the rules. Even though you can't legally land them, there are some that are landed, and it could come down to whether it was -- I don't remember, Erik, but is it Type A or did you use Type A and B1? If you used Type A and B1, which would be the normal MRIP landings, then you would have some that maybe people said they released dead, and so they would show up in there. I think what we're dealing with is incredibly small numbers of fish, when we're talking about whether it's goliath, speckled hind, or warsaw, and a lot of it is just a matter of some noise within the regulations.

DR. SERCHUK: Would I be correct then, under either of those circumstances, that it would have a low numerical score, and that would -- Isn't the question that we're thinking about now that that

would not be, in the minds of more than a few people, representative of their recreational importance? We are using a metric, as I am getting a feeling, that in some cases belies -- That is, it doesn't give fair representation to the recreational importance that people give to these species, and I'm feeling that we're between a rock and a hard place here, because we really don't like the metric, because it's not reflective of that, and, if we use the metric, we get a score that doesn't make sense to us.

MR. CARMICHAEL: To that point, and just to sort of sum up the net result of our prior discussions, we do have these metrics, and then we started filling here with the new, as people suggested changes. What I did was all the things that we changed, I input the new, and then the ones that we didn't tweak any, I just copied over the existing value that they had and resorted them and then just broke this up into sort of three groups of high importance, moderate importance, and lower importance.

This was just basically broke in two, and this was 3.6, for no really good reason, but just because it looked like a good place to put the line, and the other one is the top fish, which is roughly 3.9 to 5, which is the top. I think what we have, Fred, is we have a metric. We know, for various reasons, it's not perfect. It's landings and it's catch and it's discards. It's some fish that are caught even though they're not supposed to be. It's percentage of commercial versus recreational, and so there's a lot of things going on within there.

The idea here was to say, okay, let's look and see where that metric agrees with our gut instinct and where it doesn't, and we have now manually tweaked things where we think it doesn't agree with our gut instinct. I think, at the end of the day, sort of what we're looking for is does this look like the appropriate ranking, at least within these general categories of what we think recreational importance overall should be.

DR. SHAROV: I think the general purpose of coming up with this approach was to develop a maximum independent algorithm which would just take this methodology and calculate the score and those scores would be used as advice. Once we start adjusting this for these species and other species, then you individually are deviating from or violating your rule that you are creating to actually develop a sort of independent system.

Clearly, if there is some calculation or qualification mistakes, those should be corrected, but I think that the better place to make those corrections is in the weighting factor or in your relative factor scores. That's where you would individually give a higher weight for recreational importance or commercial importance to particular species, where you feel that the red snapper should be given a higher weight or warsaw grouper should be given a lower weight. In that case, you maintain your sort of basic methodology of calculation, but then you allow for a specific place, and that's where the weighting factor would be -- Where you make those adjustments based on your individual combined knowledge or expertise. That's just as an idea.

MR. CARMICHAEL: Were you saying weighting factors by species? I am not sure that I was following.

DR. SHAROV: Yes, because you calculate your factor score, which is 1 to 5. In this case, for example, your score is an average of the -- The Metric 3 is an average of the other two, and I am not sure whether, in the end, that all three of them are being used, but, in the end, you're combining

about a dozen different metrics, and each of them is given a weight of relative importance. You have it currently fixed, but you may have it individually adjusted, and I think that certainly should be done. That's where your subjectivity enters in, in the calculation, but that subjectivity would be well documented of why you believe that we need to raise it or reduce the weight for each particular factor.

MR. CARMICHAEL: Yes, and we will do that. We have a weighting per factor that we can adjust, and, in terms of this recreational importance, and for all of these tabs, actually, and a number of them have a couple of alternatives laid out there that were explored. Remember those were the ideas that were put forth as starting points when we looked at this at the last meeting.

Only one would be used, and so if we're happy with what we've done here today in recreational importance, which was to start with something and then refine it, then that's what the metric would then go in for recreational importance. It would be the value in this new column, and then that is how each one of these species would rank in terms of their recreational importance. We definitely don't intend to use all of them, because then that starts to completely muddle everything, absolutely, and I think the same goes for any of these.

That's the whole idea that this was expert judgment, but, in putting this together, our thought was that it's really hard to give people a blank column and say start filling in numbers. A lot of times, it's easier to have something to work from, and so we felt like at least starting with this idea of how many of these fish are caught recreationally? If it's 100 percent recreationally, maybe that means something, versus something that's 99 percent commercial.

This was just a starting point, and I think we're okay. There was no -- I don't think there was any logic or any process that we're violating by using this approach. It's pretty wide open to us to figure out how best to get this expert judgment, and so, if we have some more thoughts on how to do this, then I think, yes, we should try to pursue them. If we think the listing looks about right, and certainly based on the three guys over there from our APs who think this pretty well sums it up right good, then maybe we're at a good place, in terms of the recreational importance.

DR. BUCKEL: Just a couple of species that while we have the experts here that I want to get their opinion on. Right now, snowy grouper is ranked above black sea bass and vermilion and gray trigger. Does that need to be changed? Then the other one is blueline tilefish is greater than knobbed porgy and red porgy and almaco jack.

MR. JOHNSON: I'm struggling with snowy grouper. I don't understand how we would rank that above black sea bass or vermilion snapper or gray triggerfish or any of those. It's a specialized, deepwater fishery. The effort is just not there, except for the extreme southern and northern parts.

MR. CARMICHAEL: If I put it as a 3, it moves down into this area. Does that seem better, or do you want to go 2.5? Do you think it belongs down here with the 2's?

MR. JOHNSON: Just going from where I fish, red porgy would be above snowy grouper or blueline tilefish. Almaco jack would be above snowy grouper.

MR. LAKS: I really can't disagree with that. The only thing I would say is that it's such a niche fishery, and there's so much money put into it. It's crystal electric reels and people really, in South

Florida, who spend a lot of time in the deep water, in the Keys and stuff. It's a big charter thing, but, again, I think you're biting at the regional differences here.

MR. CARMICHAEL: I think we could capture some of that with the constituent demand, perhaps, where we say it's not that big of a player in the fishery, but there is a large amount of interest in that fish. I think, when we look at the constituent demand, that might be a good place to bring some of these sort of other factors that we don't think have really been captured in some of these other metrics.

DR. AHRENS: It seems that kind of the recent discussion is around more of should we be discussing recreational landings importance, in which case let's leave the metric as it was, and then move on to the constituent demand and the non-catch value tabs and do some rankings there, in terms of capturing the subtleties of the discussion that's gone on, so that we have a more repeatable kind of exercise, if we're going to revisit this, and then go back to the main tab, where we're talking about the relative weight we're assigning to each of those categories, and I think that might be a little more fruitful, so we have a more repeatable exercise in the end, and so try and describe what we've done here, in terms of the regional importance and non-catch values onto those tabs and leave kind of the recreational landings importance tab as a repeatable metric.

DR. NESSLAGE: This is a very specific question about the two tilefish species that probably reflects my inability to understand this actual metric, or these two metrics. Blueline is 5.1, is that right, and golden is 4.1, but golden has a much, much lower recreational catch. It's much tinier, in magnitude and in proportion, and so I'm not sure how they're coming out so close. I don't know if that was just a mistake in the Excel spreadsheet, which I've been trying to figure it out, or if it's a problem with the way the metric is working. Do you see what I'm saying? If you go to the landings, and there was another handout on the actual landings, and, if you look at blueline versus golden, they're totally different.

DR. ERRIGO: That column that is great is the log of the average of the landings for the last five years. That is log scale.

MR. CARMICHAEL: If you look at Metric 1, which is just the percent, you see that blueline ends up at 1.7 and tilefish ends up at 0.1, and so I think that does capture the big difference in the percentages.

DR. REICHERT: Does that clarify stuff? Blueline tilefish is in that midrange, and then golden tilefish is in the orange, the lower range, which I think is appropriate. As I said before, we have another opportunity. This will be regularly updated, and so I suggest to go to the next factor. In my list, that was the constituent demand/choke stock. Since we've talked about that quite a bit, and Mike has clarified that, let's go to that one.

I made a couple of suggestions there. These were all equally scored here, and so several of the species that I think should have a relatively high score are black sea bass, blueline tilefish, cobia, gray triggerfish, red grouper, and red snapper.

MR. CARMICHAEL: Relatively high or are you proposing 5's? Are you proposing high or relatively high, like a 4?

DR. REICHERT: 5's.

MR. CARMICHAEL: So it was black sea bass --

DR. REICHERT: Black sea bass a 5, blueline tilefish a 5, cobia a 5, and dolphin a 3. These are just my suggestions. Gray triggerfish is 5, red grouper is 4, red snapper is 5, speckled hind is 5, and tilefish is 5.

MR. CARMICHAEL: Let's do a few at a time and see if other people agree.

DR. REICHERT: Come on, John. Where are you?

SSC MEMBER: We have a different kind of Chair now, I see.

MR. CARMICHAEL: What do you think should be a 5, maybe? Let's start there.

DR. REICHERT: Sorry about that. Where are you? Gray triggerfish, red snapper, speckled hind, and tilefish. I can explain why I thought that.

MR. CARMICHAEL: I think you might need to, for everyone else.

DR. REICHERT: The way I understood it was this was the demand of the constituents for a stock assessment, whether or not it was important for the constituents to have excellence in stock assessments, and so that's why I put those numbers up.

MR. CARMICHAEL: This looks like it's more than that though. That's one of them, but then it talks about is it a choke stock or does it have sociocultural fishery values and things like that, and so I think there's more to being in there than just -- I think people would demand that, well, if you do an assessment, they want excellence in every assessment that's done.

DR. REICHERT: Okay.

MR. CARMICHAEL: For that, we could put everything on a 5, but maybe there is relative levels of excellence, perhaps, in an assessment. I think that's what we have to grapple with.

DR. REICHERT: Okay. Well, it's a starting point.

MR. CARMICHAEL: I guess I would say I don't think I'm a big fan of that language, constituent demand for excellence in a stock assessment, and maybe there is some regions where constituents are saying, yes, I'm okay with a not excellent assessment in that regard, but, for this one, I want an excellent assessment, but I don't feel that that's been the case in our region, and we have grappled with that very concept within the SEDAR program, since the very beginning, that there is an expectation that when you go down the path and do an assessment, there is an expectation of excellence. Whether the species has 10,000 pounds of landings or two-million pounds of landings, there is an expectation of excellence, and so I think that language is rather unfortunate, and I think, in our application, I would tend to say that's not really a good way to put things.

DR. REICHERT: To that point, I think one of the things I was looking also is at stocks with controversy over existing stock assessments, and I think that's where some of my ranking came into play.

DR. SERCHUK: I am looking at Erik and others. I dislike the term "choke stock". I dislike it for lots of reasons, because -- Well, I won't get into it, but my point is I don't see the linkage between wanting an assessment and a choke stock. I can tell you lots of examples of resources which have had a number of assessments that have passed peer review and gone through a process equivalent to the SEDAR process. The assessments have got the stamp of approval as meeting best scientific information available, and they indicated there is low abundance.

Because of the low abundance and they're caught as a bycatch, or they're in another fishery, they are considered choke stocks, and that really has nothing to do with the quality of the assessment. It has something to do with there is an economic consequence of fishing on complexes in which one species is relatively abundant, is caught with another species which is scarce or at very low abundance, and, when the species at low abundance is taken, its ACL is taken, a consequence analysis comes in. Either you have to move on to someplace else, you can't bring that species in, or the fishery is closed, but it has nothing to do with assessments, and I am perplexed how this choke species concept came into constituent demand for assessments. I really am. Can you offer any insight into that?

DR. WILLIAMS: I think that reason that comes in is that if a species is bycatch and it's holding back other fisheries that then there might be a demand to have more frequent updated assessments, and so remember that's kind of what this is getting at, is how often is that species going to show up on the assessment schedule, and, if it's constraining other fisheries, people will probably want that to show up more often, because, when it does finally rebuild, they want to be able to have access to those other fisheries as soon as possible, and so I think that's where that's coming from.

DR. SERCHUK: Thank you. That's helpful, but where I get concerned about this is when we start talking about ecosystem management and all species can't be at MSY, which is what we get drummed into our heads from the people that want ecosystem management. Wait a second. Magnuson can't work, because it requires all species to be built up at MSY, and that's impossible, for biological reasons, predator/prey interactions and competition and so on and so forth, which means, guess what? In the real world, some species are going to be at one level of abundance and some species are going to be at another level of abundance. Even if they were perfectly assessed, you're going to get into situations where, due to the vagaries of the interactions, some species are going to be at much higher abundance and some are going to be at low. That's what we call nature. It's going to happen.

Now, they should all have good assessments, but you might say the species that are at high abundance are too high and let's have an assessment on that. You could have a better fishery if they were all assessed at equal value, equal quality, and I am going to get off of my soapbox.

DR. WILLIAMS: Just to follow up on that, and I shouldn't enter too much into this debate, but a choke species could be viewed as one that is constraining another stock, and it's constraining it in a way that people suspect that there is potential for more catch. If there isn't, like you said, and if it's because of the inherent position in the ecosystem that it's never going to get any higher, then you might not call it a choke species then. It is what it is.

DR. SERCHUK: That's one of the reasons why NMFS has put a lot of money into things like selectivity studies and spatial studies, to find out whether there is seasonal differences, and so on and so forth, to give as much liberty, to take the more abundant species in those circumstances, as possible. There are things that could be done even under those circumstances, where you had perfect knowledge of both species. Thank you.

DR. REICHERT: Thank you. I would like to go back to the ranking.

DR. CROSSON: I would move king up to a 4, based on the importance of the tournaments that I think Ira brought up earlier.

DR. REICHERT: What species was that?

DR. CROSSON: King mackerel, just because the tournaments are huge. They're coast-wide, and there's a lot of money that flows through them, and so I think that's a big one. It's not a 5, but it's a 4.

DR. REICHERT: Thank you. Any species on there that you feel should have either a higher or a lower score there?

MR. LAKS: Again, I personally think it's just what you tell people that they're restricted in. They're going to want to see more stock assessments. I agree that king mackerel is important, but we're not even coming close to catching the ACL on the recreational, and so nobody is ever going to mention it. It's just you're not going to have people beating down the door, because there is no management problem coming up with it.

Like I said, with the mutton snapper, two years ago, you wouldn't have heard of anybody asking for an assessment. If you were at some of the meetings in South Florida, everyone doesn't believe the assessment and wants another assessment, and so, like I said, it's like a dog chasing his own tail. Whatever you take from them, they're going to want more of that assessment. It's just what it is.

DR. REICHERT: Anyone else?

MR. JOHNSON: I think, especially on the commercial sector, that they would like to see some of these species, like almaco jack, removed from these complexes and have their own assessment, and so I think that's something that's in a complex, yes, we need to see an assessment.

DR. REICHERT: That's a point well taken, and these are the individual species and not the complexes, and so my follow-up question would be would you then give like almaco jack a somewhat higher score?

MR. JOHNSON: I would. I had several phone calls from headboat operators when they closed this year. They couldn't believe it, because, all of a sudden, that was a very important fish. Like Ira said, it's not important until they take it away from you, and then it's extremely important, and it was of the upmost importance to them.

DR. REICHERT: So what score would you recommend to us?

MR. JOHNSON: Well, it's at a 4, and so I guess that's good.

DR. REICHERT: Okay.

MR. LAKS: I would agree, but you also have to consider, if you take almaco away from like banded rudderfish, then what are you doing to banded rudderfish? In my area, where banded rudderfish are more important, if you're going to pull them out and then you're going to change the ACL to smaller for banded rudderfish, you're just not going to make everybody happy. Unless you're going to do each one of those fish in the complex, doing one alone almost seems to make it worse.

DR. REICHERT: Any other species we may have missed or that you want to change the score?

DR. ERRIGO: What about vermilion snapper? I have heard talk around the council table about wanting more assessments, because it's such an important fishery, both commercially and recreationally. Would that be one that you might think should go higher, or is it okay at the base level of 2?

MR. FEX: I agree with you there. It is a pretty important fishery, across the board. It's all the way down to Daytona and all the way up to Hatteras, and so, yes, I could see it being weighted a little bit heavier than what it is, and it has done a rebound on itself.

MR. CARMICHAEL: Are there any that you think should go down, that you think are less important? Right now, we've got a 2/3/4 range.

MR. HARTIG: If you look at this, you've got two species. You've got one in a tropical complex and one in a sub-tropical complex. Vermilion snapper is the main driver for the fishery in the sub-tropical complex. In the tropical complex, it's yellowtail snapper. Those are the two commercial fisheries that drive the fishermen to go offshore in the first place for that, and yellowtail is much more important than anything else in the tropical complex, and so yellowtail needs to be bumped, at least from the commercial perspective. I would give it a 4.

DR. ERRIGO: Right now, mutton snapper, knobbed porgy, red porgy, red hind, scamp, lane snapper, snowy grouper, and Spanish mackerel are all on the same level, and warsaw, wreckfish, and black grouper. Is that correct?

MR. JOHNSON: Just a point. Wreckfish are in an IFQ. That's the only species that we're looking at here, and how does that come into play when you're -- How many people are in that fishery now? There is a recreational fishery in the deepwater, swordfish. It's a daytime fishery, and there's a small ACL. I can't remember what it is.

MR. LAKS: I would think mutton snapper would be higher than red hind. Red hind is a fish that you just occasionally interact with. It's not something you would target, and I just think that muttons are definitely higher. The only thing with the knobbed porgy, why I would lower it, is because it has closed two out of the last three years, I think, recreationally, and so you have a fish

that's shutting down early without any information on it, and so I don't know if I would lower it any.

DR. BARBIERI: Not to derail the conversation, but I think that the issue about excellence in stock assessments, the discussion that we had before and the use of that terminology, is to that point that Ira just made. We do have a catch level, an ABC, and an ACL for knobbed porgy, but we don't have a quantitative stock assessment, because it hasn't risen to that level yet, and there might be stakeholder support for something like that, and so the idea here, in prioritizing the SEDAR assessments, is to move it from that data-poor in our ABC control rule to something that is really a quantitative assessment, and so I think that was the meaning of that excellence in stock assessment, and so a better informed catch level recommendation.

DR. REICHERT: Do you recommend increasing that score, because of that point, a little bit?

DR. BARBIERI: It's hard for me to tell. This is one of those things where I think the constituents and the folks who are actually involved in the fishery will have a better idea. We do know that we have catch levels now that are set based on the ORCS approach, or perhaps not even the ORCS approach. I guess it's Tier 5 of the South Atlantic, and that is causing the fishery to close perhaps earlier. To Fred's point before, maybe the abundance of knobbed porgy is much, much higher than we actually realize now, but we just haven't had a stock assessment to get to that point.

MR. LAKS: I don't know if I would necessarily raise it, but there's one thing that needs to be looked at further. If the council decides to go to a charter boat reporting system, they're going to shut down much faster than they have, because it's unknown how many are really caught now, and it's just due to intercepts, but, if charter boats are going to be reporting them in the near future, you're going to have a fishery that's going to shut down super fast in the porgies, because I've never been checked. I can catch seven or eight a trip. In the area I fish, it's a pretty important fish, but, again, it's not a -- I wouldn't weight it as high as a mutton snapper, but my concern is just that it keeps shutting down. I think, in the future, if we don't get a better handle on it, it's going to shut down very early in the year.

MR. CARMICHAEL: If things go as we would hope they would, we wouldn't shut down earlier just because of the change in reporting. We would look at both reportings going on simultaneously and see how they compare. If, under the mandatory reporting, we think it looks like there is 50 percent more than what there is under the existing reporting, then we would want to go back and adjust, calibrate, those past landings streams and bring that up, so in the case of one of these that is based on average catch, then the overall ACL should go up to reflect that, and so that's one of the many drawn-out things that has to happen as we move down this path from getting reporting to evaluating reporting, because we are aware of that. When we change the yardstick, we may have to go back and change what we're actually measuring, so that we don't do that to you. It would be our intent not to have that happen.

DR. ERRIGO: I also wanted to point out about knobbed porgy, but it's in the porgy complex, and the complex was shutting down, but, if you look at the landings trends spreadsheet, which is Attachment 6, it breaks down each of the species landings in the porgy complex. Knobbed porgy landings have actually gone down during the years where the porgy complex exceeded its ACL, and there were a couple of the other species which landings went up, above their ACLs, that caused the closure, and so it wasn't -- Jolthead was one of the big ones.

DR. REICHERT: Fred, is it to that point?

DR. SERCHUK: It's to the point of addressing Luiz's comment about either having no assessment or it's been a while since the last assessment was done. We have another category for that that has a very high weight, and so I think, if there are problems in the fisheries because one species has been assessed but another one has not been assessed, or it's been a long time since it's been assessed, this is the wrong category that we're talking about now to handle that. There is another category which has a much higher point value and a much higher importance value where it's taken care of.

The years assessment is overdue is 15 percent. It's one of the highest, in terms of the weighting factors, and also the values that you can assign to years assessment is overdue goes from zero to ten. It's one of the highest, and so I think, if we're concerned about there's a stock in a fishery, particularly where it's been constraining, that's based on old information or no information, that should be taken under the assessment category, the years since the assessment. Thank you.

MR. LAKS: If it's just going to be taken on its own, then I would even lower it, because it's not going to have any significant difference. If it's just in its own little knobbed porgy and not the porgy complex, I would even lower it further. It has no significance then.

DR. REICHERT: Okay. One of the things that I would like to ask John and Mike is if, at the end of the day, if could send this out to the membership, and then we can all take a look at that and see if there is any glaring issues that we've missed. Are there any other suggestions or changes to this list as it currently stands? Again, we will have opportunities to review this and to provide initial guidance.

DR. BUCKEL: Two species that I would like to get the experts to weigh in on are gag and greater amberjack. I think they're still in the 2's. Is that where those should be?

DR. REICHERT: John, amberjack is on the schedule for when? Is it 2018?

MR. CARMICHAEL: It's a couple of years from now.

DR. REICHERT: 2018 or 2019.

MR. FEX: It's hard to weigh in, because we actually have stock assessments scheduled for these, and so it's hard for me to say, okay, this one is better than that one, because we're already going through a stock assessment, and so I understand where you're coming from, but, as we look at this list, we know that this one is coming and this one is coming, and so that's where we might not question it.

DR. REICHERT: Perhaps 2, in this case, is an appropriate score.

MR. CARMICHAEL: It should be more than just if they have an assessment coming up. It should be where you think the need and issues for the assessment rank. If you think it's a little higher, then that's fine, even if we're having an assessment done six months from now.

MR. HARTIG: I think what Luiz said kind of set me on the right path, talking about these different species, some in ORCS and some in the assessment, that are assessed now, and so, to me, I think what you said about moving them up a tier possibly in the assessment -- Based on this, they're not going to be put into the assessment process and possibly moved up a tier in the data-poor process, and so I would go to almaco and rudderfish, and those are constituent concerns that we've had at the council continuously, and update them at least one point, because those are not even ORCS. Neither one of them are even in ORCS. They're at a lower tier than that, because of species identification problems, and so those I would move up, based on what we've heard at the council level.

DR. REICHERT: Thank you, Ben.

DR. ERRIGO: Also, it should be noted, as Fred pointed out, that there is another category to get at how long of a time there has been between assessments. An assessment that was just done last year, that will get a much lower ranking and score when ranking which stocks should be assessed next. If it was done ten years ago, it will get a much higher score and a much higher ranking. This is getting at more of what's the demand for assessments and how often do we want them and how many -- Do we want another one quickly or do we expect them at a certain frequency, more so than others.

MR. FEX: Gag should be ranked a little bit higher, since it is a species that runs pretty much down to Florida all the way up to Hatteras, and so I would acknowledge that.

DR. REICHERT: So score it at a 3? Okay. Let's close the discussion on the constituent demand and look at the role in the ecosystem, ecosystem importance. The tab there is, again, is it's the same value for -- Everything is set at 3. I had a couple of suggestions for three species, to give them a higher score. One was black sea bass, which I think should have a high score, and red snapper. Was tomtate on there?

MR. CARMICHAEL: Just for the record, we didn't rank tomtate, and we didn't rank banded rudderfish, and we didn't rank gray snapper in this exercise.

MR. JOHNSON: Or the chocolate porgy.

MR. CARMICHAEL: I don't think chocolate porgy is in a management unit.

MR. JOHNSON: The y-bone porgy or whatever you call it. I'm using fishing slang, but that's part of that porgy complex. It typically is commonly caught from Cape Canaveral north, more so than any other type of porgy other than red porgy.

DR. REICHERT: Obviously I want to remind people, and it's in the box there, the role in the ecosystem. You have got the forage or habitat considerations and then you've got the predator/ecosystem interaction considerations, and so some species may be important because they provide prey for others. Others are important because they are top predators.

DR. SEDBERRY: I would raise wreckfish as the top predator in its habitat. There's some bigger fish out there, like sharks, many of which are just scavengers, but I think wreckfish is really the only top-level predator out there at those depths.

DR. REICHERT: What about for black sea bass, because I think they are abundant and they are both predator and prey?

MR. CARMICHAEL: Black sea bass a 4 or a 5? What are you proposing?

DR. REICHERT: I gave it a 5, because of the -- Then red snapper was a 5, because they are one of the top predators, and they have become increasingly important. Maybe that's the ecologist in me. If I would go through this entire list, I would say every species has its ecological role and importance in this ecosystem, and so, in that respect, I find it difficult to rank them. I tried, and I just picked two or three obvious cases.

MR. LAKS: I would have to say king mackerel, too, for just the fact that it eats such a wide amount of prey and it's also eaten by other stuff.

DR. REICHERT: Would that be true for Spanish, too?

MR. HARTIG: I've looked at a lot of stomachs, Marcel. I am always interested in what fish are eating. The number one thing I see in stomachs are tomtate. Number two is vermilion snapper. Number three is not black sea bass, but bank sea bass, which black sea bass eat a lot of small bank sea bass. Those three species, I think, should be elevated at least in this, without getting in the weeds totally.

DR. REICHERT: Okay, but you said tomtate, vermilion, and bank?

MR. HARTIG: Yes.

DR. REICHERT: But tomtate wasn't in there, and so that would be vermilion and bank sea bass.

MR. HARTIG: You can put that under the grunts category and move it up one.

MR. CARMICHAEL: There is a number of grunts in there, but there's not the grunts complex.

DR. REICHERT: Okay, and tomtate currently isn't in there, but that's why I had tomtate as a high. I completely agree with you. Vermilion and bank sea bass, I don't remember seeing bank sea bass in that list either.

DR. ERRIGO: Bank is not.

DR. REICHERT: So that would be vermilion snapper. The point that I was going to make earlier was that perhaps downgrade golden tilefish, not necessarily because it's not a top predator, but because of the habitat it lives in. They live in habitat that may have a lower species diversity than, for instance, the live bottom habitat.

DR. GRIMES: That's true, but it's also true that in that habitat, in that burrow system that they are in, that they totally structure that system, their predation.

DR. REICHERT: Okay. You are absolutely right. We are just thinking about what species -- John was asking what species we could possibly rank lower, and I was going through that list, but I agree.

DR. BUCKEL: I am just reading the definitions again here, and so it's the 2 to 4 and the 5. It's when you change that stock's abundance that it has a substantive change in the predation or other vital rates for one or more managed stocks, and so, if it's not influencing a managed stock, then we wouldn't mess around with it. The same with wreckfish, unless wreckfish are influencing one of these, or one of the managed stocks. If we're taking that perspective, then golden and wreckfish wouldn't be included, or they would be downweighted.

I don't know how much this would help us here, but it may be worth a look at some of the -- I think there's an Ecopath model now for the West Florida Shelf, and just taking a look at which of these species tend to be important players may help guide if we miss something here in the conversation.

MR. COLLIER: For red grouper, is there any influence on the structure building that they do, where they have the pits that aggregate other species?

DR. REICHERT: Again, that's a good point. That should get a higher -- Maybe a 4? I want to go back a little bit to Jeff's point. Following that rationale, do we agree to downgrade or give -- Not downgrade, but give golden tilefish and wreckfish a lower score? What is the pleasure of the group? Should we make that a 2? Any other species that we would like to change from 3 to either a higher score or a lower score, depending on their role in the ecosystem?

MR. CARMICHAEL: Marcel, this seems really tough, because I think people are struggling.

DR. REICHERT: Yes, I agree.

MR. CARMICHAEL: With the multispecies, you could argue that if any one thing goes away that something else jumps in its place. There seem to be very few -- If you look at some of the examples, you are clearly looking at systems where there is much better linkages defined and understood and researched, and you almost feel like is this something that -- If people don't feel strongly about this, do you think this is something we just don't have the information to even begin to score it, or maybe some of these that we've elevated you really think are important enough and that's where the action really is.

DR. REICHERT: I agree with that last point. I think there's a lot of information out there that could potentially help us rank this. The problem is maybe we should look at this a little more and provide some further guidance after looking at some of the information that's important, in terms of diet studies. Ben mentioned that. There is a variety of diet studies out and species composition of the different habitat and some of the modeling efforts that are done, and refine this metric at a later date.

MR. CARMICHAEL: I think that would be good, just to try and see if we couldn't do more with this. For now, just highlight a few stocks, elevating the scores of some notable predator species that could likely affect many of the other things that the council manages.

DR. REICHERT: Yes, and it would be good if we could, in our report, indicate what type of information would be useful for us to have so that we can take another look at this at a later date and refine the scoring. All right. The next one is unexpected changes in stock indicators.

MR. CARMICHAEL: I didn't know if that was one we were going to try to get here today. I wasn't anticipating it, necessarily.

DR. REICHERT: I am more than happy to leave that to a later date. So we have two left, and that's the relevant new type of information available and the mean age in catch, and shouldn't that largely come from assessments, the last one?

MR. CARMICHAEL: I think we've got all of those filled in from the assessments.

DR. REICHERT: Okay. Let's look at relevant new type of information available. That is one, again, that is filled out the same score for all the species, new type of information. The box explains that that entails and what we should consider in the scoring, and some of the types of new information is new surveys and new biological research results and change in estimates of natural mortality, et cetera.

One of the things that I thought of when I looked at this is that some of the new information, for instance the natural mortality, as an example, actually will affect -- If there is new information, it may affect all stocks, unless there is species-specific new information available.

SSC MEMBER: (The comment is not audible on the recording.)

DR. REICHERT: Yes, that's another example that will affect all species, new modeling approaches, and so my question was, John, and maybe you can specify that, but these are very species-specific new information, and so do we collectively know of any new information for any of these species that would elevate their ranking? Another point here is the metric goes from zero to 5, and so, if there is none available, should that have a zero? Should we have the starting value for all of them for zero?

DR. ERRIGO: Right, and so zero is there is no significant new types of information available for that species. Then, like an example of a new information that could have a profound effect on an assessment would be the video index for the red snapper assessment. Without it, we couldn't proceed with an assessment. Therefore, that would have gotten a very high score. However, pretty much all the species in the snapper grouper complex have new information in the video survey, and so I'm not sure that a weighting of zero is appropriate for across the board.

DR. BARBIERI: My interpretation of that is some new thing that has come up, for example, mutton snapper, that we had a maximum age originally estimated to be in the teens, and then, eventually, it was in the mid-twenties. At that benchmark assessment a few years back, we found out that they live to be forty. That had a fundamental change in the natural mortality estimate, because it was almost a doubling of the maximum age, and it was something that until we started digging into those datasets that we couldn't really get to, and so it's something that fundamentally has changed our understanding of the population dynamics.

DR. REICHERT: Wreckfish is a similar example, where the maximum age doubled, and that has obviously a profound effect on the outcome of a stock assessment.

MR. CARMICHAEL: If we had done this at that time that we learned that, then that would have probably been a rating of a 5, but since we are, now with those stocks -- We don't have any information on the horizon, and they would fall back to a zero, which enforces the looking at some of these from year to year. This one, in particular, should probably be updated regularly, as information comes to light.

MR. LAKS: I don't know where you guys are standing with the cobia genetic studies, but I think that would be new information that would be really significant, if cobia are going to be split at Florida/Georgia or it's going to go back to the way it used to be.

DR. REICHERT: So, for cobia, that would be an increase in score right now.

MR. LAKS: I don't know where the science is at right now, but if that's coming, I think that would be very important.

DR. REICHERT: But we don't have that information just yet, and so are we -- Should we only consider new information when it is available or should we adjust the score only when that information is available? I would argue let's do that, because you never know what the outcome of research is, and so that's an example where we may want to adjust the score next time we meet, because that information may be available at that time.

MR. CARMICHAEL: I think you can go either way, but just agree to how you're going to do it and then let's -- I think, with this one, it's probably best to start at the top of the list and work our way down. There may be some studies. I know that there is some work going on now to try and refine what the cobia genetics showed, to try and better define what those boundaries are, and I think that's one where you could say that, yes, there probably is research on the horizon that could affect that assessment.

I think, with cobia, what we know now is we know the studies are underway, particularly in Florida, to try and better distinguish that break between Florida and the more northern Atlantic group. That's one I think you could probably say with some confidence there is something on the horizon that could have an impact and it would be worth dealing with, and so maybe that's a 3, versus if you know it's really -- You've seen it, and you know it's going to have an impact, and maybe that justifies a 5.

MR. FEX: Isn't there a hogfish genetic study going on right at the present time? I know Scott from NOAA Fisheries, and he's working with it, and so I didn't know if you guys know.

DR. REICHERT: I know of a reproduction and age study, but I am not aware of a genetic study, but I may be unfamiliar with that genetic study.

MR. FEX: I don't know what it is. I just know there was a study of otolith sampling and stuff like that going on, and so I just thought I would throw it out to you. Thank you.

DR. REICHERT: Okay. Procedure-wise, John, you suggested let's go down the list and if anyone has knowledge of any new information that's currently available, let's -- Black grouper, anyone? Black sea bass? Blueline tilefish?

MR. COLLIER: SEDAR 50 is going on even as we speak.

DR. REICHERT: There is a lot of new information available right now. If we assumed that assessment wasn't going on, we would give that a 5, correct?

MR. CARMICHAEL: Yes, I would think blueline is definitely -- We know there's a lot going on. There's been a lot of change in stock structure from the last time, which, to me, justifies a 5. What about the new SEFIS data and the indices on black sea bass? Isn't it likely that black sea bass is one that may have video index data available now?

DR. REICHERT: Yes, you're right.

MR. CARMICHAEL: We should maybe make all of those a 3 as we get to them.

DR. REICHERT: I forgot about that, but you're right.

MR. CARMICHAEL: Do they get black grouper?

DR. REICHERT: I believe in very, very low numbers. I don't expect that to be an issue, but black sea bass absolutely, and so let's make that a -- What were you suggesting?

MR. CARMICHAEL: A 3.

DR. REICHERT: A 3. Sorry, but I forgot about that. Blueline tilefish, we discussed. Cobia, we discussed. Silk snapper, I don't believe that's a lot of information available in the video index. Dolphin? Gag grouper, the video index? Yes. Goliath grouper? Luiz? No? Gray triggerfish, there is age validation work, but that's in the category of we don't know how that's -- Well, it will provide information, and so I would personally say that's probably a 3, or maybe even a little higher than that. Greater amberjack? White grunt, there is a genetic study going on to look at stock structure, and that's in the category of it is going on, and there will be information available. What that information will be, we are not sure yet. A 3? I skipped greater amberjack and the video index.

MR. CARMICHAEL: Is that included?

DR. REICHERT: It is included. Hogfish? Florida?

DR. BARBIERI: No, nothing new. The genetic study that was completed was published, and I don't think anything new.

DR. ERRIGO: That genetic study was included in the last assessment. That's why the stocks were broken up the way they were.

DR. REICHERT: Remind me. Was the video index included in the Georgia and North Carolina?

DR. ERRIGO: No, there was no independent index for hogfish.

DR. REICHERT: Okay. King mackerel?

MR. CARMICHAEL: They're working on the environmental stuff, and I was also going to say the Science Center is really trying hard to get Mexican data, data from catches in Mexico, which are probably greater than those in the U.S., and so that could have a big influence on the stock assessment. That's kind of one of the reasons for doing the assessment, and so I think that's probably maybe a 5 on king mackerel. There could be some big stuff underway.

DR. REICHERT: I would agree with that. Does anyone disagree? Then we will make that a 5. Mutton snapper?

DR. SEDBERRY: Isn't there some work being done on spawning aggregations in the Florida Keys, some new tagging data and new monitoring of spawning aggregations?

DR. BARBIERI: It's not new, George, but I would say continuing. I remember that John Hunt came and gave a presentation to the AP and identified those corridors of movement of spawning fish, but I am not aware of anything new other than continuing that same work.

DR. REICHERT: Thank you, George.

DR. BARBIERI: Ben is saying that they have broadened that, because he was in some workshops that were going around in South Florida with John Hunt and the team there that's doing all that telemetry of mutton, and so a 2.

DR. REICHERT: Thank you. Red grouper? It's currently being assessed, and we have the video index, and so that would be a 3? Red porgy, video index, and I also believe that we have some additional information in terms of changes in reproductive parameters, and so I would actually make that a 4 or a 5. I think we have a lot of new information available for red porgy right now already, and so I would suggest to make that a 5. Red snapper, we have used the video index, and so that's not new. We just went through a stock assessment, and so I'm not sure how much new information there is right now, but maybe in the future.

MR. CARMICHAEL: Tagging data and cooperative research, and is there anything that we see that might really impact the assessment? Is that adding to existing datasets versus something new?

SSC MEMBER: We're doing a juvenile index study in the State of Florida. That's ongoing as we speak.

DR. REICHERT: So there will be new information available. Will we make that a 3 or a 4?

MR. CARMICHAEL: I think a 3.

DR. REICHERT: Scamp, I think we have a lot of new information for scamp that is not being used, like the video index. It has not been assessed, and so, if we compare that relative to the information that we have used to set our current ABC, I would say this is an easy 5. Red hind?

MR. CARMICHAEL: Video?

DR. REICHERT: No, we don't get them enough in the videos. Lane snapper? Snowy grouper?

MR. CARMICHAEL: Is there video?

DR. REICHERT: No video. It's too deep.

DR. SEDBERRY: What about Andy David's work on the Charleston Deep MPA and the Snowy Wreck? They just did a cruise this summer with an ROV and there are some new abundance estimates, I think.

DR. REICHERT: Would that help with like new information for an index? Is that too anecdotal?

DR. SEDBERRY: You're right that it's kind of a snapshot, and so nothing really to build on.

DR. REICHERT: We can give it a 1. There is some information available. Spanish mackerel? Speckled hind? I wish we had more information. Golden tilefish, we just went through an assessment. The only thing I can think of is something that we will discuss later, and that's the market grade. I'm not sure if that information is available and useful, and so do we want to use that to increase that score a little bit?

MR. FEX: I might be going off track here, but you said you used the market grade, and the only reason I bring this up is a concern of mine being, in the Carolinas, that typically was a fish that was harvested, predominantly golden tile, and now that the majority of the longliners are down there in southern Florida, and the majority of the fishermen are down there, it's a concern to me that when you go to assess the stock that you're going to take that as a major contributor of the stock, when in fact Georgia, South Carolina, and North Carolina has a big stock of that fish.

I just wanted to make that point, that you using market grade out of a typically a Florida-caught fish that we now are catching a lot of golden tile, just because the limit went up, and so I'm concerned that you're just going to use that Florida-based catch to assess the stock, and so I just wanted to make that point. It has no relevance to any new data, but I just wanted to make that clear to you guys. That's a concern to me, because I don't even catch the fish, but that sometimes will be a driver of the assessment of the stock, is taking that market grade. Thank you.

DR. REICHERT: Thanks.

MR. CARMICHAEL: We're not using market grades, and it's not new data. The data exist. Looking at it to see if it could help the assessment in any way would probably just be a term of reference in the next assessment, and so I don't know that I would rank this here as being new.

DR. REICHERT: Okay. Vermilion snapper, there is new information available from the video index. We have updates for reproduction and growth, and so maybe not a 5, but a 4, a 4 or a 5. Warsaw grouper?

DR. SEDBERRY: Again, that cruise that Andy did this summer, there's a lot of warsaw grouper in that video from the Charleston Deep MPA and the Snowy Wreck. There's a lot of big warsaw grouper, but, again, it's a snapshot.

DR. REICHERT: I suggest we give that the same score as the other species. I think we decided on a 1. Wreckfish, I don't believe we have any new information. We used the information we had in the last assessment. Yellowtail snapper, any new information? Luiz, do you know of any? Okay. Excellent. We went through this.

DR. SCHUELLER: I just wanted to make a comment about this particular piece. It would be helpful, I think, in the future, when this is being rescored, to maybe get some information from the agency as far as what's been funded, so MARFIN and CRP, et cetera. Obviously they would have lists of things that have been funded or final reports, and I think that would help with this, rather than sort of us sitting around and scratching our heads and wondering what it is that has been done or not. That's just a recommendation.

DR. REICHERT: I think that's an excellent recommendation, and so I just want to make sure that we put that in the report. I think that would be great. CRP and MARFIN and S-K and other funded research, and also there may be some research projects going on at some of the universities in the region that may be relevant.

DR. SERCHUK: I have two comments, Mr. Chair. I'm not really quite sure where they fit in. One of the things that we haven't mentioned, because it's not new, but it has a major impact, is when the datasets are completely revised, and I'm thinking about MRIP data. Where do we put that sort of change in the landscape?

Clearly that is something of great import, and when the databases change or when the magnitude of inputs change, that certainly must have some influence on when assessments are scheduled, and so I don't know whether we would put this under stock indicators, the previous one that we skipped over, but we haven't talked about it. That's one point.

The second point goes back to the indicators, because they mentioned projections. One of the things that I am concerned about, and this will come up, I think, with the mutton snapper is we have an assessment that was done in 2015, which was different from the one that was previously done, but it only goes through the terminal year of 2013. We are setting now, in the recommendations, for catch levels, OFL catch levels, through 2020. We have an assessment that ends in 2013, and we are going seven years ahead. That is fine if our projections were really reliable.

What I am not seeing in any of this, and this is why the stock indicators thing was, but how good are our projections? If the projections are not very good, that's a reason why we have to keep updating the assessments on a more frequent basis. I don't know where that fits in as well, and I have one other point that I didn't mention. What about things like changes in stock indicators, changes in the spatial distribution of the fishery? We now have CPUE that is going very high in, for example, blueline, in one area, because there's been a shift in the fishery. Is that something we ought to be concerned about, in terms of updating assessments?

Size composition, all of a sudden we're seeing larger or smaller fish than we saw before, and should that be an indicator of maybe new information or a change in information? What does that have in terms of the frequency of the next assessment? We haven't talked about those sorts of things, but I think they're quite important. Thank you.

DR. REICHERT: Somewhat of my thoughts on these points, but, to start with the last one, I would feel that that would be part of this new data, if there is new data available about changes in landings or changes in spatial distribution, I would say, if we update this and become aware of those changes, that should definitely be reflected in the scoring.

I completely agree with you about the major changes there, in terms of across-the-board changes, like MRIP or the changes in the modeling effort. My question there for the committee is then should that, by itself, justify a reshuffling of the priorities and should then priorities be given to assessments that were already done or should the priority remain, for instance, in species that haven't been assessed in quite a while?

DR. BOREMAN: Just some background for that. The NRCC, which is like the SEDAR Steering Committee for the Northeast, met two weeks ago. I won't tell you how much time we spent on this ranking exercise, but let's just say that it wasn't very long. One thing that they've done is cleared the boards in the last half of 2018 to deal only with stocks that are going to be impacted by the new MRIP numbers, except for fluke, which is also a stock heavily impacted by MRIP, but no other benchmarks and no updated assessments, but just get ready and roll up our sleeves and get ready for the new MRIP numbers to show up and figure out what to do with them.

DR. SERCHUK: The other point was the projections, Mr. Chair, and I am concerned. I just see them as mutton snapper. We've been dealing with something that ends in 2013 as the terminal year, and we are setting specifications based on projections. That's fine, but I think we need an exercise someplace to look at how well our projections perform. If they perform well over seven years, then fine. If they break down after two or three years, we're deluding ourselves to think that we can go that far into the future, because they're often based on assumptions of recruitment across the board. There are assumptions of the conduct of the fishery, and there are many other things that are going on, and I'm just wondering if that's something we ought to keep in mind.

DR. REICHERT: John or Erik, was the uncertainty in the projections part of any of these metrics?

MR. CARMICHAEL: I don't believe that they were. I can't recall looking at uncertainty in the projections in there.

DR. REICHERT: Does the committee want to make a recommendation that that is something that should be taken into account?

DR. BARBIERI: I agree with Fred that this is a very important point, and maybe we should be more attentive to this going forward, but this is something that we have been trying to take into consideration as we set time horizons for the projections. If we have a higher level of confidence, we usually go three to five years, but if there are projections that we don't feel are very reliable and that the uncertainty is really off the charts, we try to shorten that time horizon.

Of course, Fred, that doesn't take into account the delays, the time lag between the terminal year of data going into the assessment and the time that the assessment makes it to the SSC and then the whole process of starting the implementation of those projections, but at least we tried to take that into account that way.

DR. REICHERT: You mentioned projections, and I also would argue that we take that into account when we recommend the next assessment. When we don't feel that the projections -- When we feel that the projections have a high level of uncertainty, we generally recommend a shorter period to the next assessment than when we feel a lot more confident.

DR. SERCHUK: But, Mr. Chairman, that should be in our scoring someplace, because now we're talking about assessment frequency based on uncertainty. It's not the time of the last assessment. That's a different thing. It's uncertainty of the projections reflecting what we believe is the true dynamics of the stock, and that's why, in this case about indicators, they were saying you have projections, but you have an indicator that says the indicator is going the wrong way and your projections have indicated that things are going to be improving. In many cases, we don't have an indicator, and that's why I brought up the whole idea of how robust the projections are.

DR. AHRENS: Just as a suggestion of something that may help, since you do have retrospective bias in a lot of the assessments -- Because you have a strong retrospective bias, that may help you to ascertain whether or not that could go into that metric as well.

DR. REICHERT: Thank you.

MR. FEX: Also, too, you might take into consideration the availability of assessments per year. If you think only two assessments per year, in five years, you're talking about ten fish. You've still got plenty more, and so our ability to have another assessment is about five years out, consistently. That's what I've seen, from my perspective, and so I totally understand your perspective, but that is our issue. Thank you.

DR. BOREMAN: To follow on Fred's comment, the higher level of uncertainty maybe should not be dictating when the next assessment should be, because that's assuming that you're going to have better data to reduce that uncertainty and you're going to have it soon, and so we should have the assessment soon. It should probably be more of a dictate to designing research studies and monitoring and collecting data than just saying when the next assessment should be.

DR. REICHERT: Yes, and I agree, and I think, both in the assessment and I think also in our reports, we frequently make recommendations to what type of data or what type of studies would be most useful in the next stock assessment, and I even believe that we made recommendations to the effect that the next stock assessment would probably not be very helpful unless we have additional information, and I think that's equally important, and that's especially for the species where we don't have a lot of data.

DR. NESSLAGE: To Fred's point about the new MRIP numbers when they come out, I was going to let my earlier point die, but I think it might be important going forward. I just did a quick little analysis of the recreational importance metric, and, with the exception of goliath grouper, it's almost exactly -- It's basically swamped by the log of the catch, and so it's basically an index only of the relative catch of each of the stocks and not the percent recreational versus commercial. If

that's important to you, you will want to revise the way that's mathematically calculated going forward.

DR. REICHERT: Thank you. John, I believe that we have gone through those tabs that require our input right now. Mike pointed out that the remaining item here is the relative scoring. I also do want to point out that it's about five o'clock, and so I want to make sure that we have some time left in the agenda to discuss the other agenda items. Otherwise, we have to move that to tomorrow morning, and we have a lot on our agenda, and so I do want to open the floor to a discussion relative to the relative factor scores, and so let's do that, but I may suggest to table that for future discussions, so we have some time left to cover some of the other items.

DR. ERRIGO: It's the second tab, relative factor scores, and basically what it is, is it's how important or how much weighting each of the factors against each other, when calculating the overall rank of each of the species, for assessment purposes.

DR. REICHERT: Mike, sorry to interrupt, but correct me that this is an overall percent importance and this is not something that is going to be adjusted on a species-by-species --

DR. ERRIGO: No, and what happens is you take the score given to each species, like in the commercial fishery importance section, and you multiply it by 0.15. Then you take the score from the recreational fishery importance and multiply it by 0.15, et cetera, et cetera, and then you add them all together, and that's how you get your ranking.

DR. REICHERT: Thank you. The other thing I want to do is I want to avoid having a discussion about whether it will be 16 or 15 percent, but what I would like to do is, given the current scoring, are there factors that we collectively as a committee feel should have a much higher or a much lower ranking? I know we talked a little bit about some of these before, and so I would like to open the floor to anyone who would like to suggest either an increase or a decrease in the percent importance.

DR. NESSLAGE: Are you considering the stock indicators one as well? Is that up for discussion then too, or did you want to concentrate on the ones that you discussed?

DR. REICHERT: No, we can discuss all the factors here.

DR. NESSLAGE: Sorry if I'm jumping out of -- I guess maybe this is a question for the Mid-Atlantic folks. I am more familiar with them and their use of the rumble-strip approach and they are pretty much meeting -- Is it every meeting or once a year that you're updated with the rumble strips, I think, and so they have a whole formal process for evaluating that, in which case I would think that they would want to have a high importance on that, whereas I don't believe, and correct me if I'm wrong, this SSC has the rumble-strip approach, and so I would downgrade it, unless you're planning on adopting it.

DR. REICHERT: Sorry, but what --

DR. NESSLAGE: You're talking about moving the percent importance up or down, right?

DR. REICHERT: Yes.

DR. NESSLAGE: I would say move it down if you don't use them. Maybe it zero.

DR. REICHERT: Sorry, but remind me of what factor you're talking about, Genny.

DR. NESSLAGE: I'm sorry. Unexpected changes in stock indicators. You don't use stock indicators, and so why is it at 5 percent?

DR. REICHERT: Please remind me of what's included in the stock indicator.

MR. CARMICHAEL: I don't recall. We can try to look and figure it out.

DR. REICHERT: Okay. Erik, do you know, off the top of your head?

DR. ERRIGO: Right now, there is no tab for that. It's in here, under the scores, but they're all set at 2. It gets a score from zero to 5, but they're all set at 2, and there is no tab.

MR. CARMICHAEL: No, there is. It's unexpected changes.

DR. ERRIGO: I guess there is. We missed that one.

MR. CARMICHAEL: This gets at the idea of forecasting projections and whether or not new data show you are deviating. I mean there could be other things other than formal rumble strips, I believe, that would be in there, because, if you had information on recruitment and you assumed some level of recruitment and you had information that your assumptions were not being met, then that would probably be something where there is a deviation, or I think the same could apply for landings. If you assume some landings, maybe in an interim period projection in a terminal year, and now you're in the early years of those projections and you realize that your interim landings assumption was off, and we've had that happen actually quite often, and so I think there could be things there. It's not something we have dived into, obviously.

DR. REICHERT: Yes, and I apologize that I missed that one, and so we skipped over that one.

DR. SERCHUK: That was the point of my whole intervention a few minutes ago about -- Maybe I didn't make myself clear. If, for example -- We generally think about indicators as a fishery-independent index. You set up a management measure and, all of a sudden, your index from the survey goes sky-high or it drops. Then someone says, wait a second, we either have to do another assessment, because the stock is more abundant, or it has tanked, but it could be -- If the fishery is bringing in lots of small fish and it looks like, quite frankly, they're using the same practices in the same areas and they're just inundated with small fish, the small fish, if you had a market category of small fish landings, all of a sudden now they're three time what they were the past year. If someone says that recruitment is great and we want another assessment, that's the thing about the unexpected changes in stock status, and I mentioned a whole bunch of things about changes in areas fished. I talked about robustness, and those things often trigger an assessment.

Those are often the things that politically come to either the SEDAR Steering Committee and someone says, wait a second, we want this assessment right now because we think things are better and we can catch more or we're being hurt by a choke stock, which we think you've

underestimated its abundance, because we can't catch something else. Those are the unexpected changes in stock indicators. The fishermen will see it in how they look at what they're catching, the size composition and where they're catching it, relative to their experience over the many years.

They will say, hey, things are much better or much worse. They will know that. Those are the sort of things that then they bring into a meeting and say, wait a second, we think you need to update the assessment, because we think, right now, what we're operating under is based on a set of assumptions or a set of circumstances that have now changed. That was my whole point in making my intervention.

When we come back to unexpected changes in stock indicators, the point that Genny was raising of, well, maybe we ought to downweight it and put it someplace else, we can do that, but the concerns that I expressed need to be captured someplace in the matrix, and that's all. Thank you, Mr. Chairman.

DR. REICHERT: Thank you. Church, I saw you hand your up, but, to that point, no, we don't have a rumble strip. What we do have are landings updates and the annual fishery-independent update. I believe that's the information that we are presented that could aid in that, but that's, I believe, the only thing, and so, no, we don't have that formal process that the Mid-Atlantic has.

DR. GRIMES: All I was going to do is say we have a good example of this, actually, with this tilefish stock. SEDAR 25 apparently said there was a large year class that proved to be more or less nonexistent when they did the update of that stock assessment. That's exactly what he's talking about.

MR. FEX: Fred, I like your point. You guys take anecdotal opinion into consideration. That's what I got from it. I heard one thing from John a while back that CPUE from a commercial fishery cannot be used to estimate the status of a stock, due to regulations, and so that would be the question that I would ask.

DR. SERCHUK: Typically, CPUE has to be evaluated, because you can have changes in CPUE that are completely unrelated to underlying abundance. In many cases, CPUE is an accurate measure of underlying abundance, but it's just that you have to -- Is the CPUE coming from the entire area? Is the CPUE reflective? Are you just fishing on high-density areas? This is a classic case that happens in tuna, where they fish on high-density areas, but the number of high-density areas is diminished, and so you still can have a high CPUE, but you will have it in less areas, and so it needs a little bit of caution to interpret it, but it certainly can be used, in the appropriate circumstances, as a measure of underlying abundance.

DR. REICHERT: Thank you. I realize that we may not be able to fill that tab of unexpected changes, and so we will address that at a later point. I do want to briefly go back to the relative factor scores, and I understand your point, Genny, but, again, are there any of these that we feel are currently out of place?

DR. BOREMAN: I don't understand Genny's point, because I was feeling exactly the opposite, that all of a sudden if things look like they're going to hell in a hand basket, we had better get an assessment put together in a hurry and figure out what's going on, and that's what we do in the

Mid-Atlantic, or that's our trigger. It may go from a data update to an assessment update to a full benchmark, depending on the seriousness of it.

DR. REICHERT: I don't want to put words in your mouth, but where I understood you were coming from is that you thought that we did not have that information available, period, to use that in this metric.

DR. NESSLAGE: I think if you are going to use that as a factor and it has a weight that it would be good to have a formal process. I am already hearing what are we going to consider as indicators and what is going to be acceptable. The Mid-Atlantic has a formal process for that now, correct, John, essentially, and that would be helpful, I think, for this group, so that it wouldn't turn into something chaotic and there would be some set of metrics you would look at. Then if everything goes to hell, you would do an assessment. I think that would be great.

DR. REICHERT: John, to that point?

DR. BOREMAN: To that point, no, we don't have a formal process. We thought we would have one by this point, but some of our people have been dragging their feet on that, with the Center and so on, but what we do now is, when we set an ABC, we say, in the coming year, these are the indices we're going to be looking at closely and we're going to keep an eye on. If these show any significant changes, then we're going to reexamine the whole assessment process here. It's a species-by-species, and we give the Center and the councils a heads-up on which indices we're going to be monitoring, catch or distribution of catch or age distribution in the survey or whatever.

DR. BUCKEL: I think this is something we've asked for, like in the SAFE Report, and there has not been the resources there. Maybe, moving forward, which I totally agree with we need to have some checks, and so maybe that falls on us, with having a term of reference in future stock assessments that says, okay, here is a trigger for the video index and here is a trigger for certain things. Then we can go back to that the next year after the assessment and the second and the third and compare the video index to that trigger and that's our indicator, because we've asked for it and we haven't gotten it.

DR. REICHERT: I agree with that, and it's a related discussion, but that may be something we should pick up on a later date. I want to go back to this scoring and, again, ask the committee if there are any of the current percentages that you feel are completely out of order, again, without talking about 10 or 13 percent, but are there any of these that we feel, as a committee, should have a higher or a lower value? Then we can talk about the specifics during a later discussion.

DR. SERCHUK: This gets back to one of my earlier points. I think rebuilding status is too low, and I suggest that it needs a higher value than 3 percent, again, because, if something is in a rebuilding plan, the council has put time and effort into putting a rebuilding plan together, and that should have a trigger, in terms of subsequent assessments, to ensure that you're on track.

DR. SHAROV: I am sure there was quite a lot of thought put into defining what the defaults should be, but if you look at the current default values, you essentially have five factors that take over 50 percent of the total importance, which are, in order of the highest down to the lowest. Commercial and recreational importance, that takes 30 percent in the default, followed by the years the assessment is overdue, which is 15. Then that is followed by the status of the stock, which are

relative stock abundance and relative fishing mortality. It seems to me that I would give a higher weight to the status of the stock, because if the stock was overfished and/or overfishing was occurring, that is the greatest concern that should be at the top of the interest.

The second is whether the species is commercially and recreationally important, but you may have a very important commercial and recreational fishery, which would give a high score, but if it's managed appropriately and your relative stock status is good, then you don't need necessarily to end up with the higher importance rate for the species. Again, if the species is in good condition, you could be overdue with your assessment, which here is given pretty high relative importance, but you might still delay and sacrifice a species that is well managed in favor of the other one that is in a dire state, and a dire state generally requires action, and that is you need to know whether you have reduced the fishing mortality, whether you move from the overfished to not overfished condition, et cetera. The status of the stock probably should be given the highest weight, in my opinion.

DR. REICHERT: Okay. Does anyone disagree? Okay. Any other comments at this point? All right. I think we covered the action points. We can talk about some of the data-poor species when we discuss SEDAR.

MR. CARMICHAEL: These things are sliders that are linked to add up to 100 there in the Column B, and so how does this look? We also expect that this is something that we would ask for some feedback from the council, as to what factors they also think are the most important in deciding their assessment priorities.

DR. REICHERT: As I mentioned on various occasions, we will have other opportunities to take a look at that and adjust that. Okay. Then I thank everyone for the contributions to the discussion. We will move to the next agenda item. It is quarter past five, and let's see how much we can cover in the remaining time.

4. SEDAR ACTIVITIES

MR. CARMICHAEL: We just want to bring you up to speed on what's been happening in SEDAR for the last six months. There was a goliath grouper stock assessment completed, a peer review concluded, soon after your last meeting in May. You were provided the assessment report.

DR. REICHERT: Before we move on, I just want to thank the AP members for their contributions to the discussion today. Gentlemen, thanks for joining us. I just wanted to make sure that we do that before we move on. Kenny, Robert, and Ira, thank you. We appreciate that. Go ahead, John.

MR. CARMICHAEL: As you were provided the goliath grouper assessment report, just note the review panel had a lot of areas of concern with the assessment. They didn't recommend that it was adequate to support status determinations and it should not be used for management advice. Because of that, you weren't provided a formal presentation on this assessment. There is a number of issues that probably need to be resolved within goliath, and the data is catch-free model, and there is a number of issues within that and its application. Goliath is obviously something we've talked about, but I just wanted to let you know sort of where that stood.

The other big item that's going on, and a lot of you have heard a lot about this, is the SEDAR 50 assessment, and that's going to be blueline tilefish. One of the most interesting developments lately was the stock ID workshop held earlier in the summer, where there was a recommendation to extend the stock around the Florida Keys and into the Gulf of Mexico a little bit.

That was a bit of a surprise. I think it caught folks kind of off guard. We hadn't really brought in people from the Gulf Council or anything as part of that workshop, and so we have an issue here where the Steering Committee, the SEDAR Steering Committee, has asked that a subpanel of SSCs review that information, and that will be happening the 28th, I think. It's the last Friday of this month, and so it's next week on Friday.

There is going to be a joint SSC, and we have representatives from our SSC, the Gulf, and the Mid-Atlantic all taking part. Any of you are, of course, welcome to sit in on the webinar. It's a webinar, and so it's an open public meeting, but there is a subpanel of representatives from each SSC who are going to look at the stock ID workshop recommendations and provide some information on the level of overlap between the biological stock and the Gulf management unit and kind of what that means, what's the magnitude of the landings in that area.

After that, then a higher-level group, which will include representatives from the management entities, the councils, the regional offices, and the Science Center, will have a conference call, kind of like they did when we dealt with blueline, to develop some guidance for the terms of reference in dealing with that, and so we have this recommendation for the stock boundary crossing another council, and so now we have a stock that crosses three councils, and that's going to be reviewed, of course, through the data workshop and all of that looked at, and we just have to now kind of decide what that means to the Gulf stock and bringing them in and how we deal with that.

A lot of stocks, we have the overlap with the Gulf, and the council has different solutions for how it's dealt with, that overlap. Sometimes one council gets the lead and sometimes it gets another lead and sometimes they agree to divvy up a certain proportion of the stock to the other council or what have you, and so that's just the kind of thing that's going to need to be worked out as we go into this assessment, and so blueline tilefish continues to surprise us.

The other issue is, and I'm not sure how much people are aware of that, but there are a lot of concerns after an aging workshop that there wasn't reliability with the age determinations, and so the recommendation was to not go forward with using the age-based information to do catch-at-age-type modeling. It might still have some use for some growth-type of information, and maybe it can help with maximum age, but, again, all of that is going to have to be evaluated through the data workshop, and so we're not exactly sure, but basically the recommendation is to not have the full age dataset to apply to aging the catch. That's going to have impacts on how the model is done.

DR. BARBIERI: Just a quick question. For the blueline tilefish, there was a validation study that was completed then, and that's where these results --

MR. CARMICHAEL: There was a bomb radiocarbon study that was done to validate the fish, yes, and it illustrated that there were some issues with aging them, and we had some trouble with I guess agreement between different ages and difficulty in aging them, and I think -- Did these guys get that report, Julia?

DR. REICHERT: The report is still in draft form, but that study was completed, and that manuscript will be submitted shortly. There was a -- I forgot how many years, but the age structure was validated, but there was a consistent shift in ages, which we see -- George can probably speak to that too, but which we see in a number of deepwater species in this region also, and so it's consistent with those findings. I believe the age workshop concluded that the structure of the increments was so complex that they did not feel comfortable assigning ages, but that's all that I know, and hopefully we will, at some point, get a workshop report.

MR. CARMICHAEL: We have a project coming up with black grouper, and you've got a terms of reference to look at for that. This will be done by the State of Florida. It's going to be a SEDAR benchmark approach assessment. Do we have the schedule? Yes. We have the schedule and terms of reference for you guys to look at.

Then the Steering Committee met in September and approved the assessment schedule. You've got the report from the Steering Committee, and, if you look in there, it has a list of what projects have been selected. One of the things the Steering Committee did was to really support the idea of the research track process that we've talked about, and so you would have the assessment tool developed through this research process, a little more open-ended than what we now have with the benchmark, and then one of the important things is that that research track would not be providing the stock assessment used for management.

Following the research track, and once the peer review has occurred and you guys have had a chance to look at that tool developed, then the most recent data would be added to that model framework through what's called an operational assessment, and that's what would then come to you to develop your management advice. We're going to deal with that with scamp, the Gulf and South Atlantic scamp, and also looking at cobia, and so we're going to see how this works out. Over time, we will develop the guidelines, more detailed guidelines, within SEDAR for how that works, but just be aware that some of these upcoming assessments are going to be done a little bit different than some of the past assessments.

MR. HARTIG: So you made a decision? You had talked somewhat about gray snapper.

MR. CARMICHAEL: Gray snapper, no we didn't add gray snapper to the list for anything through 2020.

SSC MEMBER: Gray snapper is going on in the Gulf of Mexico.

MR. CARMICHAEL: We're not doing the South Atlantic. It's been discussed in the Gulf, but not within the South Atlantic, and so I was going to say, if you go to Table 1, you can see this is through 2020, the things that the South Atlantic has put on their priority list. That's a quick rundown of what the issues are.

Now, the action items we have are to consider the goliath grouper assessment. It's really up to you all. We have included here the regular actions that we look at for any assessment, and so we want to see how much you want to dig into goliath grouper and whether or not you think you can do anything with that. I don't know. Then we will also deal with these other couple of items, to

make approvals and get guidance for SEDAR. I guess things start there, with goliath, and see what you want.

DR. REICHERT: Yes, and I think the report was in the briefing book, and I think it's important, most importantly, if the committee feels that there are issues with that report and do we disagree with the findings of the review panel.

DR. SERCHUK: Mr. Chairman, can I make a comment about the research track process?

DR. REICHERT: Let's do that when we get to that point. Let's do the goliath grouper and then we will do the other, and so we will do that in just a little bit, but let's stick with goliath grouper first. I did not see anyone who disagreed with the findings of the review panel, which means that the assessment was not sufficient for management advice. John, I feel that that means that we don't necessarily go through all the terms of reference, and that we just let the council know that we agree with the review panel's findings. I do want to thank the assessment panel. They worked very hard during the review workshop to provide us with additional model runs and presented some of the information that we requested. Myself and Carolyn were the two members of this SSC's review panel.

MR. HARTIG: Are you leaving goliath?

DR. REICHERT: I am leaving goliath unless you want to say something about goliath.

MR. HARTIG: I think this is the third assessment that we've done on goliath, and I don't think any of them have been accepted for management, and so I would just ask, where do we go from here with goliath? What is the future of goliath? Can it be assessed? Can we ever get the information needed to assess that stock based on no landings for that species? Do we go and have some kind of research that we tried before? I mean we had a research, more or less, set-aside or whatever you want to call it of 800 animals that we were going to sacrifice, to find out if the ages between the fin rays and the otoliths were comparable. We do need to collect some data on this animal and at least find out if we can entertain some catch level at some time.

DR. REICHERT: The review panel actually made a number of research recommendations, but, Luiz, to that point.

DR. BARBIERI: Yes, and obviously I've been thinking a lot about the outcome of that assessment and the data inputs, and I think that this last assessment had a number of issues, problems, analytical and data input problems, that were, to some extent, egregious and caused some problems. Having said that, there are some fundamental issues, and I remember, and I was telling John at lunch, but I remember in 2002, late 2002, and I think that was SEDAR 3, and we were discussing the potential of conducting a stock assessment on goliath grouper, and that assessment was aborted at the data workshop because the data wasn't considered sufficient.

Then, after that, Ben, yes, we had three other attempts, and none of them have been successful, but the fundamental issue here, and Fred talking about tuna earlier brought this up, is this issue about having indices of abundance that are really index and population abundance versus just high catch rates in high-density areas.

The distributional range of the surveys that we have in place right now are so limited over such a small portion of the stock that we can't really consciously say that they represent the abundance of the stock over the entire distributional range or even most of the distributional range outside of South Florida.

That's an issue that is a fundamental data issue. Until that issue is addressed, since we don't have landings information, we're not going to be able to do anything meaningful with goliath. I think that additional information on the life history will be very helpful, understanding how much the age composition has rebuilt and finding out more about reproduction and whether they are hermaphroditic or not. All of this would be very helpful, but I don't believe that we can do much, in terms of providing stock status determination, over a significant portion of the stock until we have a better distribution of surveys that can inform what the abundance of the stock is.

DR. REICHERT: Thank you, Luiz. Any other questions or concerns? Let's move to the blueline tilefish stock ID workshop. The action item is to review the findings of that stock ID workshop. The report was in your briefing book. The conclusions were basically that the blueline tilefish is one stock from the Gulf of Mexico into the South Atlantic and the Mid-Atlantic. George and Fred and John were part of that workshop, and I am asking if anyone has any comments or issues with the findings of that workshop.

MR. GRIMES: To use Fred's parlance, I was sort of perplexed at the conclusion that the Gulf of Mexico and the South Atlantic Bight should be one stock for management. I was reading through the documents that we were given as the SEDAR Steering Committee recommendations, and it seemed to say -- I am putting words in their mouths, but that, unless there was a compelling reason to do so, you wouldn't really violate the geographic boundaries of the councils in describing stocks or in defining stocks.

It also seems to me to be kind of without precedent for the co-occurring species, other things, like red snapper and vermilion snapper and red porgy and so on that are -- They more or less co-occur with them, and you haven't done it with them, and so this is a new way of doing things, and I am not a geneticist, but the genetic data seems like not a particularly compelling reason to make it a separate stock. I have always viewed that as a one-way test.

If you find important differences in the genetics, that tells you that they are clearly distinct stocks, but, unless things have changed, I thought that a fairly small percentage of mixing between adjacent stocks will make them look genetically homogenous. Suppose it's 20 percent mixing, which is surely going to make them look homogenous. That means that 80 percent of the impact of fishing on the stock is just on that stock. Why would you not call it a separate stock for management in a situation like that?

Genetics, seems to me, to be more like providing you information that's relevant on an evolutionary time scale as opposed to ecological ones, and, for that purpose and for the purpose of establishing stock boundaries for management, you need to be looking more at things that actually can tell you what mixing rates are, otolith microchemistry or microstructure or shape analysis or some sort of thing like that. I wondered, when I was reading the report, is there is length information on these stocks, and so what about age composition? What about trying to track the year classes over years in the different regions? If there are strong year classes, which you just

about find in every fishery, are they the same in the Gulf of Mexico that they are in the South Atlantic? Probably not.

I know that the aging, I guess, was a big bugaboo there, but, hell, you could have -- I don't know, but aged the catch off of a growth curve or something, which I know smears the devil out of all the age comps, but, still, it might have been useful as a way of looking at that strength of year classes through time in the different regions anyway. I guess that's my two-cents worth.

DR. REICHERT: Thank you, Church. I was going to ask either George or John or Fred, who were at the workshop, to comment, and then I will give you an opportunity.

DR. SEDBERRY: I agree with everything you said. It only takes a few individuals every generation to mix up the genetics, and we have tagged thousands of gag in the South Atlantic, and a handful of them have ended in the Gulf, and the same way for greater amberjack, but, when you look at the genetics of those two species, plus red porgy, there is no difference between the Gulf and the South Atlantic, but it's just a limited amount of movement that's going on. For management purposes, we really need to manage on the bulk of the population that's being fished, and so I agree with you.

DR. REICHERT: I want to make sure that we all understand. You guys are talking about the break in between the Atlantic and the Gulf and not necessarily the break between the South Atlantic and the Mid-Atlantic, correct?

DR. SEDBERRY: That's a different question. The genetic homogeneity goes from Hudson Canyon to the northeastern Gulf, and, to me, there is a much greater possibility of mixing just in larval distribution between the South Atlantic and the Mid-Atlantic than there is between the Gulf and the South Atlantic, and I'm sure there is some data around to show that, but I'm just saying it kind of off the top of my head. To answer Marcel's question about our comments though, I think we are just talking about the difference between the Gulf and the South Atlantic.

Then the other thing was that they found, in the genetic studies, and they used two independent studies with two independent markers, one mitochondrial DNA and another nuclear microsatellite, but they found very high genetic diversity and no indication of population bottlenecks or no indication that the fishery has at any time reduced the population size down to a very low level, and they also determined that the genetic data couldn't say anything about a migration or movement of blueline tilefish from the South Atlantic to the Mid-Atlantic. There is nothing in the DNA data that can show that that has happened, other than they're connected, but there is no information that shows that there has been a movement of the biomass.

DR. REICHERT: Anyone else?

DR. SHAROV: I don't know whether we need that much of a discussion, but it will probably belong more to the further data workshop and stock assessment workshop. That's probably where the decisions would be made, but, since there is an opportunity to comment, I like the idea that one approach -- Had the genetic studies determined that there were separate populations, then it would have been clear that we would have to manage them as separate stock units.

You can have a single population from a genetics point of view, but, unless there is extensive migrations and mixing occurring on an annual basis, as a part of the seasonal migrations, et cetera, you may have a genetically-homogenous population, but you could have it locally exploited at very different levels, and it is totally logical and useful to break the whole population into the management units, which we have quite a lot of examples for that.

That seems to be a logical way to proceed. Even in the blueline tilefish example, a migration of the fishery from the South Atlantic region into the Mid-Atlantic region, as the size of the fish has changed and the new resources were tapped in, it probably indicates that we do have regional differences in exploitation rates, and they're at a sufficiently large scale that those should be managed separately.

DR. SERCHUK: One of the things that we all know about is be careful what you ask for. I think people went into -- They knew the genetics work was going on, and they had preconceived notions that somehow the animals themselves sort themselves out by arbitrary management boundaries, which were cut off by states, and I think, low and behold, they were surprised that the animals don't listen to humans.

The animals don't know where state boundaries are, in many cases, and so the genetics work was done, and it was very powerful. It's not the genetics of twenty-five years ago. There are lots of advances in genetics, and I sat with that group, because I was a skeptic, and I thought I could ask the questions, but I was convinced, after being part of the group and then a group that reported out in plenary -- As George had indicated, the results were very powerful.

They were very powerful that there was no difference in the genetic signature between the Mid-Atlantic and the South Atlantic. There was, to be sure, I think only fifteen samples that had been collected on the Florida Shelf, not large, but there was, in the pairwise test, there was no difference that could be discerned between those Florida Shelf samples and the samples from the South Atlantic.

They hypothesized why this might happen, and it was clear that there are some instances where the transfer of larval products from the Gulf through the Florida Straits, over a protracted spawning period could give that homogeneity that they found. They discounted, to a large extent, that it was movement of adults, but there are so many unknowns here, and we really don't have a mechanistic understanding of why the genetic homogeneity is there, but clearly it was there.

Having said that, this was a surprise, I think, to certainly between the understanding that there would be a significant difference between the Mid-Atlantic and the South Atlantic, but the question then became, okay, how are we going to go forward with the assessment, because that was the issue. The issue was should we go forward with the assessment with three stocks or two stocks? A decision had to be made there of how to proceed.

Having localized effects, as pointed out by Alexi, that can happen in any stock. Even in a uniform stock, you can have local depletion, even within a stock unit, and so there are certainly spatial aspects to it, but the group decided, because there was no evidence of any differences across the range for the samples, that they would proceed with going forward in the next stage for setting up the assessment in that fashion.

That doesn't mean that you have to manage it that way, and it doesn't even mean when you have genetic differences between stocks that you have to manage them as stocks. If they grow up relatively the same way and they mature at the same size, really all you have to be concerned about is gene pool, and that's protect them during the spawning period. Make sure that they have enough protection, but, if they have the same demographics, then you can apply, in theory, a uniform approach.

The other thing to think about is so the managers have some flexibility here. They could go and say we're going to break it up this way. In fact, one of the questions was, because of the data and the underlying abundance of blueline, how is the assessment unit going to be subsequently decomposed into management units, because that was the question that came back to the group. Have I said enough?

DR. REICHERT: Yes, and Mike wanted to make a comment. I understand that although that latter point may be a management issue, the question then for us will become what does that do to the potential risk of overfishing, but go ahead, Mike.

DR. ERRIGO: I just wanted to clarify a few things. I was at the workshop. I sat in the spatial distribution group, which is basically the location of any of the landings or independent survey data of where blueline occur. One thing is we tried to make a distinct -- We tried to distinguish between the biological stock and what the assessment should include and the management stock or the management unit.

Just because you assess the stock from the Mid-Atlantic around into the Gulf, it does not mean that you have to manage it that way. You can still break it at the council boundaries if you have some way to divvy up the pieces of the pie. There are many ways we can do that, but that is the -- We wanted to make that distinction.

The other thing is, yes, there was -- The genetics data showed that there was no difference, and there could be a rather small amount of mixing that homogenizes the population, but there was no difference, but that wasn't the only piece of information that caused the determination made by the workshop.

There was spatial data, which convinced our group that this may actually run into the Gulf. There was an independent survey in the Gulf, the video survey, which showed blueline tilefish occurring around the Florida Shelf down all the way into the Keys continuously. It got sparser along the southern edge, on the west side, but they were there and around to the Keys, and then the survey stops. Then we know that there is plenty of landings, recreationally and commercially, in the Keys and up the Florida coast. We said, well, it's kind of a continuous population that goes all the way around Florida, and they showed no genetic difference, and so they're not refuting that call with genetics, and so that's where that determination came from.

DR. REICHERT: I believe, in summary, there are some concerns on the committee with the conclusions of the workshop. We have that review the 28th, and so I encourage SSC members to participate in that webinar to express concerns if you have them. Is that all we need for the --

MR. CARMICHAEL: That's all we need for stock ID. That's not all we need for -- We have not addressed all of our action items. That is the stock ID item, but you've got a couple more things.

DR. REICHERT: Yes, I understand that.

MR. CARMICHAEL: You've got at least one more for blueline tilefish that I think we should at least take care of, but I think we should try to get through the rest, because we have a lot to do tomorrow.

DR. REICHERT: That was my question, actually. I said it's about ten to six, and so I was going to suggest to the committee to go through the agenda items that were scheduled for today, so we can start fresh tomorrow, and so that's what I wanted to suggest.

MR. CARMICHAEL: I am onboard with that. Sometimes Chairs start saying it's ten to and they mean, let's go, and so let's not. We've got some more to do. Julia is going to go over the blueline tilefish --

DR. BARBIERI: Your previous Chair was a little more lax with that. This one seems to be right on the ball.

DR. REICHERT: Before you do that, Fred.

DR. SERCHUK: Sorry, Mr. Chairman, but you ran through goliath grouper really quickly, and I do have some concerns, not about the decisions that were made, but I am concerned about we have a benchmark that was not accepted as best scientific information available. We had the same thing that happened with gray triggerfish, as I recall, at our May meeting. I am thinking we have invested a lot of time and resources into benchmark assessments, and I am trying -- I think it's important, at least to me, of are there lessons to be learned from this.

I am concerned that, one, that this has happened. I am not saying that these things don't happen. They do, even in the best circumstances, but we try -- On a benchmark, you should try to minimize, if at all possible, this happening. The reason I bring this up is when I've seen, the few times, the rare times, but they have occurred, that assessments have not made it through the benchmark process in New England or in the Northeast, and let me put it that way, but it's because the input from the experts hasn't been given at an early enough stage. You mentioned the data workshop and you mentioned the assessment workshop.

The reviewers, and, in those cases, they are CIE reviewers, but they have come and said that they wished they could have participated at an earlier stage and, rather than giving a thumbs-up or a thumbs-down, really, at the review process, getting in, because we might have done something different. I am not saying that's the case here, but I'm saying I think we ought to think about, one, how can we minimize -- Is it possible to discuss to minimize the probability of something going through a benchmark and not being accepted as best scientific information available, and also, what are the decision rules that happen if it doesn't? Should we think about that beforehand, a fallback, a Plan B or a Plan C, if that should happen, or do we want to take these things on a case-by-case basis? Really, I'm looking for an autopsy, a postmortem, of what we do in these cases, when they occur. Since I've only been here for a year, this has happened twice, and so I am concerned.

DR. SHAROV: There is a correlation there.

DR. SERCHUK: I'm sorry. I'm leaving.

DR. REICHERT: Two points, and, John, correct me if I'm wrong, but we did involve CIE reviewers in the earlier stage, and that was not a good experiment, or was it?

MR. CARMICHAEL: SEDAR has dealt with that, and Fred is probably aware of the issues with the CIE wanting to maintain a reviewer-only role, and we really tried to get them more engaged in the process in the assessment stages, even the data stages, the earliest in SEDAR, and that just really became untenable with the insistence upon a reviewer role, but I think we totally share your sentiment in that, that getting those experts involved much earlier on would be ideal and preferred.

DR. REICHERT: I think that led to a higher involvement of SSC members in the entire process, because now -- Previously, the SSC was not involved in data workshops and assessment workshops, and now we are, and so that is addressed, to some point. The other point, and then I will get to Luiz, is that I think there was somewhat of a postmortem done, and I will open the floor to Luiz, because this was discussed at the SEDAR Steering Committee meeting also, correct?

DR. BARBIERI: Not in any level of detail. Fred, the fundamental issue here that I think has been a take-home message for us is we've got to go back, I think, to our review panel report and look at the report and say, okay, what are the issues here that were fundamental to the completion of this assessment, and I can tell you, in the case of goliath grouper, I don't know why we kept doing it, because, if I go back to 2002, there is already there, very clearly stated, recommendations of data that should have been collected for us to be able to complete a successful assessment.

It's no surprise that if fourteen years later we haven't really put those surveys or whatever data collection processes in place, it's going to be a self-fulfilling prophecy of defeat, and so I think this is a complicated conversation, because we always come across, in a way, as wanting more and more and, and we put pressure on the Science Center, and we put pressure on all the others involved in managing these budgets that handle on the programs, and it's very complicated.

I don't mean to just say, okay, this is all data-driven and we should just get more and more and more data, but there has to be an effort. I can tell you that the next assessments that are going to come out of the Gulf, and we have already noticed, since we had tens of millions of dollars of additional survey work and data collection in the Gulf, that the assessments are going to come out much better informed than they are over here, because there has been investments over there, unfortunately due to the oil spill, but they have generated an amount of data collection and surveys that have gone up six to eight times the level of frequency and scope and geographic area coverage, but that has to be something that -- I mean, we had, regionally here, organized by SEDAR -- SEDAR took the lead, and John was involved and others here were involved, Marcel for sure, in organizing in Beaufort a fisheries-independent monitoring workshop that was going to identify where to go.

There are recommendations that came out of that, and we haven't been able -- Is there anything that we can do to increase the amount of resources that are directed towards this large-scale data collection program, especially fisheries-independent, in our area? I mean, if we look, historically, MARMAP has suffered budget cuts progressively that have actually reduced their ability. There were gears that have been discontinued in surveys, and the extent of the survey has suffered. What

I am saying is, to me, this is not as much a complicated issue as we have some data shortages that are absolutely critical. Until those get addressed, I don't see a way, really, out of this conundrum.

MR. CARMICHAEL: I wanted to say that I share Fred's concern, when I put on my SEDAR hat, to have these assessments not go through. Triggerfish was the second time that we had gone down the triggerfish path in hoping to assess it. Later on in this meeting, we're going to talk about a process for you guys reviewing more complicated analyses, kind of a workgroup type of approach, to let some members dig into some topics in greater detail, and I see this as an autopsy of these assessments and try to figure out what role data played and what role process played and where might perhaps the SEDAR terms of reference be better crafted, so that we get assessment information and we get management advice when we incur the costs of a benchmark assessment process and don't come out and say, well, we couldn't really go forward on this.

I see that as being a topic that's probably far beyond what we do in one meeting, but I think a group of SSC members, a handful, could get together and maybe really dig into the assessment process. It drags over eighteen months or so, and so it wouldn't be a small undertaking, but if some folks are interested in doing that, I can see that as being of some real value to the council and to the SEDAR process and maybe even tying it back into the research track, as that plays out and how that may help us with this goal of not having these projects come through and not give us some advice for management. We have written the terms of reference to try and avoid this from happening, and we have had a couple of cases now where it has, and it is a problem.

DR. SERCHUK: Two points. One, I wasn't trying to be critical of actually what happened there with goliath grouper. My concern is that if we've gone through the process that we should learn from it, and that's all, particularly when we think about putting other things in the benchmark process into the track process.

We really need to be very critical that we have sufficient information and that there will be a high probability that we will get a successful assessment. That may not happen in all cases, but none of us want to play the videotape again and get the same result. We want to make sure there is something that will promote success, and that's the only reason I am bringing this up. I know we're strapped for time, but I think we need to learn the lessons as we go forward in trying to plan, and that's all, Mr. Chairman, and thank you.

DR. REICHERT: Thanks.

MS. BYRD: Okay. I want to go back to SEDAR 50, blueline tilefish, and I want to go over who is appointed to the different stages of that workshop. If you were appointed, I know you've gotten emails from me. Since the last time you guys have seen this schedule, there was a delay of about three months, to try to deal with the aging issue, and so the data workshop is going to be January 23 through 27 of 2017, and I have Anne and Marcel as the participants for that.

The assessment workshop will be the week of May 22, 2017, and there are going to webinars in advance and after that. Right now, the only representative we have is Alexei for that workshop. Fred was going to be on the assessment panel, but, with the shifting of the schedule, he is no longer available, and so we're looking for another one or two other SSC members to participate in the assessment stage. Then, currently, for the review stage, which is August 29 through 31, we have

Scott as the Chair and then Laura Lee and Church are the reviewers, and so I am looking for one to two SSC members to participate in the assessment portion of the blueline tilefish review.

DR. REICHERT: Is there anyone available and interested to participate in the assessment workshop in May?

MS. BYRD: The week of May 22.

DR. REICHERT: Anyone?

DR. BARBIERI: I am.

DR. REICHERT: Thank you, Luiz. Anyone else? Robert. Thank you.

MS. BYRD: Great. Thank you. Then I also wanted, before turning things over to Julie, I also wanted to quickly update you guys on a black seabass standard assessment. At the SEDAR Steering Committee, this was added, and the general timing for this assessment is that it will begin in February or March of 2017 and then be complete in time for you guys to review at your fall 2017 meeting. We have draft terms of reference and a draft schedule that's been sent to the Science Center for review, and so that's why you guys don't have that. We're waiting to get input from those guys.

The plan is for this to take place over a series of webinars, similar to red grouper. Again, this is a standard assessment. The reason it is a standard assessment is for the consideration of inclusion of the SERFS video index, primarily, and so the draft terms of reference look very similar to red grouper. The two kind of things for consideration are inclusion of the SERFS video index and then updating the BAM model to the latest configuration, and so those are the two things under there. I wanted to mention that, to provide an opportunity for you guys to provide any other feedback on that now, or we could also send you, via email, the draft terms of reference, after we get feedback from the Science Center.

DR. REICHERT: I think the latter would probably be fine. My question to you is do you need SSC reps for that assessment, and how many do you need?

MS. BYRD: Yes, and so we would like two to three representatives for that assessment. Again, it would be over webinars. There would be likely four to five webinars going from February through August or September. That will include a data scoping webinar and three assessment webinars or so.

DR. REICHERT: Can you remind us that this is to be completed when?

MS. BYRD: By your October SSC meeting.

DR. REICHERT: 2017.

MS. BYRD: Yes, 2017.

DR. REICHERT: Are there any SSC members who are available to participate in webinars for the black sea bass stock assessment? Anne, thank you. George, thank you. Jeff, thank you. Excellent. Thank you so much.

MR. CARMICHAEL: Now we're going to turn it over to Julie Neer for the black grouper, and so she will be your black grouper assessment coordinator.

DR. NEER: Just a bit of a follow-up, and this leads in well from the discussion on goliath. One of the things that did come out of the goliath, in terms of learning how to do better, is the State of Florida and SEDAR have had a variety of different ways that we have worked together to produce these assessments.

Over the last couple of years, it had been only review that SEDAR would come in, and the State of Florida did all the assessments themselves, and that proved to be a bit of an issue with the last two assessments, particularly with goliath, and some of the concerns that the reviewers brought out were if the data had been more scrutinized by more people, perhaps these issues would have been caught earlier in the process.

Because of that, Florida has come back into the fold and is doing full SEDAR. All three workshops are going to be organized by SEDAR again. Florida is still leading the assessment effort, and so that explains why this is coming to you a little bit later than you would normally be asked for participants, because the whole thing is starting in like two months, and so we do have a schedule, which didn't make it in your briefing books at the time, because we didn't have it at the time. The council has yet to approve it, but we are actually starting the process come January.

The big thing is we have a term of reference, which I think you guys do have for your review, if you could pull that up, and we will start with that. The terms of reference that are used here are pretty much the sort of standard template terms of reference that often come to you guys as a starting point. This is a joint assessment with the Gulf of Mexico as well, and so you guys are seeing these terms of reference first. They will be reviewing them. Unfortunately, they don't have any additional SSC meetings for the rest of the year, and so they will probably be reviewing them via webinar or email or some other form.

You guys are welcome to make comments or questions or clarifications to this term of reference. Any additions or modifications you have, I will pass on to the Gulf for their review as well, and then these will ultimately go to this council for review in December.

DR. REICHERT: Does anyone have any comments or changes to the terms of reference or concerns to the terms of reference?

MR. CARMICHAEL: It's Attachment 10.

DR. REICHERT: Thanks, John.

DR. NEER: Just one note. I know we've been talking about stock ID, which is going to come up with SEDAR 51, which is my next topic, and this one, black grouper, was sort of identified as one of the species that we have pretty much already figured out what the stock ID is, in terms of its

one assessment. The councils already have mechanisms in place to handle the ACLs and the management components.

Other than we're going to, again, just as every SEDAR, review if there's any new information that leads us to different -- We're not holding a separate stock ID sort of workshop or process for black grouper, since it seems to be fairly well understood that it's essentially one stock and the councils know how to handle it. That's why that component is not in here and Number 1 is not expanded, as of this date, of the terms of reference.

DR. REICHERT: Thank you. Any comments? Seeing none, then we approve of the terms of reference for this assessment.

DR. NEER: All right. Next, I now need participants for all three stages of these workshops as well. We have a data workshop scheduled for the week of March 13. We are hoping for beautiful St. Pete. All three of these workshops are going to be in St. Pete if we can swing it. Definitely the AW and RW. The DW, we're having a lot of trouble finding hotels large enough for data workshops in lovely St. Pete, but we're working on it.

March 13, the week of March 13, would be the data workshop week. The assessment workshop, we are having a short in-person workshop in addition to webinars. Because of the joint nature of the two councils, it was deemed important to have a physical in-person workshop. That would be the last week of June, June 27 through 29, probably two-and-a-half days. Then a review workshop will be the week of November 14 through 16. It's, again, three days. Does anyone want to come and learn about black grouper?

DR. REICHERT: Fred, are you volunteering?

DR. SERCHUK: I will volunteer for the review workshop in November.

DR. NEER: Yes, in November, the 14th through 16th. Thank you.

DR. REICHERT: I can do the assessment workshop. Carolyn will do review, and so we have --

DR. NEER: We have two reviewers, which is perfect, and you will both be reviewers. The Gulf Council will be providing the SSC Chair for the review workshop. That was already worked out.

DR. REICHERT: So we have one data workshop, one assessment workshop, and two review workshops, and so we need two more people for --

DR. ERRIGO: For the assessment, we have you and Luiz.

DR. REICHERT: Sorry. Robert and Alexi? Assessment.

DR. NEER: We will take a third assessment person.

DR. REICHERT: Okay. Alexi?

DR. SHAROV: I can do assessment or I can do whatever you need.

DR. NEER: We could just add all the names, and the council can select who can do the review, because we have more than we need. We only need two for review.

DR. REICHERT: You're available for both the review and the assessment workshop? Are you volunteering for -- I think you had your hand up, Eric.

DR. JOHNSON: I can't do the assessment, but --

DR. REICHERT: Could you do the data workshop, possibly?

DR. JOHNSON: I would have to check.

DR. NEER: It's the week of March 13.

DR. REICHERT: Okay. Robert is potentially available for the data workshop.

DR. NEER: That would be awesome. Thank you.

DR. REICHERT: Thank you. That's great to have so many names already, and so I will ask Julie to let the individual members know after the selection.

DR. NEER: Yes, the council will make that selection in December, and I will contact everyone who has been appointed and what they've been appointed to, to refresh their memory, and, as I said, it's a joint assessment, and so half the panel will be South Atlantic representation and half the panel will be Gulf Council representation, and that also goes for the other participants that will be appointed.

DR. REICHERT: Amy, you said review, right? Okay. Thanks. I just want to make sure that this will come to us in our spring of 2018 meeting.

DR. NEER: Yes, April. That is the plan.

DR. REICHERT: Thank you. With a report in June of that year to the council.

DR. NEER: Yes, to the council in June and to you guys in April is the goal.

DR. REICHERT: Okay. Anything else, Julie?

DR. NEER: On 48, no. 51 is next. SEDAR 51 somehow, unfortunately, we neglected to put that on your overview. SEDAR 51 is Gulf of Mexico gray snapper. However, because it's never been assessed, we are doing this stock ID review process. We are doing a mini process compared to what was done in blueline tilefish. The Steering Committee has a very elaborate process that's going to go for all the new stock IDs forward, but these two were already underway, and so we needed to make a modified process.

What is happening with stock ID for SEDAR 51, gray snapper, is we are holding a couple of webinars. The webinars are going to be starting -- I think the first one is -- We had, actually, our

scoping call last week, before we had appointments from you guys, just to gather information and literature and data that the panel would like to have available for their actual review.

The stock ID review is going to take place during two webinars. The first one, I believe it's November 14, but I will double-check the date. Yes, November 14 is the first webinar. It's a Monday, and, if we require a second webinar, if additional information or additional discussion needs to happen, that will be happening sometime in December.

What I am looking for, initially, is a couple of SSC members to participate in that stock ID component. If it turns out that the Gulf and the South Atlantic should all be modeled as one and that's the way we go forward, then I will ultimately need participants for all of SEDAR 51, but we're not sure that that's going to happen yet.

Right now, we're just looking for people who would be willing to be part of the stock ID process, which will consist of two or so webinars. I apologize, again, that this is sort of last-minute. We need to get the stock ID, hopefully, resolved by the end of the year, so the data people can make their data deadline of January 30. That's why I have, unfortunately, had to pick dates without the full panel being able to weigh in on when they might be available. Does anyone want to participate in the stock ID webinars for gray snapper? The first one is November 14, Monday, at 1:00 P.M.

MS. LANGE: I was wondering if that was the series of webinars that Mike already had requested input for, and I had indicated that I would be available.

DR. NEER: All right. We've got Anne.

DR. ERRIGO: We had you down as a tentative.

DR. LANGE: All right. I just wasn't sure.

DR. REICHERT: Is anyone else available for those webinars? I don't see any hands right now, but we may contact people individually to see if we can twist some arms. All right. We have one, and we may be able to come up with some other names.

DR. NEER: We have about twenty-two people on the panel right now from the Gulf appointments, because, initially, we didn't believe there was going to be any indication that we might need to include the South Atlantic, but, once again, when we looked at the data, maybe we should bring some people in to help with that, and so, again, the same process. The SSC will need to review it, and if there's a difference in the council line, you guys will have to weigh in on whether you think that's actually the way to go for management.

DR. REICHERT: Thank you. We have one more thing.

MR. CARMICHAEL: The last thing on SEDAR was guidance on future assessment priorities. One of the things the council had requested a while ago was getting information on recommendations for stocks to be considered in a data-limited SEDAR cycle. That may have been superseded, somewhat, by actions of the Steering Committee and laying out the stocks that you see here through 2019, really as a full slate. The next time there will be some capacity coming up will be in 2020 and, working around with the operational, what else we get in addition, and so I

think, looking at data-limited stocks, it would probably be 2020 before they would make their way onto the schedule, but the council is interested in this.

We also thought we were looking at the prioritization process, but, Marcel, what I think might be helpful is if we pass around the spreadsheet we were working on today for the prioritization approach and let people look at that. Then, on Thursday, at the end of the day, maybe see if there's any recommendations that folks have for future assessments that should be done.

DR. REICHERT: I think that's an excellent idea, and so that's some homework for all of you all.

DR. BOREMAN: Are you saying that what we're looking at now on the screen, these are all locked in, or are these --

DR. REICHERT: John, correct me if I'm wrong, but past 2017 are tentative, correct?

MR. CARMICHAEL: Through 2018 is locked in, and what you see there in 2019 is pretty darned close to locked. What you see here is what the council and the Steering Committee have all worked out to what we would like to have done.

DR. REICHERT: Sorry. I looked at the completion dates.

DR. BOREMAN: So the four hours we spent today talking about priorities won't really kick in until about 2020?

MR. CARMICHAEL: Right.

DR. BOREMAN: Which is why the NRCC didn't spend much time on priorities.

DR. SERCHUK: Let me ask a question. I see that there are two research track assessments that are going on, more or less concurrently. From my perspective, without knowing anything about these things, I think that's a bad idea, and I think it's a bad idea, and maybe there's nothing you can do about it, but I actually think that you ought to go through the research track once and iron out any difficulties that may come, which typically happen the first time you do things, before you set upon another one to go on concurrently. I realize, alternatively, you could have them both go concurrently and then find out from each of them how they run and take the best workings of either, but I am concerned that we're moving ahead with a new process concurrently without really going through the process once.

DR. REICHERT: We can note that as a concern. Did the SEDAR Steering Committee have any discussion to that effect?

MR. CARMICHAEL: Yes, that is noted, and the Steering Committee did have discussion to that effect. When we first talked about it, the plan was the scamp would be a pilot of the process. Then, at the last meeting, there was -- Looking more into the process, I think there was a little more comfort with it and interest in getting to a point much sooner where we can increase the productivity of the overall SEDAR process. The research track has been laid out with that promise, really, and so they were interested in getting into the research track faster and kind of looking at

multiple iterations of it and seeing how it may go, and recognizing that we may make some adjustments to it along the way.

DR. DUVAL: Fred, we did have a lot of discussion about that, and I think one of the things that played into, in particular, cobia being moved into a research track slot was the council made a motion at this past meeting to delay the cobia assessment until 2019 data could be included, and so there is some ongoing research that I think has been brought up here today in terms of tagging and genetics work that council members were interested in seeing.

There was also some concern that, with Framework Amendment 4 having been approved and hopefully becoming effective early next year, that folks wanted a couple of years of stability in landings, and so there are some of us that had some concerns about delaying new updated management advice until potentially 2020, but we're trying to figure out how to work a new assessment for cobia into the schedule, and so we went around and around the horn, and we came back to, well, if we put off a benchmark assessment for cobia until 2020, effectively, then we might as well go ahead and do a research track, and so let's try to work that into the schedule and follow up with an operational, and so I just wanted to add that little bit of detail.

DR. SERCHUK: I don't know if this is the time to get into discussing the research track, because we haven't had any discussion of it, Mr. Chairman. We've talked about it before, but I have some issues that I think deserve some discussion here. Is now the time to do it or do you --

DR. REICHERT: I would say now is not the time to do that. What I can do is we can talk about making that a point of the agenda for the next meeting.

DR. SERCHUK: Let me say this one thing. The Northeast has been involved with the research track for six years. I was heavily involved with developing that process. They haven't had one assessment go through the research track, not one. I think it would be useful for the SSC to find out why that is the case. They were committed to it, and it hasn't happened, and another thing that I think the SSC should understand, and the council will certainly understand, is the minute a research track comes back and finds that the status of the stock, using old data, is different than the prevailing assessment or that the reference points are different, there will be enormous political pressure not to wait until an operational assessment is done two years later.

They will come back, I can tell you, because we've had this problem in the Northeast, and John can attest to it, but if you finished a research track in 2019, they will come back two months later and say, wait a second, the stock is at a much higher level, based on looking at the old data, and the reference points are different and we want the council to immediately go into an operational assessment.

DR. REICHERT: Your point is well taken, and so let's discuss it, see if we can continue that discussion at another point. There are some implications of this also for the workload of the SSC that we haven't really discussed in detail, and so we will come back to that point, but I don't think we have time now to go into this, and so thank you for that contribution.

DR. SERCHUK: I don't understand the difference or the advantage to be gained, at this point in time, if you do a research track as opposed to a benchmark.

DR. REICHERT: Again, point well taken, and we will take this up in another meeting, because, as I said, it's almost 6:30, and so we don't have time to go into that right now. John, are there any other things that we need to discuss now?

MR. CARMICHAEL: No.

DR. REICHERT: With that, we will recess. First of all, thank you for sticking with it, and we will start up tomorrow at 8:30. Thank you.

(Whereupon, the meeting recessed on October 18, 2016.)

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OCTOBER 19, 2016

WEDNESDAY MORNING SESSION

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Charleston Marriott Hotel, Charleston, South Carolina, October 19, 2016, and was called to order at 8:30 o'clock a.m. by Chairman Marcel Reichert.

DR. REICHERT: Welcome back to the SSC meeting. I want to remind everyone of something we talked about yesterday, that today we have public comment after every agenda item. For the first agenda item, the landings and ACLs, the information is in Attachment 12, and I want to remind us of the action items.

One is to review and comment with attention towards any ABC recommendation updates and consider assessment schedule and research plan implications of the landings and ACLs, and we have Dr. Mike Larkin on the line for the presentation. Mike, why don't you give us your overview?

5. 2015-2016 LANDINGS, ACLS, AND ABCS

DR. M. LARKIN: I will go ahead and start then. Thanks for changing this. I know I was supposed to talk yesterday, but thanks for changing it. This is a report that I provided which just sums up the 2015 landings, the final landings, and then also the ABCs at the end. I will start here. First, you guys are looking at the commercial landings.

You can see that the yellow highlighted means that the landings exceeded the ACL, and so, if you look at the screen here, you can see blueline tilefish are way over their ACL, at 439 percent. Then you can see the closure date of April 7, 2015. Then some of these you will see -- These are the commercial landings that I'm going over now. The commercial landings are monitored by the Science Center. They look at what landings have come in, and then they also have expansions for late reporting or future reporting, and so what have we received so far and what do we expect to get for the rest of the year.

Blueline tilefish are high, and we closed that in April, and cobia actually has in-season monitoring. You can see they're 20 percent over the ACL, but the commercial landings, there was some late reporting. There were some issues there. We didn't get the full summary of the cobia landings until after the year was over, and so that one should have been closed in-season, but we didn't realize that it went over until after.

Then golden tilefish hook and line, that one you can see is 11 percent over the ACL, and that one closed on December 8, 2015. Then you can see, in some cases, we make predictions on when we expect it to go over, but, in fact, it doesn't go over. Like the golden tilefish longline, you can see it's a 96 percent. That closed on February 19, but it didn't actually exceed the ACL, which is a good target that we have. We try to stay under the ACL, whenever possible

Then gray triggerfish, the January to June season, this one is the same situation, based on what we had so far and predictive landings, but, in this case, it was only 82 percent, and so it was even more below the ACL. We closed that on May 8, and then gray triggerfish, the other season, the July through December one, this one, based on what we had so far and predicted landings, and this one actually was 137 percent, and so it was quite a bit over there, but we closed it on September 8.

If I go to the next page, which is a continuation of the 2015 commercial landings, and this first table is all the ones that have a January through December fishing year. The next one down, which we'll go to in a minute, has split seasons, like the mackerel, but, anyway, you can see, up at the top there, the jacks. We closed that one. That one got real close, 99 percent of the ACL. I wish we could do that every time. You can see we closed it on June 23 in 2015.

Then you see another highlighting, in the yellow there, and that's snowy grouper. That one went 10 percent over the ACL. We closed that on September 22, but it still went over. Vermilion snapper, which is January through June, that one is 99 percent, and so that one closed on April 15. That was a good target there. It was right below the ACL. Then vermilion snapper, July through December, we closed that also on September 22, and that one was just 3 percent over the ACL.

Then, if you scroll down, the next table is the ones that don't have a calendar year, and so the greater amberjack, black sea bass, and the mackerels. All of these, we looked at their fishing years, because this is the 2014/2015 landings, because the 2015/2016, the 2016 landings aren't final yet, and so I provided the 2014/2015 fishing year. Anyway, all four of these were below the ACL and didn't have any closures in that 2014/2015 period.

Then if you go to the next one, now I'm going to talk about the recreational. There is more detail in the report if you want to know when we get the data and more detail on the accountability measures that were kicked in. Now I want to move on to the recreational. Blueline tilefish, we were significantly over there. We actually closed that on June 10. The cobia, which are the Atlantic cobia, which is from New York through Georgia, that one has a post-season accountability measure. It's kind of tricky, that one. You add the recreational and the commercial landings and see if it exceeded the ACL. If it has, then the next year you close it, in fact. This is 2015, and we went way over. In 2016, we closed it on June 20. The federal closure was June 20, and so that one, we did do a closure, but it just has a post-season closure.

Then, golden tilefish, that one was, you can see, about 19 percent over. That one closed on August 11. Hogfish, we had one wave that was really high and a big spike in landings there. By the time

we got those landings -- Just keep in mind the recreational landings are, at the end of a wave -- We try to get it forty-five days after the end of a wave.

For example, after the January/February wave, you will get that on April 15, at the earliest. There have been some delays there, and so you're getting it after the fact, after the wave has already taken place. Anyway, hogfish was quite a bit over the ACL, and that one closed on August 24. Then porgies actually had an accountability measure set up so that when it exceeds it, which it did in 2014, that the next year we monitor it closely, and we were watching the landings closely in 2015 for the porgies, and they weren't over, but we've only got the -- When we got the November/December landings in, then it was -- That's when it added up to 4 percent over the ACL. That one, it's just a case of when we finally had all of the landings, we realized that it exceeded the ACL for the porgies.

Then, if you scroll down more here, snowy grouper, they have -- The reason it's closed and there's only 39 percent of the ACL and it closed on September 1, that one is kind of tricky. We monitor it with a three-year average, and so we look at the last three years. For 2015, we actually looked at the landings from 2012, 2013, and 2014 and took the average of those landings, and it was high landings in two of those years. Anyway, when you take the average, that's how you use those average landings to determine when it was going to close the next year, and so that's why we closed on September 1, and that's why there's such a low percentage, only 39 percent of the ACL. Also, keep in mind that one has very low landings. The ACL alone is just 4,000, and so that one has an odd accountability measure.

Then, if you scroll down to the next one, you see the split season ones here, and so the greater amberjack, the black sea bass, the king mackerel, and Spanish mackerel. None of these exceeded their ACL, and, again, this is the 2014/2015 landings, and they didn't expect any closures either for those four stocks.

Then the next part, the next table, then I go through the accountability measures of the different commercial and recreational up above, but, anyway, this one is the ABCs. Using the 2014 landings, which stocks not only exceeded their ACL, but they also exceeded their ABC for these four stocks, and so you can see I'm adding up the commercial and the recreational landings and then the total landings and comparing that to the ACL. Then the far column, over there on the right, is the percent of the ABC.

Red snapper has a unique ABC that includes the landings and the discards. You can see, for red snapper, that I am including the commercial landings and the discards and then the recreational landings and discards. Then I add them up, and all of these are in numbers of fish. The total landings for red snapper are the landings and the discards, and you can see that it exceeded the 2015 ABC there. I ran through this pretty fast, but those are the landings for the 2015 season that exceeded their ACL and which ones exceeded their ABC. I would be happy to take any questions.

DR. REICHERT: Thank you for that.

DR. CROSSON: Mike, I'm curious -- I know it has a separate logbook program, but I never see the golden crab listed in these reports. Is there a reason for that?

DR. M. LARKIN: No, and that's a good question. If you give me one second here, I'm going to look that up. To my knowledge, and I'm trying to think, but I don't think there's been any closures in that. I am looking it up, to see if I see anything in golden crab. I'm just looking at the historical landings real quick, and it looks like those are below the ACL.

DR. CROSSON: Yes, the ACL is like two-million pounds.

DR. M. LARKIN: I can add that in the future. That's a good point. I can add that. I'm looking at 2015, and it looks like they were at only about 15 percent of their ACL, and then, in the earlier years, I think in 2013, they got all the way up to a whopping 44 percent of their ACL, and so they haven't exceeded their ACL, but I can certainly add golden crab to these reports in the future.

DR. BOREMAN: On the blueline tilefish, are the overages spread along the entire coast, or are they concentrated in a given area, like north of Cape Hatteras?

DR. M. LARKIN: That, I haven't looked at. I can certainly look into that and get back to you. I don't know if they're from just one area. I don't know, but I can look into that and get back to you, where those landings exactly came from. You're talking about recreational blueline tilefish, right?

DR. BOREMAN: Both commercial and recreational.

DR. M. LARKIN: I can look into that now and then report back to you guys later today and find out exactly where those landings came from.

DR. SERCHUK: I have a question about the consequences of exceeding the ABC. My question is are there any consequences for overfishing, because, when you exceed the ABC, in essence, as I understand it, you're overfishing.

DR. M. LARKIN: Actually, we monitor that with the OFL, and so there's two answers to that. First, the red snapper has a very unique setup in their amendment, in one of the amendments, where we determine the next season for red snapper based on whether the ABC was reached the previous year, but that one is very unique, but the other ones, we go with the OFL. Meaning, if the landings exceed the OFL, then we declare it as overfishing and write a letter to the council. Then action has to be taken. In fact, of these, and I'm looking it up real quick, there was only two of them -- South Atlantic blueline tilefish and cobia were the only ones that actually exceeded their OFL in 2015.

DR. SERCHUK: I have a question, because maybe I'm a little bit confused. If I am, I apologize, but I thought the ABC was the OFL minus -- That takes into account scientific uncertainty, and that's why it's called an ABC. There is scientific uncertainty, and so they reduce the catch from the OFL to the ABC to account for that. Then the ACL takes into account management uncertainty, and that's why, as I understood it, the recommendation -- In some cases, the ABC is the OFL. In other cases, the ABC is lower than the OFL.

In any case, I am concerned. One, I would like to know whether these same stocks had overages the year before. That's one question that perhaps you could help me with, because, if they're consistently above the ABC, that means the projections that have been made for the management

years are now not in accord with -- The catches are not in accord with the projections. Does that have some consequences? I am just wondering whether there is any attention that at all. Thank you.

DR. M. LARKIN: Sure. I will answer your first question, really. Cobia, they did not. The previous year, they did not exceed the ABC. Hogfish, we did not either that previous year. Blueline tilefish, I'll have to look it up real quick. Red snapper, that's why we haven't had a season in 2015 or 2016, because, in 2014, they exceeded their ABC, and then we had no season, because the discards were so high in 2015. Again, the ABC was exceeded. I am trying to look real quick at blueline tilefish, but you're right on in terms of -- I get them all confused in my head. Some stocks the ABC equals the OFL. In some stocks, there is a gap to take into account for scientific uncertainty between the ABC and OFL.

Another thing I need to point out is it depends on how the amendment is set up for the fishery management plan for these different stocks. Some of them have consideration, where you consider the -- In a year where there was not an assessment, then we look at the total landings and compare it to the OFL, but not every stock has that set up in their management plan. In the Gulf, they have it for all, but, in the South Atlantic, like, for example, I believe golden tilefish, and that was Amendment 37 that's going to have that into the future, we will. Currently, we do not.

Meaning, if the landings exceed the OFL in previous years, we don't do any action, but, once the FMP has that little description in there, where in a non-assessment year we can set the landings against the OFL, then we take action and declare the stock as -- If it's defined in the FMP, then we monitor those landings and compare them to the OFL and then we take action and declare them as overfishing and write a letter to the council or take action. Overfished, obviously, is a different story. You need an assessment to determine whether it's overfished.

What I am looking at is you were asking about blueline tilefish, to see if there's a trend there, if it's consistently going over, and it appears, from what I'm looking at now, that it has, from the 2014 and 2015, and so it has consistently, at least in those two years, exceeded the ABC in both years, and so I'm looking at my summary real quick. It looks like blueline tilefish had the previous year and cobia has not. They had a big spike in the landings in 2015 that we haven't seen that high in earlier years. Hogfish, I believe, did not, and red snapper has, both in 2014 and 2015. I hope I answered the questions.

DR. REICHERT: Thanks, Mike. Mr. Andy Strelcheck from the Regional Office came to the table, and do you want to address that point, Andy?

MR. STRELCHECK: I just wanted to expand on it. I agree with the comment, and it certainly has implications on the ABC going forward. Keep in mind though that underages also have implications on the ABC going forward. We don't adjust for ABC and OFL between assessments commonly. There are some fisheries where we have deducted overages from the prior year with the catch limits. We have essentially decremented the catch limit to account for those overages, but it's fairly rare, in terms of how we manage fisheries at this point.

With blueline tilefish, one thing of note is that, yes, we've had some overages, and there were some very low catch limits, but, as this SSC knows, those catch limits have gone considerably higher as of this year. One of the challenges we're facing with obviously a lot of this catch limit

monitoring is these very low catch limits, and so, yes, we're showing some high percentage overages, but, if you start looking at some of those catch limits, they are usually for species that have very low catch levels, and it's very hard, especially on the recreational side, given sampling variability, to determine exactly when we should close the fishery. It's certainly a challenge moving forward, as we try to improve our data collection and reporting methods.

DR. SERCHUK: Thank you. That was helpful. My comment relates back to our discussion yesterday about assessment frequency, and if a resource is continually, and that's why I asked about exceeding its ABC. What I gather is that we catch up with that at the next assessment, but it seems to me that that would be -- Something that exceeds its ABC let's say a couple of years in a row, that would seem to be a signal that perhaps we shouldn't wait until five years later to catch up for our assessment. There is something incongruous going on between projected catch from assessments and grossly exceeding -- I'm not talking about 110 percent or 120 percent. These are quite a bit above what was projected to be caught, and I'm just wondering whether, in light of our discussion yesterday, if that might be an important signal to bring into thinking about the next assessment. Thank you.

DR. REICHERT: Thanks, Fred. I agree with you. Any other SSC members have comments or questions relative to that point or to Mike's presentation? Remember that we had the discussion about the underages also, in terms of that is a signal that maybe something is going on, either in the fishing industry or with the population, and that should be taken into account.

DR. SERCHUK: I agree with you, and I brought this same point up, as you remember, in the last discussion, but the overfishing is a one-way street. That is, you're not penalized for underfishing. Maybe you should be, but you are penalized in the sense that a trigger comes in if you exceed the overfishing limit.

DR. REICHERT: Yes, and I would argue the same is true for the risk to the population, in terms of that direction. Any other questions or comments?

DR. SHAROV: Just very quickly, because this is one subject that if we are to go deep into it, but the measurement there, in the recreational catch, is not taken into consideration currently in the process of defining whether there was an exceedance of the ACL. The possibility of overfishing certainly is going to depend on whether there is a consistent trend, as Fred had mentioned, whether we consistently are exceeding the preset ABCs or the ACLs.

The interannual variability in the estimates of the recreational catch is one of the indicators of the stability of the estimate as well as the PSEs, and, at some point, the SSC would have to discuss how to account for the measurement there in the catch estimates and how they would relate to the setting of the ABCs based on either the percent risk, et cetera, and so that's the relevant comment, I think, that's important for the future.

DR. REICHERT: Thank you, Alexi.

DR. ERRIGO: I wanted to address John Boreman's question about blueline tilefish and where it's caught. First of all, the ACL and ABC values are only for the South Atlantic. What we did was we -- I think we decremented the values from the assessment based on average landings from the Mid-Atlantic for some certain years. In the amendment, there were a bunch of different years and

stuff that they looked at. Now we just track landings in the South Atlantic, both recreationally and commercially, and so all of the landings are coming from the South Atlantic. Recreationally, most of them are coming from Florida, a great deal from the Keys. Commercially, it's North Carolina and South Carolina.

DR. M. LARKIN: Thanks, Mike.

DR. REICHERT: Any other comments or questions or remarks?

DR. BUCKEL: The point about the underages, we had the tab yesterday in the prioritization tool about the need for a stock assessment, and we talked about maybe some things that we would ask for, similar to a rumble strip, and I think that could be added to the list. If there is underages, we can ask our industry reps if they're targeting them. If they are and they're just not getting the quota, then that adds to that need for an assessment.

DR. REICHERT: Thank you for that. I think that would be good information, and I think that's part of why we get this update at every SSC meeting, but that's a good point. Any other questions for Mike, questions or comments? No? Mike, thank you for that overview. As always, it was much appreciated.

DR. M. LARKIN: Sure. Thank you.

DR. REICHERT: What I would like to do briefly is see if there are any comments from the public, because I mentioned at the end of every agenda item today we will have that opportunity. After that, I want to briefly go through our notes, to see if we captured the essence of our discussions and concerns and see if we need to add anything and if we need to clarify anything.

MR. FEX: My comment is on blueline tile. When I first started fishing, I went longlining for snowy, back in 1989. Blueline was just a bycatch of snowy. When snowy got removed from the fishery, a lot of people shifted effort. They no longer lay the gear on the hard bottom and get the blueline tile, and so the landing trend should have gone down.

Over the last couple of years, with all these regulations, we have all tried to find other fish to catch. Blueline has been a new fish for a lot of people to start targeting again, and, since that, that's why you see the landings go up. As you see, the stock assessment shows the stock only allows for X amount of pounds, when there is probably a lot more fish out there than you see.

As you see the overages happening, it's probably just because effort has shifted back to that fish that traditionally was caught back in the 1990s, but now it's actually being targeted again, and so I think that's why your problem with the overage is happening, is people are targeting them again. Also, too, there are endorsement issues, because we endorse the golden tile. I think a few people were concerned about, okay, if they endorse that, they might endorse blueline tile, and so I think an effort shift right there might have been affected too, because of the endorsement issues. I just figured I would make that comment to you guys.

DR. REICHERT: Thank you, Kenny. I appreciate that. Are there any other members of the public who want to make a comment? Rusty.

MR. HUDSON: Thank you, Mr. Chairman. I'm Rusty Hudson. Blueline tile, having fished that since the late 1970s or the early 1980s, predominantly with bandits, targeting snowy in our region, Cape Canaveral to St. Augustine, I would generally see that 90 percent of my catch was snowy. 10 percent was a bycatch of blueline tile. That was generally not very valuable at that time.

In 1981, the bottom longline made its appearance right off of our east coast of Florida for golden tilefish. Our first blueline tile is identified in our database in 1986. Before that, for some reason, there is three or four-million pounds of blueline tile, between 1981 and 1985, in the database that was probably golden tilefish, caught on those longlines and some bandits, and so, with that said, I am just trying to say that once the snowy got taken away, especially in 2006, here recently, there is nobody targeting them. I gave you like the roll-down numbers, and that would be a nice place to check to verify what I just said.

DR. REICHERT: Thank you, Rusty. Any other members of the public who would like to comment? Seeing none, let's briefly go over the report. It's up on the left-hand screen there. I want to ask you to take a little time to read it over and see if we missed anything. Of course, you can always add to the report when the draft comes out. Are there any comments or additions? As I said, I may ask individuals to add to the report when it comes out.

DR. SHAROV: I would like to offer the correction on my point. The point I was trying to make is that it is important to consider the management error in recreational catch in the process of estimating whether we have exceeded ABC or not, which we are not doing at this point. It's not about risk, necessarily, which will come in as well, but the point was about using the management error in our process and not ignoring it.

DR. REICHERT: Thank you.

DR. SERCHUK: I just want to clarify my point, as I understand the new revisions to National Standard Number 1. National Standard 1 revisions, one of them says that you can use a multiyear evaluation to determine whether overfishing is occurring, and so the statement that if OFL is exceeded that overfishing occurs, that's not consistent now with the revisions. You can take a longer period to do it, and that's one of the reasons I asked about whether there was a pattern here. If that could be worked in here, that, I think, would provide better understanding of the situation. Thank you.

6. DISCUSSION OF TILEFISH UPDATE ASSESSMENT

DR. REICHERT: Thank you, Fred. As I said, once we have the report, please make sure that your concerns are accurately reported. Seeing no more hands, let's move to the next agenda item, the Discussion of Tilefish Update Assessment.

The Attachments 13 through 18 are relevant for this agenda item, and I want to remind you of the action items. We have a number of action items, actually, in our overview, and I won't read them all, unless the committee would like me to. I think it would be more useful to remind you of them when we discuss the individual action items, and Mike will provide us with an overview.

DR. ERRIGO: I am just going to go through Attachment 15. I thought about just making up slides, but all that was going to do was put the graphs and tables into the slides, and so I figured I will just go through the PDF. It's Attachment 15 that I will go through. The first part of this paper talks about what the differences are between the SEDAR 25 assessment and the update.

First off, there is the status determination of overfishing. In all the graphs, the blue is the update and the red is SEDAR 25, and you can see that the update is predicting a much -- It's estimating a much higher degree of overfishing occurring during the time period of the assessment than SEDAR 25 did, and the terminal estimate is above MSY, and so overfishing was currently occurring at the end of the assessment.

For spawning stock, the overfished status -- Again, red is SEDAR 25, and you see that the spawning stock increases very quickly here until the terminal year. However, the update does not show that. First off, the spawning stock drops much lower, below MSY, and then recovers much slower and then tapers off at the end, staying below SSB MSY.

In terms of MSST, again, SEDAR 25 shows this very quick uptick, and it's very far above MSST. The update does show that the stock is above MSST, but much, much closer to it than SEDAR 25 had predicted. The biomass, B over BMSY, the total biomass, is predicted to be below BMSY in the update, and it was predicted to be much higher than BMSY in SEDAR 25. Basically, this B over BMSY and SSB over SSB MSY, this was the reason why the projected catches were so much higher in SEDAR 25 than the update, because the stock was significantly above its MSY, and so we could take much higher poundage out of the stock to fish it down to MSY levels.

I put this graph in just to show that the landings that went into the update were basically identical to the landings that went into SEDAR 25, and so it wasn't like the landings that caused it. It's not like there were higher landings during this time period here, in the 1990s and 2000s. It's not like they input higher landings in the update there that caused more overfishing and lower biomass. The landings were the same. It was something else that caused fishing mortality to go up and biomass to go down. Right here, I will talk about what it was that did that.

This is another interesting graph to look at some of the differences. This is abundance at age in SEDAR 25. Anyone who was around during SEDAR 25 will remember, in 2001, this is the huge recruitment spike that happened, and I have a recruitment graph later that will show you that, but that's what this big, huge jump is right here, and then that was subsequently fished down, but this is what caused the biomass to rebuild so quickly, was this huge jump in recruitment, and you can follow it through age one, two, three, four, five, six, seven, eight, nine.

However, the other difference is, overall, the biomass is much higher. In this graph, you can see the red dots are the total abundance from SEDAR 25, and this is the abundance at age from the update. You can see that even baseline, back in time, the SEDAR 25 abundance was predicted to be much higher, and so why is that? It's because of the predicted recruitment and the R zero that was estimated in the update versus SEDAR 25, and so here is that wonderful recruitment spike that happened in 2001 that SEDAR 25 predicted.

You will see that, in the blue, it's not there. The rest of the recruitment is pretty similar to SEDAR 25, except for that. Here is a zoomed-in version, where I basically ignored the spike so that we can see better. These dark lines here are the R zero estimates. You can see that the R zero from

the update is much lower than the R zero from SEDAR 25, which causes the model to estimate lower productivity for the stock, which is why abundance is lower, even at the beginning of the time series and MSY is lower and things like that.

Why did this happen? There are several things that happened and some changes. One is the use of the new robust multinomial likelihood to estimate the age distribution, the age comps, of the catch. This sensitivity run shows the difference in F over FMSY between using the robust multinomial and the original multinomial likelihood from SEDAR 25.

This line with the dots is the current base run. This solid line down here is the update, but just using the multinomial from SEDAR 25, and you can see that the F rates are much lower and the terminal F over FMSY is showed to be not overfishing, and so it looks like the decision to use the robust multinomial caused the jump in F over FMSY. It also seemed to cause some of the decrease in spawning stock biomass over MSST and MSY. Again, the solid line is the SEDAR 25 multinomial likelihood and the dots is the base run for the update. You can see that you're much closer to MSST in the update, and you seem to be a little higher using the likelihood from SEDAR 25.

This table just shows some of the differences between the base run and the use of the SEDAR 25 multinomial. FMSY is higher in the base run. SSB MSY is lower in the base run. MSY is lower in the base run. Overfishing is occurring in the base run and not when the multinomial is used. SSB is lower than SSB MSY in the base run and not so for using the SEDAR 25 multinomial, and SSB is much closer to MSST in the base run, and so those are just the results of the sensitivity runs.

What caused these things to happen? One of the things is a shift in selectivity. Again, blue is the update. The selectivity for the commercial fleets, the longline and hand-line fleets, shifted to older ages, and so here is the shift in the longline fleet and here is the shift in the hand-line fleet, and those account for the vast majority of the landings in the golden tilefish fishery. The recreational landings are very, very tiny.

Also, what caused the shift in the selectivities is a difference in the age composition for the landings, and so I just looked at the longline, since that makes up most of the landings. Blue is the update, and you can see that the -- The red have higher compositions at the lower ages, five, six, seven, and eight, and the blue have higher compositions at the higher ages, ten, eleven, twelve, and thirteen, and so, right here, the age comps are showing -- These are combined age comps across the entire time series used, this graph here. You can see that there is a shift to older ages in the update.

I also broke it down by time periods, and so the green and the red, you will see, look almost identical. The red is SEDAR 25 combined age comps and the green are age comps from the update across the years that were used in SEDAR 25, and so 1987 to 2010. The blue are age comps from the updates for the new years of data, 2011 to 2014. You will see that there is a significant shift to older ages in the new age comps, and the reason why just those few years caused a shift in the estimate of the total selectivity is because, since age sampling increased in recent years, they make up the bulk of the samples, and so they are heavily weighted, and they caused a shift in the estimates of selectivity.

DR. REICHERT: Mike, sorry, but I've got a quick question, and I should have looked this up, but remind me, or someone else remind me, were the selectivities divvied up in blocks or was it just one selectivity for the entire series?

DR. ERRIGO: It was a single selectivity for each fleet for the entire time series.

DR. REICHERT: Thank you.

DR. SEDBERRY: Mike, do you feel that that shift is because of under-sampling in the earlier years, or do you actually think it's a shift in the age comps?

DR. ERRIGO: I couldn't say. Looking at the data, it's very sparse in the early years for ages. I don't know if bigger fish were landed earlier. I didn't look at the length comps that closely, although I don't know how many lengths there were for those earlier years either. I don't know if there anyone who fishes for golden who knows if there were bigger fish or smaller fish.

DR. REICHERT: Ben, could you address that, maybe?

MR. HARTIG: Yes, I can address that, but I had a question as well. The fishery, when it was hit very hard in the 1980s by the longline fleet, certainly it was an unexploited biomass. There were lots and lots of large fish. Through the 1990s though, fish got a lot smaller, on average. There was a lot more smaller fish sold in the catch. Now, I mean, I have fished this fish since the 1980s, at some degree. I got out of it for a while when the bandit fishery wasn't economically viable, because, after the longlines run through an area where we fish, the bandit fishery fishes, the biomass goes down substantially, and so the bandit fishery isn't as productive.

I got out of it for seven or eight years, and then I started getting back into it in the 2000s, but the interesting thing, for me, was that there were relatively low catches through the 2000s, again, and it was slowly getting better. Then, all of a sudden, all these large fish showed up out of the blue. Where in the world they came from, nobody knows.

They are still being caught in the fishery. You see the older ages in the assessment. We still catch the larger fish. One of the major problems in this assessment is that, for the recruitment indices, you've got seven years of data that you know nothing about. You don't know what's gone on for seven years, because they're fully-recruited fish at age seven, and then you don't know anything for the recruitment index.

Being involved in this fishery, again, and looking at recruitment like I do, I mean I go into areas that are shallower to fish for golden tilefish, which the smaller fish reside in, and I had not seen any recruitment, to speak of, although we had all these large fish in the fishery. When we came up, when the assessment came up before the council -- I will stop.

DR. REICHERT: No, I just have a question relative to that last remark. You said I didn't see any recruitment, and what period are you talking about?

MR. HARTIG: I am talking about pre-SEDAR 25. We had not seen much recruitment in the fishery.

DR. REICHERT: Okay. I didn't mean to interrupt you, but that was just for the clarification.

MR. HARTIG: No, that's fine. When SEDAR 25 came before the council, that was brought up. We hadn't seen recruitment, and so we wanted to be cautious about our landings going forward, and so we were, and we were pretty conservative in setting that goal, but, after that, in 2012, it does not show up in the assessment, which is a critical -- Why, I don't know, but, in 2012, there is a substantial year class in the fishery. Now, it's not going to be -- It's out of that seven-year range, and so it's not going to show up in this assessment. Hopefully it will, but the problem is the landings. I mean, it did show up in the landings, but it doesn't show up in the bubble plots and the line plots for 2012. It does not show that huge number of small fish.

There were so many of those small fish that another grade had to be developed of one to two that we have never had before. They were called peewees. That should show up at least in the market grades in South Florida. It should show up there, and that's where we saw the substantial recruitment. Now, I have told the fishermen -- They thought that the recruitment was going to show up in this assessment, and so that's why they wanted the assessment done, because they said, well, we've seen all this recruitment and you were real conservative in setting our catch limits, and so now we've seen this recruitment in the fishery, and so hopefully we'll get a better catch estimation, and, unfortunately, based on all the different things that have been done in the assessment, that's not the case, and we have reduced the fishery by sixty-plus percent.

That's a big blow to the fishermen who thought that they were going to get a better assessment out of the recruitment that they had seen, but I've been trying to explain to them that hopefully by the next assessment we will see that recruitment and maybe we will get an adjustment again of MSY levels, but it's hard to know -- Going forward, you never know what's going to happen in an assessment, but, basically, one of the major problems that the fishermen have is that you have a mathematical change in the assessment, doing statistics on statistics, which is the multi-likelihood function.

It's hard to wrap your brain around. I can't explain it to the fishermen. I can't tell the fishermen that this is what had the biggest impact in the assessment, and so my question to the SSC is what is the biological basis of the multi-likelihood multinomial or however it's -- I went down the rabbit hole last night. I spent a couple of hours reading about it, different papers, and it was really interesting. I wish I had the time to delve into the nuts and bolts of the assessment.

I know the basic parameters of an assessment and what they do. I've gone to enough assessments and participated in enough of them, but then, when you get into the inner workings of the mathematics, that is where I fall short, and I don't have the time, and I haven't had, still being a fisherman, to do that, but the question about the mathematical changes -- What I have seen since I came back to the council, from the 1990s into the 2000s, the late 2000s, seven years ago, is the assessments are based on less data, overall. The assessment scientists are really, really good at doing more with less.

One of the things that multinomial likelihood does is it allows you to use less data to inform your catch level recommendations, and so all of those things play into not collecting the amount of data you probably should be doing in the first place to inform your assessment, and so that's a real problem that I've seen through this entire process.

Now, our assessment scientists are great. They really, really do an incredible job with the information they have to give us catch level recommendations. Unfortunately, the data, in some cases, like golden tilefish, which you have a fishery-dependent index, you should be collecting the samples needed for that index, and we're not doing that. We're not collecting that amount of information, and I'm sorry that I got on my soapbox here.

You asked me a very simple question about this, but the frustrations in the fishery are really, really high. We had a group of people come into this process, in the red snapper assessment, because they were so concerned, and it was a great group of people. It was people who had a long history in the fishery. They were high-liners. They knew a lot about the fishery, and they have done -- I am getting into red snapper now, but they also are cooperating in the cooperative research for golden tilefish, which is going on now.

Based on red snapper and golden tilefish, this has been a seven or an eight-year process that they've been in and contributed mightily to the process, and they're worn out, frankly. They are worn out from doing what they have tried to do to make the assessments better and participate in the cooperative research and coming to meetings and giving their input into the data workshop and the assessment workshop and the review workshop, which all takes a lot of time and a lot of resources out of their pockets.

When a mathematical function changes the assessment, that's a real problem for them, and it's a problem for me, because if I can't have the basics in the biological impacts of the assessment, it doesn't give me a lot of confidence going forward that that's a real problem in the assessment, and I don't understand it enough, and I hope there will be a discussion of this multi-likelihood function from the SSC, so I can get a better grasp of what it does, so I can try and explain it to the fishermen. I will stop there. I have been on my soapbox way too long. Sorry, Marcel.

DR. REICHERT: Thank you, Ben, and I think that is a conversation that we need to have, because, from what Mike showed us, and I will hand it back to Mike in just a little bit to finish his presentation or his overview, and thanks, Ben, and we may call you back on the table later in the discussions.

That has a significant impact in the outcome of the assessment, and so we will have that conversation. Unless anyone has a comment or a question relative to that point, I would like to give Mike an opportunity to finish his overview, and then we can pick up the discussion. Okay, Mike.

DR. ERRIGO: I will make one last comment about this section and then move on to that -- There was another issue about the people asking about why the buffer between ABC and the OFL was so large, and that is that the age comp data starts in 1987, which, as Ben was saying, if it was fished very, very heavily in the 1980s and the larger, older fish were fished down, then that might explain why younger fish are showing up in SEDAR 25 and then we're getting older fish later on, but I would have to look at the age comps year-by-year to see if we can see a rebuilding. I haven't looked at them that closely, and so this is why the selectivity shifted right here, is the shift in the age comps.

The other section of this is people had questions about why the buffer between the OFL and the ABC seemed exceptionally large for golden tilefish, but wasn't as large for most other species that

have been assessed, and so I tried to look into that, to see what I could find out. Here is just a list of several species, the year that the assessment was completed, the P* value assigned to those species, and the percent buffer, and it's sorted by the percent buffer between the OFL and the ABC.

Tilefish is the highest here, at 38.2 percent, and it goes down from there, wreckfish and black sea bass being close to the top, and snowy and hogfish and then cobia, actually. Red grouper and cobia have very small percent buffers, and that is Atlantic cobia, from Georgia north. This is why people were asking about it. It has almost a 40 percent buffer.

These tables are just for reference. These are the SEDAR 25 projections. Starting in 2012 was the first projection year and going down, and this is the percent buffer from between the OFL and ABC, starting in 2012 and moving forward. As you can see, the percent buffers, in the first few years, is very high. It's actually even more so than the first few years of the update, and so, at first, I wanted to see, is it just the update that had this huge buffer, and it doesn't seem to be.

It seems that golden tilefish seems to have a very large buffer, in general, because SEDAR 25 had the exact same phenomenon. It has a very large buffer between OFL and ABC. This is a side-by-side comparison of the first three projection years from SEDAR 25 and the update. You can see that they are very similar, right on part with each other, and so there seems to be something about tilefish, the uncertainties in the tilefish assessment, that is causing the large buffer.

Another thing that I did was I looked at a bunch of the benchmark estimates, and these are the percent standard error, so that they can be compared across these different species, and I just tried to find different species that had larger amounts of certainty associated with them and were done more recently with the more recent modeling approaches. There are some species here that have percent standard errors, for some of these benchmarks, significantly higher than tilefish. Like snowy has much higher percent error in the SSB MSY estimate, but tilefish has very high uncertainty in the F metrics.

DR. REICHERT: Mike, remind us. The tilefish is the update or is that the previous one?

DR. ERRIGO: This is the update.

DR. REICHERT: Thank you.

DR. ERRIGO: Tilefish has a very high uncertainty in the F metrics and also very high uncertainty in the estimate of MSST and recruitment at MSY. Other than that, it's on par or lower for everything else, and so I'm not sure if it's the uncertainty in the F estimates that is causing the buffer, but I also looked at several other things. Natural mortality tends to have a lot of uncertainty associated with it, and it's explored in the MCB analysis. The existence of an independent CPUE, if there is one present, it tends to reduce uncertainty, and the amount of age samples. The more age samples there are in an age-based assessment, the lower the uncertainty should be.

Here are the species that I was looking at, tilefish and sea bass and snowy and vermilion and gag, the P* values. Here are their percent buffers. They're ordered by their percent buffers. The distribution for the natural mortality that was used in the MCB analysis is listed here. This is a truncated normal, and this is a uniform distribution, the min and max values, and this is the range of natural mortality values that was used.

There was a fairly wide range of values used for tilefish for the natural mortality, a much smaller range of values used for these species down here. Most of these species that are below tilefish had a MARMAP index, and all of the species below tilefish had significantly more age samples. Basically, the presence of an independent CPUE and the amount of age samples corresponds very well to the percent buffer decreasing for each of the species, except gag seems to be a bit of an outlier. I'm not exactly sure why.

It might have something to do with the narrow range looked at for natural mortality and also the fact that it has a good amount of age comps, and maybe things just lined up right for gag. I am not sure why that one is a little outside of the pattern, but, basically, more age samples, for the most part, and independent index. It's a narrower range of looking at natural mortality, and you get a lower percent buffer between the ABC and the OFL, for the most part, as well as the amount of variability should also play a role. If there is more variability in the samples that you do have, your percent buffer will be larger, and I didn't look at that. I don't have all the raw data, and so I couldn't really look at that. That is what I came up with for that. It just looks like tilefish has more uncertainty.

DR. REICHERT: Thank you, Mike. Any questions or remarks? I would ask, in particular, Genny, who has a particular knowledge of this assessment.

DR. NESSLAGE: Just one minor correction, and it's just minor. The MARMAP index is used in the tilefish assessment, but it has very little informative abilities, and the trend is not terribly informative. There are some age comps, and they do kind of mirror what appears to be happening when the fishery is larger, older fish later in the assessment, but, again, it's not really informing the ultimate answers very much, and so that's just a minor, minor correction.

DR. REICHERT: To that point, that longline index was binned in five-year bins also, and so that, I would say, perhaps further reduced the amount of information that it provides to the model.

DR. ERRIGO: I was going to say that's true. They did put the MARMAP data in there, in those five-year bins, but it didn't get a very high weight, and it wasn't very informative to the model, just because it was very, very coarse, and the samples were very low, but the age comps and everything were used, but the CPUE index was -- I think they might have done a sensitivity with and without it in SEDAR 25 and it made no difference.

DR. REICHERT: Thank you. Any other questions or comments to this overview? Thank you for that overview, Mike.

MR. HARTIG: Mike mentioned the number of age samples had increased in the last few years of the assessment for the tilefish update, but, if you actually look at those numbers, most of those increases were in the hook-and-line fishery and they weren't in the longline fishery. In fact, the longline samples actually declined. At least that's what I saw.

The problem with that is that the hook-and-line fishery gets 25 percent of the fishery, and so, if you increase the samples on that, you're still only increasing them to a small proportion of the fishery, and so, really, the longline is the major player, and, if we're going to increase sampling, that's where it should be done, and it wasn't done in that fashion. That's just an observation.

DR. REICHERT: Thank you.

DR. GRIMES: Ben, these large fish that you saw enter into the fishery, was there any change in where the fishing was occurring?

MR. HARTIG: Well, a little bit. A little bit, but we caught the large fish -- They do move somewhat. I know all your research says that they don't, but it looks to us, at least in that compressed area of the shelf where the Gulf Stream is so dynamic, there does seem to be some movement over time. When they're spawning, they all seem to try and come together, which would make some sense, but, in different areas, there is distribution of burrows, and they're not always in the same burrows, but they can move from different depth ranges to get into burrows, so they don't have to actually re-dig a burrow. They can go right back into burrows.

If you're fishing a bandit reel and your ten-pound lead is dragging the bottom, you can feel it go into a hole and come back out. In certain areas, we do know that there are more burrows, and these large fish -- The longline fishery hasn't changed their depths, on average. Now, there is one fisherman in particular that I know who has gone, in the last couple of years, out to substantially deeper water and caught bigger fish than he has ever caught.

Now, those fish aren't in large numbers, but they're so big that -- They're almost thirty-pound average fish, which is really, really big for South Florida tilefish, but, I mean, it works for him, because you get a better price for large, and those big fish add up much quicker than the smaller fish do. In a couple of cases, yes, but, overall, the fishery has been taken place in the same areas that we have fished over time. I have moved out to a little bit deeper water in some years. Based on the dynamics of the changes in the water temperatures we have now, with the amount of increase of upwellings, who knows what is going on with those. They've got a pretty narrow temperature, as you well know, temperature area that they want to be in.

If a really, really cold piece of water moves in, they're probably going to move to avoid it, one way or the other, and sometimes they go offshore, which is amazing, and sometimes they go inshore, and only if I had temperature stuff on my gear would I know what was impacting that, and that's not really that hard to do. You can put it actually on our weights and get some kind of temperature, and so, over time, hopefully we could answer some of those questions about movement.

DR. BARBIERI: First of all, I want to thank Mike E. for this summary that he put together. It's extremely well done and very helpful, really. I think it was very, very helpful. He went in and looked at all the information for us and summarized it very well, and so it was really well done. Second, I think for us to discuss this as an SSC, I think there is good news and bad news here.

The good news is that we can look at some of this analysis as showing the performance of our ABC control rule, to some extent, and it is informative to see that we do seem to have larger buffers associated with higher uncertainty, and so things seem to be working the way that they are supposed to.

When you look at all these different variables that Mike E. listed here, it's very clear to see that the age composition, the amount of age samples, all this large difference between stocks, is causing

different changes in the shape of that distribution of PDF there. For a given value of P*, you are going to end up with different-sized buffers, exactly the way that the methodology is supposed to work.

I think, in a way, this is good news, and I am going to step back a little bit on my soapbox from yesterday and, again, repeat, because I think that we need to face this. We are dealing with these issues about problems with our assessments or uncertainties in our assessments, but the one thing that we haven't been discussing too much is the paucity of data for some of these assessments and the fact that less-informed assessments, of course, are going to have large amounts of variability.

We are going to have -- By design, this should not be an unexpected outcome of some of these assessments. They are going to have much higher uncertainty, and there will be fluctuations in the quantities that are being estimated, because you need to make all these adjustments, and so I think this is something that we should outline in our report, Mr. Chairman, that there is an issue that is -- There is this discussion about the analytical methodologies used, but there is also the issue about data, all the information pieces going into the assessment. Until we have those addressed, it's going to be very difficult to have a different outcome.

DR. REICHERT: Thank you, Luiz.

DR. SERCHUK: I am trying to get an understanding. I understand the presentation, but I am still bothered by these large changes that occurred twenty years back or thirty years back. When I looked at the changes between the current assessment and the assessment that was done in SEDAR 25, you can see that -- This went back I think to 1982 or so on and so forth. That's incredible, to me, that with an assessment update you get systematic changes that go way back. I am alarmed by that.

The other thing that also concerns me is I'm looking at the SEDAR 25 assessment, and that ended -- The last terminal year in that assessment, I believe, was 2010, and the good year class, according to the data that were provided in that, was, I believe, the 2000 year class, which showed up as 2001 at age one.

Looking at those tables, the first thing that would have alarmed me not only was it a good year class, but it was a year class far beyond any that we had seen. The abundance at age one, according to the estimates coming from that assessment, were a magnitude higher than any other assessment that had been seen. Most of the values were 250 or 300, and this was almost 3,000. That itself should have sparked some curiosity about, well, wait a second, we haven't seen the productivity of the stock give a year class like that before and we should see it in the subsequent age compositions.

I thought, well, gee whiz, the reason you didn't see it is because you did it in 2000 and you had this 2000 year class, and, assumingly, the assessment might have been done in 2002 and 2003, which is generally the case that you have a very uncertain year class in the most recent year and you are very uncertain about it.

The assessment was done in 2010, the terminal year was in 2010. You had eight or nine years to track the abundance of that year class by any means possible. I realize it doesn't enter the commercial fishery until six, seven, eight, and nine, but you still should have had those indices,

and, when I looked at the indices of the percent age composition, they weren't any different than the regular class behind it, and I'm saying, how could you be fooled? There wasn't any, at least from the data, there wasn't any signal, that I saw, in the age composition of the landings to suggest that this year class was actually being seen in the commercial fishery.

That would have been a signal, to me, that something is wrong here. Now, again, if you change the -- Now, what we've had here, as I understand it, is we have updated the age compositions, not for the preceding part of the series, and maybe I am wrong about that, but only from the time when the assessment ended, from 2011 to 2015, and, again, I am perplexed that that can now go back retrospectively and change things almost thirty years ago. Is there an explanation for that?

DR. REICHERT: Yes, and I think that is one of the questions that we should discuss, and you are absolutely right. Genny, before I go to you, shortly I want to take a little bit of a break, but I want to give Genny an opportunity to comment on that, but this is one of the things that we need to discuss, because that is one of the questions that the council has asked of us, to provide an explanation to the differences, and Mike has already provided some information on that.

DR. NESSLAGE: Thank you. Is there any way we can pull up the update report, to page 30? It shows the number of samples, length and age samples, that are available by year for this fishery. It's primarily, prior to I would say the 2000s, almost entirely length samples and very -- This is the effective sample size for each of the years, the fisheries, and then also --

DR. REICHERT: Sorry, Genny, but this is PDF page 30 of the update?

DR. NESSLAGE: Yes.

DR. REICHERT: Just so people can follow that on their -- That's Attachment 15.

DR. NESSLAGE: It's Table 7.5, page 30. This is what the model is seeing. This is what the model is saying the information it has to inform those cohorts, tracking the cohorts through time, and look at all the -- First of all, look at all those dots. That is no information. Second of all, look at the tiny, tiny numbers at the beginning of that time series. There is hardly any information in that period that you're worried about that I agree is jumping around historically.

That is one of the reasons, and I know we're going to talk more about the robust likelihood issue, that the old assessment was chasing after some of the -- It was trying to fit some of these very small samples, information in these samples, and not doing a great job of it, as we saw with that ridiculous recruitment estimate from the previous assessment that we shouldn't have really believed. Sorry. It should have been brought up.

DR. REICHERT: Hold on, everyone. Genny, if you can complete, and then I will give Fred a chance to reply.

DR. NESSLAGE: In my opinion, that's why we're seeing a change in the historical estimates for this stock, and I guess does that -- Is that an adequate response at this point?

DR. REICHERT: I think for this point. I want to have a little more discussion about the robust likelihood method after our break. Anyone to this point at this point, before we take a brief break? Mike, go ahead.

DR. ERRIGO: Just one other thing about why things would have changed all the way back in time is that -- There is single selectivity for each fleet used in the entire time series, and there was a significant shift in the estimate of selectivity to older ages, by quite a bit, and so that will change pretty much all the estimates of fishing mortality, spawning stock biomass at age, all of that abundance at age, how the fishery operated and all of those things for the whole time series and not just in the recent years. There were no selectivity blocks, because there was nothing that assumed changes in selectivity at a specific time, and so that's one of the reasons why you would see changes all the way back.

DR. REICHERT: Thank you, Mike. Let's take a break until five minutes past ten, and then we will come back to the table and continue the discussions. Thank you.

(Whereupon, a recess was taken.)

DR. REICHERT: Thank you. A couple of things. I tried to remember SEDAR 25 and the discussions, and I do remember there was a significant amount of discussion relative to the recruitment peak in the workshops, especially at the review workshop. We had significant discussion at the SSC meeting about that, and there was also discussion about it at the council, and I believe that was one of the reasons why the council, I believe, selected a relatively conservative level of ACL.

The other thing I wanted to mention is I asked Erik if he would be willing to come to the table in a little bit and explain to us or give a little more detail about the changes in the modeling, the robust likelihood, because I think that would be very helpful for us as a committee, and also this is a method that has been used in various stock assessments, and I have heard some concern that the end result was unidirectional, that it kind of always resulted in a lower biomass and a higher fishing level, and so I asked Erik to address that a little bit, based on the experience we have had so far with stock assessments. The third point I wanted to make is that Genny put up a graph that was, if I understand correctly, not in the report, but she wanted to point a couple of things out, and so if you would do that, please. Thank you.

DR. NESSLAGE: Ben got me thinking when he mentioned the 2012 year class. This graph, unfortunately, wasn't in the report, but it does show -- This is the hand-line cohort tracking graph, and you can see the 2012 year class pop up and kind of move very quickly through there. It doesn't show up as a super significant recruitment pulse, which is kind of sad. If you flip to the longline cohort graph, it shows up a little bit, actually perhaps in 2011 and 2012. It tracks along. Especially when you get to 2014, you can see there's a shift to the right, but it's not -- I wish it had been bigger and more significant, but it is just to make the point that that information is being included in the assessment, but it just didn't show up as big of a pulse as one might have hoped.

DR. REICHERT: Thank you, and I was also looking at Figure 14 of the Attachment 15, where you see -- Mike said that it got that shift to the older age classes, but there is age three and four that seem to be a little higher than the others, and so that may -- Perhaps that may be part of that same signal, unless I am completely misinterpreting that figure. Thank you. Any comments or

questions relative to this graph and what Genny just mentioned before I ask Erik to come to the table? All right. Erik, would you mind addressing the questions we had? Thank you.

DR. WILLIAMS: Sure. Let's talk about the robust multinomial. The choice of likelihood functions to use in assessment models has been really an active line of research for many years, ever since these catch-at-age models have come out. The issue that the field has been struggling with, the scientific field of studying these likelihood functions, is how we sample these fish and what kind of statistical distribution that actually follows.

The original thinking is that it was multinomial, and, on the face of it, it looks like it should be multinomial, and what that means is that you are sampling fish in like these bins of proportions. The problem is that fish don't behave in a truly random way. In other words, when we go out to catch fish, we don't catch them exactly in proportion to how they exist in the population. We find them actually in schools, and the schools are often of fish of similar size or age.

What that induces is a correlation effect. In other words, if we go sample fish from one spot that might have one school on it, we might expect to see a lot of fish of the same age, but that's not representative of the whole population, because we know there is other schools out there where there is older fish or younger fish, and so that creates what we call correlation in the multinomial, and so the way the field has been wrestling with that is to reduce the sample size.

You have seen, probably in some of our older SEDARs, where we have gone from using the number of fish that were sampled to the number of trips, because we believe that then the number of trips is actually more representative of the effective sample size, because of this strong correlation effect in the way that we capture a fish.

The field has gone through even more iterations lately. It's a really active line of research right now in the literature, and, in 2011, Chris Francis came out with a paper, and he was addressing not only the multinomial issue, but the general problem of how do we weight these likelihood components within the model so that they are providing equal information based on the assumptions that we're making with these statistical distributions.

That was a significant paper in our field, and we grasped it and basically took it in the hand and went with it in our modeling scheme, and so, if you look at any of our SEDAR assessments after 2011, you will see not only that we've shifted to using this robust multinomial, which Chris Francis recommended, but we also went to this iterative reweighting process, where we go through a step-by-step process to reweight the likelihood components so that they're on an equal footing is essentially the goal we're after there.

Since that time, there is actually still more active research going on, and there has been, in the last few years, couple of years, there has been discussion of actually getting away from the multinomial altogether and going to something like a logistic normal distribution, and so I caution everybody that there is probably more changes still on the horizon, so to speak, but, to address the specific effects of that, in this case and in some other cases, I know people are worried that this is causing a directional change in our assessments.

I think that the direction of the change is probably just coincidental at this point. I would expect that change maybe to be different in other circumstances. One thing we do know is if we had

really good sample sizes, high sample sizes, that the robust multinomial and the multinomial would actually behave the same way. We would expect them to sort of approach the exact same answer.

What is happening is, because of our low sample sizes, the robust multinomial is actually doing hopefully what we want it to do, and that is not chasing little anomalies and little residuals that shouldn't be chased because of the low sample size. That's the whole idea of a robust statistic, is to avoid outliers, to not chase the outliers, and so, in our assessments, because we are, frankly, on the cutting edge of whether we even have sufficient samples, in some cases, to even do these assessments, the robust multinomial is going to have a big impact on our assessments, more so than it would in other areas where they have really large sample sizes, and so that's why we're seeing effects from it, but I think it's doing the right thing, and tilefish is a perfect example.

Clearly the SEDAR 25 was chasing this little bit of information to indicate this really large recruitment event, and we messed around with that and tried to see why it was doing it, and we could even identify the piece of data that it was chasing, but we had no reason to not let it chase that, but the robust multinomial is basically a way of saying don't chase that. It basically won't chase it, because it's looking for a general median or general average, rather than chasing tiny little anomalies, and so it's actually doing exactly what we want it to, and, if we had the robust multinomial in SEDAR 25, we wouldn't be in this problem, because we wouldn't have had that anomalous recruitment and we would have probably had a more accurate estimate at that time.

I guess the bottom-line message here is we're caught in an evolving part of stock assessment science right now, but I think it's evolving in the right way, and it's going to actually benefit us, because we are dealing with such small sample sizes for some of our stock assessments, and these new methods that are coming out are going to make our results a little more robust in the end, is my hope. I hope that helps the explanation.

DR. REICHERT: Erik, I have two questions. What does this method do, because, yes, there were major concerns about the signal in golden tilefish, but we didn't know, because we kind of look in the future, but what if that would been maybe not that high, but it would have been a real signal, and so how does that new method deal with that, because you say you're not chasing these peaks, but, especially close to the terminal year of the assessment, you have no information to -- You have no data to inform the model whether or not that's a real or maybe not a real signal.

DR. WILLIAMS: I think the way to think of this is if we have several years of data showing the same signal, the robust multinomial is not going to erase that. It's actually going to fit that very well. What the robust multinomial hopefully is doing for us is avoiding that one-year anomaly, where maybe it indicates a high year class, but the years after that don't show it. It's not going to go chasing that one point. It's going to downweight that.

DR. REICHERT: You mentioned that this new method has a tendency to show bigger differences or those two methods may be similar in species where we have a lot of data, and, to address the direction in the data-poor species, do you still feel that it's not likely that there is tendency to one unidirectional result of those data-poor species, because of the nature of those peaks? Unless I am mistaken, if you look at especially recreational catches, because of the way the data are collected, you may have a lot higher likelihood that you get those high peaks in the landings. Can you address that?

DR. WILLIAMS: Yes, and that's a tough one. That's where we need a lot more time and a lot more study to sort of get at what exactly the robust multinomial is doing with our particular data, and so, in the sense that our low sample sizes are consistent in the way that they may be potentially biased or maybe even consistent in the way that the observation error shows up, we might then expect to see consistent changes in our results, but I don't know if that's the case, and it's hard to say a priori, until we look at it more and more.

I do think that, given all randomness, that what we would expect is that the effect of the robust multinomial should be both positive and negative and go back and forth between particular cases, but, to the degree that our data is correlated across all species or our problems with data sampling are correlated across all species, then it might actually become a consistent pattern, but I don't know. That's a much trickier thing to get at.

DR. REICHERT: Thank you.

DR. JOHNSON: I just have one question that's specific to the tilefish, and then it generates back into the whole thing. Was there ever a sort of modified sort of continuity run that might have been doing the exact same data, but just changing the analytical methods, and might that be added to the future things, to just look at isolating that potential effect? Is that possible to do?

DR. WILLIAMS: Genny might be best to -- You did a continuity, of sorts.

DR. NESSLAGE: The continuity run that is in the update report -- If I remember correctly, it includes the new data. If you look, it goes all the way through the terminal year. I did do a run, the very first one I did, where I was using just the old data with the new code, which included the robust likelihood, and that bit recruitment pulse was not there, and so it's definitely the robust likelihood, if that's what you're asking.

DR. JOHNSON: Yes, that was my point, was just to see if there was a way to isolate what might be changes in selectivity, new data and new years, from the actual methodology, which might separate sort of those things for folks to think about.

DR. AHRENS: I think one thing to keep in mind as you're moving through and kind of diagnosing this out is kind of the relative changes in process error to observation error in the model, because it looks like you have shifted to something that is a smaller, more productive stock, as opposed to a larger, less productive stock, and kind of teasing through to see where kind of the recruitment anomaly weighting relative to the observation error weighting has caused that shift and then where that has occurred, in terms of fitting the multinomial. If something has been downweighted, the recruitment deviations look like they may have been downweighted or upweighted a little bit relative to others, and so just kind of looking at those relative ratios of observation to process error may help you tease that out a bit.

DR. SERCHUK: There are some lessons that I think we need to learn from this. It's clear, to me, that our process is not robust. I am not talking about the multinomial now. I am talking about we're now looking with 20/20 hindsight, which is always good, back to see a situation that Genny says, well, look at this table, and how could you possibly go forward, in a sense, with this paucity of sampling.

Then there is also an adage that if you only have a hammer that everything looks like a nail, the point being if you're going with an age-based assessment approach and you have data that are not conducive to doing an age-based model, but you only have that hammer, everything looks like a nail. You're going to use it no matter what, and I'm thinking that the process itself is not robust.

If it's clear on 20/20 that there are so many holes in the sampling regimen, clearly, prior to using a data-sparse approach to modeling the stock, at least to do your best, with the expectation, as Ben had said, that, hey, we have to improve our sampling across the board if we want to have a more informative assessment.

I think, to me, I'm concerned as a scientist, and, again, it's very easy to say with 20/20 that we go through a SEDAR process and it comes out with a peer review and they say, yes, this assessment works. Then we come back five years later and look at it and say, wow, gee whiz, the king has no clothes, and how could you possibly go that way with this paucity of sampling? Well, we have another hammer. It's called a multinomial. We bring that hammer in, and we're going to pound that nail. I am being a little bit facetious, a little bit tongue-in-cheek now, but I'm concerned as a scientist that our scientific process has let us down. We had a peer review come in on SEDAR 25 with the best scientific information available, and, five years later, we come back and say, my gosh, how could they come to that conclusion?

Scientists are not infallible. We're all human beings, and so, again, things like that happen, but there are lessons to be learned here, and I think we have to bring together the most robust models that we have with the data that are available, and we should not try to pound something or make a sculpture out of something if we don't have the proper building blocks. I will get off my soapbox, Mr. Chairman, and thank you.

DR. REICHERT: Thank you, and I don't disagree with you. One caveat there obviously is that science develops, and we were working under the best available scientific information at the time, which may now be different or we may have better other methods or more information, and so I know exactly where you're coming from, and I don't disagree, but there is always that aspect to the process. Any other comments or questions?

DR. SHAROV: Quickly, to follow up on Fred's, I think we all agree with him that, yes, we do have a problem, and it is a conceptual problem as to how we approach the assessment. We definitely should match our models to the data, the information, that is available. That's an issue, and then the single model-based approach, the philosophy of using a single model is probably the -- That's not a best way to go, understanding that multi-modeling analysis that multiplies the time and the efforts that are required, et cetera, but that might be something that maybe should be happening in the future.

We are not doing another assessment review here, of course, but I would allow myself to ask a couple of questions in trying to understand the differences in the particularly quite significant results in the assessment update, and I am looking at the re-estimated trends in fishing mortality. What's certainly is very noticeable is a very high peak in fishing mortality in the early 1990s, where your F over FMSY is going from below one to like eight. We have a period of years, like at least four years, where we have F exceeding FMSY like by a factor of six to eight, which would be equivalent to a total fishing mortality somewhere in the range of 1.5 to two, plus the natural mortality.

We are looking at the overall removals of above 90 percent of the age class within the year. Events like this are very important in the assessment, because they are actually the ones that are helping out to estimate the scale of the population and the fishing mortality level as well, but it's a scaling issue, and I am looking at the trends in the SSB. There is some decline in SSB, but it's not nearly close to the rate of the presumed decline that the fishing mortality should lead to, and I was wondering why.

At the same time, the very significant removals occurred in the early 1990s, and, yet, the fishing mortality back then was only around two times the FMSY. Obviously that's because the population size was much higher, presumably, yet we don't see much change in the SSB in the 1990s when the fishing mortality, in the course of several years, was very high and should have reduced the population size very significantly. I understand that it's obviously that the math should have worked in the model, but it still doesn't look -- I can't explain this. Do you have any thoughts on this, Genny? Thanks.

DR. ERRIGO: I have a thought about why that might happen. It's something that we've talked about in other assessments, and I think it might have something to do with the F metric being used in the BAM. We use apical F in the BAM, and apical F is just the -- Across the ages, it's the age class with the highest F rate. That's apical F, and then, according to what we've heard, there were more older fish earlier in the time series, and then they were fished down. Then there were more younger fish later on.

That means that the high Fs in the 1990s were on smaller, younger fish, and so the biomass removal was much smaller, whereas the F rates earlier in the time series were on much older, larger fish, and so the biomass removal would be much larger, and that may account for the difference. That's why the huge spikes in F in the 1990s are not -- It would not equate to very large drops in the SSB, whereas, earlier in the time period, in the early 1980s, where the Fs are much smaller, the drops are much more significant.

DR. NESSLAGE: Mike, if you could pull up your graph that shows the abundance at age, I think this illustrates it. At least I hope it sheds some light on the issue, the colored bar graph. You can see, given we assume that the fishery was lightly or unexploited early in the time series, and you see that fishing-down period in the 1970s and 1980s, but it's coming from a really high biomass, and it's happening pretty gradually. Then something happened in this 1980s to 1990s period, where the age structure -- At least the age structure was informed in the model such that we think the population structure expanded again quite rapidly.

Whether we should believe that or not, I'm not sure, but then, within a very short period of four or five years, it shrinks the age structure back down quite rapidly, and I think that's why we're seeing those ridiculously high Fs. It's happening very quickly on a pretty expanded age structure, and so this may be, again, the issue of the age samples or the length samples may not -- This may not be realistic if the sampling was not adequate in that time period. Again, it's the only information we have, but it may be chasing after a bit a noise there still, and so I don't know that I have a good answer for you, but I think this is why we're getting such a high rate in that time period as opposed to previous initial fishing-down period. Does that help you at all, Alexi?

DR. SHAROV: It's the scale of the changes. Your abundance here is changing by say 30 percent in the course of three to four years. The level of fishing mortality that is estimated would cause, like I said, 80 or 90 percent decline for every year of such a high F being applied, and, to Mike's comment, my understanding is that you're using a logistic curve for -- You have a flat-top selectivity curve, where the full selectivity occurs at age whatever, nine or ten or eleven, and, therefore, your apical F is the F at full selectivity. This high F should significantly affect the SSB. Again, obviously everything -- It was tied up in the model, but it's just a little bit puzzling, the expected change in the abundance and the biomass from the estimated one, but I will just leave it as is and maybe take a look later at the assessment results for further consideration.

DR. REICHERT: Thank you. Mike, you had a remark to that point?

DR. ERRIGO: Yes, and I just wanted to use this graph to help clarify. Apical F is affected by abundance at age and effort, and so, in this graph here, the big peaks in F were here. The big one was 1993.

DR. REICHERT: Mike, hold on. This is Figure 7 in Attachment 15.

DR. ERRIGO: Yes, and so it was 1993. Any effort on these older age classes, which are severely truncated by this point would cause very, very large F rates, and so the apical F would come from here. Back here, there is significant more fish in the older age classes, and so any of the F rates would be much lower. However, taking just a few of these fish would cause a substantial decrease in biomass, and these are numbers and not biomass, but I think that's why the F rates shoot way up here, because the age structure is so truncated that the older age classes, which are experiencing most of the fishing pressure, are so small, and so the F rates are very, very high.

DR. SERCHUK: To this point, I am still a little bit confused between this Figure 10 and Figure 11 here, and this is what I think Alexi was pointing to. We have very high F to FMSY ratios from 1990 through 2000, and we don't really see the SSB declines during that period, but it's a very gradual decline, and so I am concerned that the F that is used for the F and the FMSY is not the same F that's being used in terms of the SSB, because, if it was that high, the SSB would actually really markedly decline in relationship to those very high Fs that you see on the top of Figure 10, and that's the disconnect that I am having right now.

One would expect, with very high Fs, seven or eight times the FMSY, to see almost a complete obliteration of the portion of the stock that it's being applied to, and I don't see that in the SSB. I see the decline, but it's much more gradual than that, and I am just wondering, do we need to change the F metric? If changing the F metric to just those ages in the SSB, would that be more consistent with the sort of declining SSB that we see here? It's a little bit puzzling to me, Mr. Chairman, and thank you.

DR. REICHERT: Thank you, Fred. Any other questions or comments? Of course, I am thinking how to move forward. We can go to the action items and maybe pick up some of these discussions and concerns while we are doing that.

DR. AHRENS: I guess I could make one comment to Fred. If you think of the F being experienced by the stock as some product of the proportions at age times the selectivity at age times the F on the fully vulnerable, your F asymptote, that is why you're not seeing the impact, because you have

a much higher proportion of the stock in the younger ages who are not assumed to be fully vulnerable to that gear, and so it seems that what you would like to see is more of an average expected F across all age stocks, as opposed to that on fully vulnerable age stocks.

DR. SERCHUK: I think that is correct, and I am just trying to say that we have two different reference points here. We have an SSB reference point and we have an F reference point, and I am seeing a dissonance between the two of them, quite frankly, and that's the reason -- There is nothing wrong with that, but I would actually like to see an explanation of how the SSB -- If we're concerned about the overfished condition and trying to link that up to the fishing mortality rate, and I don't see that linkage here, because I think what you're saying is correct.

The F is being applied not only to the spawning stock biomass, but across the population, and I think just having a different -- I'm not saying you have to change the reference points, but it would be nice to see another figure that looked at the F being applied on the spawning stock with the selectivity, with the abundance, to better explain the changes in SSB that are going on on a time basis. Thank you.

DR. NESSLAGE: I just wonder if we could show the actual spawning stock biomass trends relative to the BMSY. It doesn't look gradual at all. It's a halving of the spawning stock biomass and a halving of the biomass in that time period where the Fs are ridiculously high. I am looking at the actual update assessment, PDF page --

DR. REICHERT: That's Attachment 13. It's PDF page?

DR. NESSLAGE: PDF page 74 is total biomass, and spawning stock biomass is in the lower panel, whichever you prefer to look at.

DR. REICHERT: Earlier, I thought whether some of that may be a matter of scale, but that may be a different issue. Mike put the two figures up on the screen here. Again, it's page 74 of Attachment 13, for those of you who want to look that up.

DR. SERCHUK: That still doesn't address my issue. My issue is looking at the Fs that we had in Figure 10. They start increasing from 1990 through 1998. They go up again in 2000, and that's a period where there are slight some reductions there, but there's not the precipitous decline that you had before that. That is what I am trying to -- That is what is puzzling me.

DR. SHAROV: If I could add to this that there is a very precipitous decline in the SSB from 1980 to mid-1985, but the fishing mortality has been only twice over the FMSY, but just look at the slope of the decline. The slope is much higher than for the 1990s. Obviously it's an SSB that is probably just the actual age structure -- The selectivity here is an interplay and that's what is causing it probably, yes.

DR. JOHNSON: I will just follow up with Alexi and I think what Rob is saying as well, that, early on, the biomass is in those older ages that are feeling that -- They are fully selected, whereas, later on, most of that biomass is coming from four, five, six, seven-year-old fishes.

DR. SHAROV: What's the 50 percent age of maturity?

DR. JOHNSON: That, I am not sure, but the selectivity --

SSC MEMBER: Its about six.

DR. JOHNSON: So that F is not really being felt by the majority of the population.

DR. SHAROV: These are the points where -- Obviously age structure and the levels of landings and estimated Fs are defining the scale of the overall population size, and the information on age structure for this period is critically important, and that just comes back to the issue of the data that the assessment is built upon and the availability of the reliable age structure information, which then poses the question of should we at least test the data, possibly, in the next attempt with the non-age based or maybe age structured production models or something that would not rely as much on the age information, when it's not as reliable as we would like to be.

DR. REICHERT: To that latter point, we can make that recommendation, but I just want to make sure that we are all in agreement when we actually do that. Any other comments or questions before I go to the action points?

MR. HARTIG: I actually wrote a paper on the history of the fishery, and I have to go back and review it. I should have done that before now, but, I mean, by the 1990s, most of the longliners were out of the fishery. There wasn't that much effort going on at these times of these high Fs, and so I don't know that works into the equation as well. I mean, this was pretty much a fishery that a whole bunch of people got into in a real hurry and took the available biomass out of the fishery and then go out of it and went to do different things.

There were a couple of fishermen who stayed in it, catching fish at relatively low landings levels, but still being able to make a living doing it. There are only two guys in the area where most of the fish are caught now off of South Florida, and they stayed in it through the entire time series, but their landings in those times were 300 to 500 pounds, which was much less when the fishery was going full-bore there. People could catch 4,000 pounds a day in the longline fishery, once people got back into it. Now, you can't do that now.

The CPUE has definitely declined, and there is no doubt in my mind that tilefish needed an adjustment. We've seen it. Now, how much of an adjustment was the question. We believe that the 60 percent was too much, but the biological parameters that drive the assessment -- You see CPUE going down, and you will continue to see CPUE going down past the time series of the data, in the hook-and-line fishery at least.

Now, I can't answer why that happened. It is just as dramatic when the big fish came in as it is now, that the catches declined so quickly that it doesn't make a lot of intuitive sense that it was fishing that caused the problem. Are these fish moving out of the area? Who knows, but going from, in my case, just two or three years ago, catching 500 pounds on a hook-and-line day trip, now that's down to 150 to 200 pounds, and so it's in half.

From what I had seen, it just didn't make sense that it dropped that precipitously just by fishing, and so, to me, something else is going on. It was going on when the big fish came into the fishery, and now it's going on again when these fish are not as available, and so there are problems in the

tilefish fishery, and I will grant you that, but whether or not it was a 60 percent difference that we needed, that's what the fishermen are concerned about.

DR. REICHERT: Ben, one question. You mentioned the 1990s, where you said there was a lot of people that went out of the fishery and the effort decreased, but that's also a time where we see an increase in F, and so I am --

MR. HARTIG: Right, and I will go back and review that tonight. I will review that paper that I wrote for the council at the time about what happened in the fishery and when people were leaving, and I can give you accurate dates in the morning.

DR. REICHERT: I am just trying to jibe the time period and what we see in Figure 10 of Attachment 15.

MR. HARTIG: Right, and that was my concern. It just looks like a really high F for the amount of effort that was occurring in the commercial fishery.

DR. REICHERT: Okay. Thank you.

DR. NESSLAGE: I really can't speak to the amount of effort that was going on at that time period, but, if you look in Mike's report, and I guess it was Attachment 15, Figure 5, if you look at the last ten or fifteen years, the average landings are under 500,000. They were double that in that time period, and so I don't know who was landing them, but somebody was landing them.

DR. REICHERT: All right. We have a number of action items, and the first one is to review the estimate of productivity from the last assessment and the current update, and we had some discussion on that, and identify the uncertainties and factors that impact estimates of productivity and then comment on how well stock productivity is estimated at this point in time.

The last sub-bullet is identify research or data needs that could improve future estimates of productivity, and I think we addressed some of these already, but I would like to specifically see what we have not addressed and address those points. Identify the uncertainties, we extensively talked about that. Would anyone like to provide additional comments to that action point?

DR. AHRENS: I think it would be helpful to have the posterior distribution of FMSY from the SEDAR 25 and the posterior from the current and just overlap those, to show whether or not we actually have a significant change in FMSY or if it's still well within the uncertainty of those estimates. I apologize if I'm being ignorant.

DR. REICHERT: That's in Attachment 13, and I think Genny and Mike are looking up the number or the page.

DR. NESSLAGE: In the SEDAR 25 document, and that's Attachment 14, it's PDF page 277. Relative to the update assessment, it's Attachment 13, PDF page 87, if that helps. It's page 277 in the SEDAR 25, Attachment 14.

DR. REICHERT: Mike is bringing them up on the screen right now.

DR. NESSLAGE: Robert and I are looking at each other and going, they're the same. The estimate from the update, remember, from Mike's table, the MSY percent standard error was 177 percent, and so the uncertainty around that estimate is very high. I think that's reflected in the error, and so it's not ignored, but that's what is leading to that buffer, because we're not terribly confident in those estimates, and perhaps rightfully so, as Fred and Alexi have been indicating.

DR. BARBIERI: I think this transcends the time of this discussion of blueline tilefish that Fred and Rob and Alexi were with the South Atlantic SSC, but, if we think about all the discussion that we had with blueline tilefish and the amount of uncertainty in that assessment, and the fact that here, basically, we are explicitly acknowledging that this is a very uncertain assessment.

Again, I just want to make a point that it is reassuring to me to see that this result, even given a level of P*. The buffer is larger, because, of course, the PDF is broader, and, again, it's reassuring. This is exactly how it's supposed to be, and we are supposed to be doing those buffers proportional to the amount of uncertainty. This is the way that this is turning out to be here, and so I am pleased here actually to see this outcome, because it matches well with the intent of the application of the control rule.

DR. REICHERT: Anyone else? The last point here was to identify research or data needs, and I think we addressed that earlier in the discussions. Unless anyone has any additional suggestions, we will lift that from the report and add that to this action point.

DR. SHAROV: This is not an easy topic, but the assessment results are robust with the level of uncertainty that is identified, assuming that the assumptions and the elements of the model that went into the assessment are true, which we often don't have an ability to test it, and that is another source of uncertainty that often is being ignored, in most cases just because it's hard to address it.

Just a simple example would be the shape of the selectivity curve, what we discussed just minutes ago about these high fishing mortality levels, and so what is likely to happen in the model is that you have a younger population of fish in the 1990s and then you have a certain level of catch. In order to generate that level of catch from that population, you have to raise the fishing mortality on this fish to a certain level.

Well, there, selectivity at a younger age is only like 0.4 or something. Therefore, your estimated full F for the older fish becomes 1.5 or 2. I doubt that we will ever have that level of fishing -- That we had that level of fishing mortality on those older fish, but, because we assume that our selectivity curve is always like this, in that shape, the model estimates that the fishing mortality on the older fish is extremely high. In reality, even if we wanted to exercise that level of exploitation on the older tilefish, we probably wouldn't be able to do so, unless they aggregate all in one place and we know exactly where they are.

If you relax your assumption about the flat-top selectivity, then the results could be rather different, but we can speculate about this. The data that we have, unfortunately, would not allow us to fix that problem. The only way to fix it is into the future and designing the data collection in such a way that it will help us to specifically identify all elements of the model and be confident in the -- Nonetheless, the so-called process uncertainty, model process uncertainty, that is an element that should be mentioned here as well.

DR. REICHERT: Thank you.

DR. AHRENS: I think one recommendation that might be helpful is Erik talked a lot about assessment models requiring an understanding of the underlying error distribution around the data that's used, and, as our uncertainty about that underlying error distribution is poor, we have to move to robust likelihoods.

A critical piece of information I think that helps us to understand error distributions more is spatial information, but it's the spatial distribution of fishing relative to the population and what is the spatial distribution of data sampling relative to the spatial distribution of the fleet, and I know that is a sensitive subject in fisheries, but it helps us, I think -- It makes us more able to answer and address those uncertainties, and I think it's important to let the councils know that, without that spatial information at a reasonable scale -- Not incredible detail, but at a reasonable scale, it's really hard to track down where those -- Was it a shift in the distribution of the fishery? Was it a shift just in the distribution of the sampling, relative to the vessels that were going out? Spatial information really is useful for tracking that stuff down.

DR. REICHERT: Thank you. Unless anyone has any additional comments or questions, I will move to the next bullet point of review the application of the P* analysis to tilefish for the update. I would like to take a five-minute break, a real brief break, before we come back and address that action item, and so we will be back in five minutes.

(Whereupon, a recess was taken.)

DR. REICHERT: Thank you, and welcome back. I want to remind everyone of the other action item, and Mike did a nice job in his overview to review the application of the P* analysis for tilefish for the update. Sub-Bullet 1 is provide an explanation for the apparent unusually large difference in yield between projections of OFL at the P* of 0.5 and those of ABC of P* of 0.3. the second one is compare the buffer between OFL and ABC estimates for tilefish with those of other species with similar P* values and identify which factors are most influential in determining the buffer between OFL and ABC. The last sub-bullet is consider whether the P* analysis is appropriate for this assessment and whether basing ABC on yield at 75 percent of FMSY and OFL on the yield at FMSY is a viable alternative.

Mike provided some overview earlier, and, Mike, do you want to remind us of some of the main points? We have had some discussion on this, but let's see if we can address the specific action items here. Thanks.

DR. ERRIGO: Just briefly, one thing that I had pointed out earlier was that there isn't any real difference in the buffer between SEDAR 25 and the update, and so the large buffer has to do with golden tilefish, and we talked a lot about the extremely low sample sizes for the ages. It's very spotty data, especially in the early years, things like that, and so there is a very large amount of uncertainty in there, in the estimates, and here is the -- You can compare the age samples across several different assessments, and you can see that, for tilefish, it's very small. The next one is black sea bass, and it's got five times more age samples than tilefish. Then it goes up rather quickly from there.

It's got very, very low sample sizes, and that's most likely the largest difference between these assessments and what is probably driving the big buffer there between the ABC and the OFL, but there are several other things, like the -- Yes, it does have an independent index, but it's not very informative. It's put in there in five-year blocks. The sample sizes are extremely small, and so it's very, very coarse. It's not fit very well, whereas most of these other assessments do have indices of abundance from the MARMAP survey.

This table is just a reminder of which of the benchmarks had the most uncertainty in them for tilefish versus some of the other species. Tilefish had the largest amounts of uncertainty in the F metrics, and also MSST, whereas some of the other species had large amounts of uncertainty in some of the other metrics, like snowy was an SSB MSY and status determination for overfished versus non-overfished, whereas, in tilefish, the largest uncertainty was in the F metric, but also an extremely large amount of uncertainty in the estimate of MSST, but not so for SSB MSY, and so I'm not exactly sure why that is, but that's just what we have there. That's what we have for P*.

DR. REICHERT: The explanation is it can largely be traced back to the high level of uncertainty, and that's something we discussed earlier. I think Luiz made a point to that, and several other SSC members have addressed that. Anyone else have any comments to the Sub-Bullet 1? That also addresses Sub-Bullet 2 to compare the buffer, and that's what we did with some of the other species, and, again, it's the differences in the uncertainty that leads to the values.

We did compare the buffer with the other species. We addressed that. Identify which factors are most influential, and Mike just mentioned a number of factors. We discussed several of those factors earlier, and we put that in the appropriate part of the report. Are there any factors that we have not discussed or mentioned that we should include in our report? Seeing none, then the last one is consider whether the P* analysis is appropriate for this assessment, and I think this may require some discussion, and whether there are are alternatives. I would like to open the floor for discussion here. What is the pleasure of the group?

DR. BELCHER: I would ask the question of why wouldn't it be appropriate? I think that would be part of that question, the justification behind it. This is the approach we have applied to all of our assessment models, and so why would this case be any different from the previous ones?

DR. REICHERT: Part of it may be the uncertainty in the assessment.

DR. SCHUELLER: I thought the same exact thing, Carolyn. Why wouldn't it be, and there is uncertainty in all assessments, and so I don't think that's a justification for it. I can't think of any reason why we wouldn't do what we've been doing.

DR. ERRIGO: Just to clarify why that was there, if the SSC had found that the larger buffer was due to some other odd factor, like the use of the multinomial or something else besides the low age sample sizes and the large amount of uncertainty, then that would -- I think there would be more discussion here to be had, but it's starting to become clear that tilefish has a very large amount of uncertainty because it's lacking data. Therefore, the P* is doing what it was intended to do, to put in a larger buffer for more uncertainty, and so that was just there just in case -- If that wasn't the case and something else had come up that we think caused that large buffer between the ABC and OFL, to look at that.

DR. REICHERT: This may go to the point of we have had some discussions. We had much more extensive discussions this SSC meeting than we had when we first reviewed the outcome of this assessment, at our last meeting. There may be some new, additional information that came to light, and so should we reconsider our fishing level recommendations? We can if we feel that, as a committee, we have information that we may not have considered in the last meeting and how to proceed, and so I would like some comments from the SSC members relative to that point. Do we feel there is no need to reconsider fishing level recommendations?

DR. BARBIERI: I am not ready to answer yes or no to that yet, but I think that, if we make a decision to reconsider, what I am grappling with here is how I would justify that. After all of the discussion that we've had and looking at all the information that was presented and the amount of uncertainty, and, again, thanks to Mike E. for putting together that very nice summary that really provided, almost at a glance there, all the different factors and how they compare to other assessments. That is really, really well done. Looking at that, I am struggling here, but I cannot find any reason why we, from a scientific uncertainty perspective, would revisit our recommendation.

DR. NESSLAGE: Just a question. I know it's on the agenda that we'll be revisiting or someone will be revisiting the control rules applied, and would this retroactively apply to tilefish? For instance, they got a big hit in the P* decision tree because it's overfishing. If that changes in our subsequent discussions and we recommend, for instance, that that be dropped, would then the P* change for tilefish? I just don't know the procedures.

DR. REICHERT: I think that, later this meeting, that will be our first discussion to look at the ABC control rule, given some new guidelines, but this is a question I'm going to ask Mike or John. I don't believe we would be retroactively adjusting our ABC recommendations, or would we? Would this apply to recommendations that we are discussing during this meeting?

MR. CARMICHAEL: One of the issues is that the control rule is specified by the council through amendments, and so there is a formality there that you recommend changes and then the council reviews those and applies those changes, but, on the other hand, the guidelines and stuff recognize that you have the ability to deviate from your control rule, and so I don't think that you would be totally unjustified.

If you felt there were some changes you recommended making to your control rule at this meeting and you wanted to apply those to tilefish, I think that you would be on solid enough ground, because you have that leeway to deviate, and I think we do have Shepherd and Andy here, and so, if that would create any legal concerns, I think we're lucky to have them here, and maybe Shepherd can help us out and make sure that we do stay on solid footing with regards to what we're legally obligated to do.

MR. GRIMES: I think that's entirely correct. The ABC control rule is in the fishery management plan itself, and so it would need to go through the approval process. You haven't had too much discussion of that, of varying from the control rule, which, as John said, you are free to do if you have sort of good cause for doing that. You are free to discuss that here. So far, I haven't heard any of that good cause really expressed, but that is within your purview.

DR. REICHERT: Thank you, Shepherd.

MR. CARMICHAEL: I think, with that, if you recommended some changes or you felt some changes were in order, then I think you could go ahead and apply those and see how that affects your recommendations, your fishing level recommendations, for tilefish and any other stocks you wish to consider here at this meeting that you have information coming before you on.

DR. REICHERT: So we are back to Luiz's remark. Given what John just said, or including given what John just said, the question before the committee is, at this point, the committee doesn't feel a need to reconsider the ABC recommendations we made earlier, and we will continue the discussion, but I don't see anyone disagreeing with that, and so, at this point, that would be our consensus statement. Okay.

The third action item is review performance and accuracy of projections from past tilefish assessments. Sub-Bullet 1 is there is concern with the impact of the high age of the fishery selectivity, combined with the lack of fishery independent data for younger fish, on stock projections. Number 2 is consider the use of market categories in tracking the cohorts and the recruitment events, as is done in the Mid-Atlantic.

This was not done in the current assessment, but this may be -- Maybe we can discuss whether something like that could be used in the decisions in the future. On Part 1, we have discussed the lack of fishery-independent data, and, at this point, there is nothing we can do about that data right now, and I think we have expressed the need for those types of data, again, in this meeting, but also in previous meetings. Luiz and others have mentioned that. I want to open the discussion on these bullet points. The high age in the fishery selectivity, we discussed some of that.

DR. ERRIGO: I just wanted to give a brief introduction to how market categories are kind of used in the Mid-Atlantic or how they might be informative here. They're used in the Mid-Atlantic to help backfill gaps in age and size compositions, where they are lacking data or where data is very sparse, and so they look at the fish that were sold commercially, and they look at the different market categories.

Each market category holds fish between this size and this size that are between this age and this age, so they can kind of look at it, and the range is fairly narrow for them, so they can kind of see -- They can actually track cohorts that way. It's like a two to three-year age range. It's in the assessment or the analysis reports that are in the briefing book. They can actually look at and track cohorts over time, and they use that to help better inform their analyses. It was suggested that we look at and consider is that a way that we might be able to improve our data gaps for tilefish here. I put together a spreadsheet of what I could gather on market grades.

DR. REICHERT: It's Attachment 18.

DR. ERRIGO: It is Attachment 18, yes, but I do not -- I don't have access to all of the data, and so I'm not exactly sure if this is everything or not that we have. These are bubble plots like those used in the Mid-Atlantic. The sizes are small, medium, and large. That is the only things that I have information on, and the years and the size of the bubble is just the weight that was landed. That is hook-and-line, and this is longline.

I find it difficult to see any patterns in this particular data, but I don't know how -- I don't know if we can get any finer data than this. We may be able to, but I also don't know what age or length is associated with small, medium, and large. I don't have that information, and I also made line plots, if you like those better than bubble plots.

MS. LEE: I was wondering about that. Does the size or age that belongs to a particular market category, is that stable over time, or is that changing?

DR. ERRIGO: I am trying to remember the report in the Mid-Atlantic. I think it's different depending on the area. Sometimes they are and sometimes they aren't, and so you have to track that over time and correct for it, if it does change, but I can't remember how it works in the Mid-Atlantic. It's in the report.

DR. REICHERT: John, do you have any information? That was one of my questions.

DR. BOREMAN: What was the question again?

DR. REICHERT: The question was whether the market grades, whether the age or size range is stable over time or whether that may change depending on what is landed.

DR. BOREMAN: My understanding is it's fairly stable, but I do know that they created a new market category of jumbo, because they are getting much bigger tilefish, too.

DR. REICHERT: Thank you, and Ben mentioned that the exact opposite happened in Florida, where they created a smaller market grade.

MR. HARTIG: I can only speak to how I have sold tilefish over the years. The market grades have been pretty much similar over the time series. There was one year where we changed large from six pounds to seven pounds in the time series, and I can't remember what year that was. It was probably eight or nine years ago when that occurred, but there was also that extra grade that was added, and it was probably not added across the board, but it was added in the area that we fish for that period of time.

DR. REICHERT: As you mentioned, that was an indication that smaller fish were landed relative to other periods.

MR. HARTIG: Yes, and I would expand on that a little bit. The longline fishery caught a lot of those fish, and that did not show up in the longline fishery, unfortunately, as well as it did in the hook-and-line. Some of the reasons for that is some of those fish were actually used for bait, because the price of those small fish was so low that it was comparable to the bait prices these fishermen were paying, and so these small tilefish actually got used for bait and probably weren't included in the logbook estimations, and so that's kind of on the fishermen themselves for not reporting that information, because it would have been great to have all those longline catches documented, but I heard from various fishermen that that was what some -- The other thing was some of them were shacked.

They were sold to different places, and I don't know how that all happened, but they could get a better price from selling some of those smaller fish to different smaller places that may not show

up in the landing stream, and so there were a couple of different things that happened with those small fish that was unfortunate, but at least, when I saw that information that I didn't see earlier, they did show up in 2012 in the hook-and-line, but the downside of that is that they're carried forward. Yes, we had recruitment, but did they become cohorts? Maybe not.

DR. REICHERT: Thank you.

DR. AHRENS: I think, certainly statistically, you can track it. I think there's a caution there that if you don't understand, again, the spatial distribution of the fleet and how it's shifting, you can get into big problems. If they are targeting cohorts spatially, then any signal about the biological population is going to be lost in that data.

DR. REICHERT: So we should add, if that's going to be used, to include a spatial aspect. Thanks.

DR. NESSLAGE: Just to piggyback on that, when I originally asked ACCSP for the market data when I was doing the update, and that was one of the requests from the council, my understanding was that it's very spotty spatially as to who reports market category. I don't know if you can speak to that, but she didn't think it would be adequate to characterize the whole southern stock and that it might be really informative in certain areas, but not so across the whole stock. I don't know if that's true, because she never actually sent me the actual data, and so I don't know what this data represents, if this is the whole southern stock area or just parts of Florida that might be reporting that accurately, and so that would be something to look into as well.

DR. REICHERT: Thank you, and I think I did not realize that that is not consistently done throughout the region. I think the other concern is, if it's done and going to be used, we need to make sure that there are no regional differences in how those market categories are being defined also, because one issue that I can see is consistency within one region in what you call a particular market category. Then the other variability may be that, in different regions or in different places, those categories may be defined differently.

DR. BELCHER: Continuing off of that, I think Ben and John both indicated that that has already happened, because the south has peewees, but we don't have jumbos. The Mid-Atlantic has jumbos, but it doesn't sound like they have a peewee category, and so, in one situation, the information you would be getting is a surrogate for fish.

DR. REICHERT: We have jumbos.

DR. BELCHER: We do? Okay. I had just heard that Ben had said that one category was added.

MR. HARTIG: You said that North Carolina has jumbos, but our fish aren't classified as jumbos in Florida, and so that's a big problem.

DR. REICHERT: Let me ask you -- The fact that they are not categorized, does that mean that they are not categorized that way or that those sizes, those market sizes, aren't landed?

MR. HARTIG: They are landed.

DR. ERRIGO: Let me just clarify here that there are categories bigger than large. The data, the landings, were extremely sparse, and so I combined everything into the large category, because there were some landings in this year and this year and then that was it. There is a mixed category and an unclassified category, and so I couldn't use those to create these plots, because I don't have enough information to know what proportion of those should be small, medium, or large or things like that.

DR. BOREMAN: Just to clarify, for the Northeast, they have seven market categories for tilefish. They go from extra small, small, kitten, medium, large medium, large, and extra large. We can track them through better than having three categories, in terms of tracking how year classes move through. The one they just created, I was wrong. It wasn't the super large, but it was a large/medium category, which accounted for many of the unclassified in the earlier database.

DR. REICHERT: Let me ask you the question earlier. So you do feel that, within each of these categories, there is a pretty good consistency in terms of what they are calling what, not only over time but between different regions?

DR. BOREMAN: Yes, because most of the fishery, or practically all of the fishery, is on eastern Long Island. It's just one fleet, basically, that fishes for them.

DR. REICHERT: A relatively small number of participants, because it's an ITQ, right? Okay. Thanks.

DR. SEDBERRY: I was just wondering about the price differential among the size categories and if there might be an incentive to misclassify.

DR. REICHERT: John, do you have a comment to that?

DR. BOREMAN: No, I don't have a comment to that. The categories are set by the dealers. That is how they sort them out, and there is different demands there, because they are demanding the smaller size more than the bigger size, but it's a dealer-based categorization.

DR. REICHERT: John, I assume that there are different prices per pound for each of these categories? Okay. Thanks. What I feel from the committee is that this could potentially be used, but there is a lot of problems in terms of -- There is a lot of uncertainty in terms of category size and consistency. If this is going to be used, those are issues that need to be addressed, and is that the consensus within the group?

DR. SCHUELLER: I am going to be a nit-pick here, but it could be tracked, and I would just say theoretically, and that makes it sound more likely than I think it really is, given the fact that the data aren't really available coast-wide in this case, and all the other caveats put up here.

DR. REICHERT: Yes, but that gets to if those caveats are addressed.

DR. SCHUELLER: I suppose, if they're addressed from this point forward, but it doesn't seem to me that adequate resolution and size information is available for the entire coast historically, and so meaning from right now back. It doesn't do us any good right now, and it doesn't do us any good for years to come, unless we collect that information starting now. I was sent the email that

was sent from Julie, and it says market categories are not available prior to 1988 and consistently available after that year, and so I mean it's not -- We don't have those data, and we're not going to go back in time and get them, and so, to me, this is just a no-go, unless we start collecting it to use it for the future.

DR. REICHERT: Thank you. That gets us to Action Point Number 4, comment on the biological risk and socioeconomic impacts of a phased-in approach to implementing the reduced catch levels recommended by the SSC from the tilefish update. Sub-Bullet A is the ACL would be set equal to the OFL in the first year and then the ABC in subsequent years. Sub-Bullet B is also consider providing a constant ABC for later years, specified in three-year blocks.

This is one of the consequences of an improvement in the science, like in golden tilefish, that resulted in a significant decrease in the OFL and the ABC, and obviously that significant socioeconomic impacts relative to the previous recommendations we made, and I fully understand that this is better scientific information available currently, but I also feel that it's difficult for us to entirely close our eyes to so many socioeconomic impacts that this may have, especially since one of our charges is to take those aspects into consideration when we make our recommendations. With that, I would like to open the floor to Action Point 4. What is the pleasure of the group?

DR. BELCHER: Just in the sense of the first bullet, if you have an OFL, which you acknowledge there is a buffer for your ABC, and so your ABC and OFL are going to be differential values, how can you put your ACL over the ABC, to be equal to the OFL in the first year?

DR. REICHERT: The way I read this is, if you put your ACL equal to the OFL, that basically means that ACL is ABC is OFL. We know, for the stock assessment -- We have acknowledged that the stock assessment has a very high uncertainty, and so that's where I think we need to discuss whether or not this is something that we can do.

DR. BELCHER: Right, but, in that situation, again, if you're acknowledging that all three are set equal, then the idea of dropping an ACL to an ABC, you're not changing anything in those subsequent years if you're going to default them all to the same value. Otherwise, what's the differential between OFL and ABC for the second year?

DR. REICHERT: The way I understood it, but correct me if I'm wrong, is -- Gregg, go ahead, to that point?

MR. WAUGH: Thank you, and yes. We just got the revised National Standard 1 Guidelines, and there were a couple of conference calls, one last week and one this week. What the agency has clarified is that, in certain cases where there are data uncertainties, you can phase in your reduction to your ABC, and that can be done over three years.

The initial step has to get you down to your OFL level, and so, in essence, you can set your ACL equal to your OFL as step one. Then step two is somewhere in between that and your ABC. Then, by step three, year three, you have to be at your ABC. That is some new flexibility that we do have.

DR. BOREMAN: Last year, the Mid-Atlantic Council was faced with a similar situation with summer flounder, where the new ABC came in and it caused I think over a 30 percent reduction

in catch, the new ABC recommendation, and so we were -- The SSC was asked for a phasing-in approach.

We didn't phase in the ABC, but we phased in the buffer. It was a buffer of 30 percent or so. We phased that in 10 percent per year, and so a 10 percent buffer the first year and 20 percent the second and the full buffer in the third year, and so not the ABC, per se, but the buffer between the ABC and the OFL. That way, we made sure that the ABC was still lower than the OFL. I am really uncomfortable, first of all, of having the SSC recommend an ACL to the council. That's their job, but, setting the ACL equal to the OFL, I think we're plowing new ground here, and it would set a bad precedent across the country if we did that. Thank you.

DR. REICHERT: Thank you, John, and I agree with that. That's why I was struggling with this. Mike, did you have a question relative to this point?

DR. ERRIGO: Yes, I do. I was wondering if -- If we change the recommendations to go from between OFL and ABC and then down to the ABC, does that mean that we have to rerun the projections with those landings trends, because, currently, the projections assume that you catch the ABC each year, and so, if you're going to catch the OFL in the first year, and then let's say the ABC in subsequent years, do you have to rerun the projections? Can you rerun projections that way? I am just wondering about the procedure, or do we need to or not?

DR. REICHERT: That's a good point, and I think we should, or that should happen. I am not entirely sure how to approach that. Does anyone want to comment on that?

DR. NESSLAGE: I would think we would need to, but we would have to change the code. It's not set up to do it that way, unless Erik or Amy want to correct me.

DR. REICHERT: I still want to go back to the point that John made. Fred, I saw you wanted to comment on that?

DR. SERCHUK: I have two comments, Mr. Chairman. One is, to go back to our discussion about landings and where the landings were relative to ACLs, this is one of the stocks where it was exceeded in the past year, correct? Now I am worrying about we're exceeding the ACL and now we're going to set OFL equal to ACL, where we know that overfishing is going on.

There doesn't seem to be any basis, in terms of the management system, other than to do better monitoring in the future, and so I am just thinking that normally you wouldn't have any problem if there was a management response to close the fishery, but the fishery has been closed, where, in fact, the ACL has been exceeded. I have no problem with it, in theory, except that the management action is only to do better monitoring the next year, and so I'm thinking that what is that doing to try to prevent or reduce overfishing, because overfishing is occurring on this stock. That is the issue. Management, they can -- It's not a good track record for management to allow overfishing to occur, right?

DR. REICHERT: I agree, but then I want to point to Gregg's point earlier that the new National Standards will allow us that phasing in of those new regulations, and so I agree, and, Gregg, maybe you can comment on that, but, the way I look at it, that means that you may allow overfishing to occur while you are phasing that in. Is that the point that you were trying to make?

DR. SERCHUK: (The first part of the comment is not audible on the recording.)

My concern is that, if we look at the graphic we have, it's going in the wrong way relative to the FMSY. It's actually increasing. I have no problem with that. I see a management system here, at least this past year, that basically has said that when we get -- If we exceed the ACL that we close the fishery, and that's a good thing, but if the only consequence of that is to do better monitoring next time, all that means is that you can exceed it again.

The difference between setting the ACL and the OFL is there is no management uncertainty. That is, there is no uncertainty in the tracking of the resource or so on and so forth, and clearly that is not the case. I know management has done its best job to project the landings, and it's not a perfect world, but the fact that they're exceeded is problematic for me. Thank you.

DR. REICHERT: Thank you.

MR. WAUGH: To clarify, the SSC provides us the ABC and the OFL. Then the new flexibility is the council, in setting that ACL, then, in the first year, we do have to end overfishing. We would have to set it no higher than the OFL, but then we can take an additional two years to get the ACL down to the ABC, and so that's just to clarify, but the first step is we do have to end overfishing. We can't allow overfishing to continue.

DR. REICHERT: Thank you for that. I was mistaken in what I just said earlier.

MR. GRIMES: I just wanted to add one thing. This rule was just published Tuesday. I had access to it before, but it's a lot to digest. I think, looking at the revisions to the Guidelines, they envision the ABC control rule specifying when these phasing in of the new ACLs would occur and that the control rule would specify, in some detail, the circumstances under which this would be allowed and when it wouldn't be allowed.

It strikes me that just trying to do it here at this meeting without ever even having the council discuss it or look at in the context of the existing ABC control rule is probably a little premature, and I would think that the uncertainty -- As you've just heard discussed, the uncertainty would be one of the big factors in deciding how you were going to phase or when it was acceptable to phase in your reductions in ACL. Thank you.

DR. REICHERT: Thank you for that comment. That is very helpful, and so where does that leave us?

DR. BELCHER: Following up on what Fred was saying, I kind of have that same agreement. Even if we could, understanding that it's premature at this point, but if the ACL were set to OFL, when you have a habitual overage -- You're not even at 50 percent probability of overfishing. You are almost guaranteeing that you're always going to exceed that, if that's the habitual track for that fishery. You would almost want to be a little bit more conservative in that, to avoid if they're overfishing by -- They're over 100 percent, right? What was the overage amount?

DR. ERRIGO: I will bring it up, but the recreational was over and the commercial hand-line was over. Commercial hook-and-line was 11 percent over. The longline was at 96 percent, and so very close to the ACL, and then, recreationally, they were over by 19 percent.

DR. BELCHER: If you average it out, it's between 10 and 20 percent over, and so, somehow, you would at least want to know that you can stop it before it gets over the OFL value. Right now, we're exceeding ACL every time, and so what I'm kind of doing in that substitution -- You can almost expect, if nothing changes, that you're going to be over by 10 to 20 percent, and so is that something that you're willing to do in setting ACL to OFL?

DR. REICHERT: That is relative to the tracking is what you're saying, because you reduce that number, the ABC or ACL, and so, because of the management uncertainty, you run the risk of an overage.

MR. CARMICHAEL: I think we might want to look at other years. I think we've gotten reports like this in other years before. We're saying clearly the management system is not constraining the fishery, and let's look back at other years and get a sense of what the overage is, and I would be careful in averaging them within one year, because it's the longline fishery that is the bulk of the landings, and so you would have to weight that, but I think that's the one to really look at. The other ones are such small landings that if they go over it's not really any big deal, but is the longline fishery going over? Maybe they were 10 percent under last year. I think it would be nice to know that before we decide.

DR. BELCHER: Yes, and I was just giving that as a general idea. If the tendency is that they're over the ACL, do you really want to give them that liberty of being set at OFL if the tendency is to always be above it? The number was just kind of that idea of how far above. Likewise, do you undershoot it by 10 percent, because, if they're constantly going over by 10, to make the OFL mark, that would be mean that you would have to set it 10 percent below the --

MR. CARMICHAEL: I think that's the kind of language to get in to address their question about what are the risks of doing this, and then look at how efficient they've been, effective they've been, at keeping that fishery at the current ACL, or really at the OFL. Have we prevented overfishing? That's really the question. Then you can look at have you done well at hitting what you hoped to hit, and, if you haven't, then that's something to comment on.

DR. REICHERT: Genny, I believe you had something to that point.

DR. NESSLAGE: I do have the numbers for the -- Well, I have it for all the fisheries, but, as John said, it's really the longline that is the bulk of the landings. If I'm correct, the ACL was 418. In 2012, it was 424 landed, 489 in 2013, and 523 in 2014, and so they're just over, but consistently in the last four years, if that's helpful.

DR. ERRIGO: Here is the golden tilefish landings that I have. They're pretty close. The purple line in the ACL, and the blue line is total landings, and so we are exceeding. As you can see, it's not perfectly what the Science Center has. We did exceed in 2015, and we exceeded in 2014, and I think we did exceed in 2013. The landings that I have, the blue line is slightly above, and I think it's important to look at the comparison to the ACL, because, right now, the ACL is set

significantly lower than the ABC, and so we're trying to constrain catches to the ACL, although we did exceed the ABC last year.

MR. CARMICHAEL: I think you can use that, because Gregg mentioned having the step-down, and so that might mean that you adjust the step-down. If you've, on average, been consistently exceeding the ACL by say 10 percent, then you could recommend to the council that -- If you set it at greater than 90 percent of the OFL, based on the ability of the management system to meet the ACL over the last four years, it seems like you really would very likely exceed the OFL and result in overfishing, and so maybe you temper somewhat that adjustment, that ratchet-down system, to not go say within 90 percent of the OFL, if you really want to have a reasonable chance of preventing overfishing.

DR. REICHERT: Robert, I will get to you in a just a second, but, as a clarification, what we are looking at is the overages relative to our ABC. You put up there the ABC.

DR. ERRIGO: ABC and ACL were both on that graph.

DR. REICHERT: Okay, and, because we have a relatively high buffer, the OFL is actually above that, and so what I'm saying is we are talking about overages and overages, but I want to get a clear picture of how that relates to the OFL level, because that's where overfishing is occurring, correct? If we are talking about overages, I understand that management uncertainty, but I want to make sure that, when we're talking about overfishing, we're talking about the OFL level and have we gone over that OFL level.

DR. AHRENS: I think certainly, given the uncertainty, that some additional model runs to add information to this discussion would be really useful. I also think it would be probably worthwhile, given how close the stock is to the overfished state, to say, given that is being proposed, what is your probability of pushing that stock into the overfished state and therefore having to develop a rebuilding plan, and I think that is a critical piece of information for the council to consider. Thank you.

DR. REICHERT: Do you have any specific recommendation, in terms of what model runs would be most informative for us?

DR. AHRENS: I think if you're going to play with the buffer, and I think that's a pretty good recommendation, to play with the buffer, if you're going to do it, instead of the actual limits, to look at whether you drop that to 5 or 10 or ratchet it up from 5, 10, 15, or 20 to the 30 percent that it's at to look at kind of, over that period of three years, what is your probability, at those various levels of changing that buffer, to moving into an overfished state.

DR. REICHERT: Okay. Thank you.

DR. BARBIERI: Rob stole my thunder a little bit with the rebuilding plan, because I was thinking about the explicit question or action item there. It's about what is the biological risk, and it depends on how we interpret what biological risk is. In terms of catastrophic or significant impact on the biological capacity of the stock, I don't think it's too much of a problem with talking about a three-year time horizon.

That would eventually, in fairly short order, converge to the ABC, as prescribed, but I think this is the biggest issue for the council itself to discuss, is this probability of getting into that overfished situation and having to -- In that triggering a rebuilding plan, and that would be the potential for something that has many implications, and it's sort of like a resource issue for how much time that it would be taking to implement all of those things.

DR. REICHERT: Thank you, Luiz.

DR. SERCHUK: I had exactly the same comment, Mr. Chair. The two figures that we have show that there's been a slight creep in F above FMSY for the past two years. It's above the line in Figure 10. We're hugging the line for overfished.

DR. REICHERT: That's Figure 10 in Attachment --

DR. SERCHUK: It's in the SEDAR 25 versus the 2016 update. There's a Figure 10 that shows that F was increasing in the past two years. The bottom figure shows that the SSB has been slightly above the threshold, and it looks like it's, if anything, a slight decline in the most recent year.

DR. REICHERT: For those that are trying to look at that, do you know what attachment that is? Is it 15? For those of you that want to pull that up, that's Figure 10 at Attachment 15.

DR. SERCHUK: That is the concern. The other concern is when will we know if those trends have abated? We won't know until we do the next assessment, will we? We don't have any index, or do we? I guess that's the question. One doesn't mind going in a different direction if you have some barometer, some idea, that if we're on the right path, but if you have to wait until the next assessment, and the assessment -- Without going back to the SEDAR schedule, I don't know when the next assessment is, but, if it's on a five-year time basis, which it has been, certainly one doesn't want to know five years from now that, because of the actions that they've taken, in terms of either the projected catches or the catches, that we are in an overfished condition and we've been that way for three years at that time, because nobody wants really to get into a rebuilding plan. That seems a pretty high risk, and I just think the signals are not right now. We're hugging the line. The F has been going up. We won't actually know until the next assessment, because we don't have a barometer, and I think those are the things the council should be thinking about.

DR. REICHERT: I agree. I don't believe, currently, that golden tilefish is on the schedule. The other thing is, given the discussions we've had earlier, in terms of the data availability, I think we agreed that there is a significant need for better data on these species, and so that's another dilemma we will have. Unless we have that, our uncertainty will remain very high, and so get an update on stock status, but, unless we get better data, the uncertainty is not going to change.

DR. BELCHER: My comments, I think both Luiz and Fred have said it better from the biological standpoint, because, again, I was just getting into the algebra of, with the overages, what do you expect, looking at percentages? You would have to know more about what that expected percent overage is to know what you would have to buffer, and similarly for the ABC, because if the ABC is only within 10 percent of OFL and they are constantly going over by 12 to 15 percent, you're still above OFL, but I think, again, sticking to what we should be talking about in currency, the biology, both of them have said it much better.

DR. NESSLAGE: I don't know if this will get at the concerns that you are raising about how close we are to the overfished definition, but all of the projection results provide a list of, for each year, what the ABC would be, but then also the proportion of stochastic runs that were above, and I guess you could subtract and get below MSST. At the P of 0.3, which we were considering originally, or you guys were considering at the last meeting, when you start off, it was about 50/50.

DR. REICHERT: Can you indicate what documents that is?

DR. NESSLAGE: It's not in your materials. It was in the supplement that you guys received. It's Table 2 of the supplement that I sent, but, basically, it's about 50/50 in 2015, 2016, and 2017, and then it goes up to 60 percent in 2018, 65 percent of the runs in 2019, and 70 percent in 2020, and so there's still a 30 percent chance, even at a P* of 0.3, that some of the runs would be below MSST, if that's helpful.

DR. REICHERT: Thank you. One of the things we haven't discussed is the socioeconomic impacts of the phased-in approach. We did discuss the pros and cons of that phased-in approach, and correct if I'm wrong, but that phased-in approach, given the -- That was based on the new standards, and, given the fact that the standards just came out, it may not be the most appropriate or wise decision, and is that a good characterization of what we discussed? Then we did not discuss the socioeconomic impacts, but that may be irrelevant if we cannot recommend this phased-in approach. However, I do believe that we should talk just a little bit about some of the impacts, socioeconomic impacts, of the decisions that we are making. Is there anyone that would like to comment on that?

MR. HARTIG: Tilefish is a bit different. We have an endorsement for the longline fishery, and that endorsement, as soon as we put it in, was worth $100,000, as soon as we implemented it. I know of three or four that have been transferred. One was $110,000 and the last one I heard was $150,000.

One of the reasons why the council felt it was so important for these phase-ins was because of the large amount of expenditures that these new fishermen getting into the fishery had made in order to be able to try and recoup some of that economic loss that they're going to incur from buying the endorsement. Now, these fishermen going into this knew that the council had set a relatively conservative catch level. They also knew that we had some pretty substantial recruitment in 2012, and so they're looking at -- From a business standpoint, they're looking at making a business decision based on conservative estimates and better recruitment in the fishery.

Now, that may not all pan out, from the recruitment side, but we did see that, and the fishermen were expecting to get better results out of the assessment instead of poorer. Unfortunately, we didn't, but there is -- In comparison to other fisheries, for people who actually invested in that longline endorsement, there will be substantial economic hardships incurred by the amount of money that they spent for that endorsement, and so it's pretty tough. I understand you all's arguments, but I still like the way of using the buffer to try and be able to phase this in.

It doesn't get into the changing of OFLs and things of that nature. You just use the buffer, and so I was hoping you would find some way to do that, but I understand, with the overages and Carolyn's concern that we're not going to be ending overfishing, based on the actual landings. Now, I will tell you that if you add recreational landings in there that you're adding in a lot more

uncertainty, because it is a rare species. It has very high CVs, and we have seen, for snowy grouper and golden tile in particular, when we went back in time -- In 2005, we had a huge spike in the recreational fishery that the assessment team went in and imputed the two years on each side to get an average for 2005, and that was used in SEDAR 25.

What is alarming to me, to some degree, is, subsequent to that, MRIP changed the value, and I don't know when that was, and that's something we need to find out, because if the council is managing on a year-to-year basis, based on what the recreational fishery caught, and then, some years down the line, MRIP changes the estimated number, what were the impacts on the fishery? What would they have been, based on the change? Would they have been as severe? Were recreational catches constrained for no reason, based on the new MRIP numbers, and I don't know why MRIP would go back in the past and change a number like that, but that's something new to me.

I have not seen that done before, and others of you may have, but that's pretty concerning for us, when a council is trying to manage on a year-to-year basis on the recreational fishery on very uncertain numbers, and then to have that number change years after the fact. That is tough to swallow. Yes, it was changed, but it's still -- If you look at that number, it's still twice as high as any number in the surrounding years, even though the assessment team decided to use it, because it was more in line -- Even though it's twice as high as anything in recent years, it was still used in that vein. My frustration with MRIP for the South Atlantic, in trying to manage our recreational fisheries, is at the highest level it has ever been, and I'm going to stop. I am not going to go any farther, because I'm not going to get into that.

DR. REICHERT: Thank you, Ben. I know that especially the golden tilefish, as well as red snapper, will have a considerable number of questions, and I will also ask Ben if there are any other issues that we have not discussed that the council would like guidance on from us at the December meeting. With that, it's 12:20, and let's reconvene at 1:45. Thank you.

(Whereupon, a recess was taken.)

DR. REICHERT: Welcome back, everyone. What I would like to do is I would like to wrap this agenda item up in the next fifteen minutes, but we have two other important agenda items that we need to go through today. We have an opportunity to review the report on Thursday, and what I will do later is work with several others to refine the notes, so we have something that we can take a look at on Thursday.

Rather than going through the action points again, what I would like to do is kind of restate the main consensus statements. One is that the SSC still believes that the update assessment was the best scientific information available and also that the SSC did not see justifications for revising the ABC recommendations that we made previously. However, I also think that, having said that, if the council chooses to phase in the ACL, as is my understanding is possible under the new National Standards, that perhaps they should consider doing that a little under the OFL, given the management uncertainty that was pointed out by several of us. Maybe 90 percent would be a recommendation or could be a recommendation.

Also, I think it's important to point out that, as several of us have pointed out, that that would increase the risk of creating an overfished situation. The magnitude of that risk currently is very

difficult to indicate, but, as I think Robert and others have said, perhaps some additional model runs looking at various buffers may provide some insight in the risk level, but I currently would say that it's very difficult for us to indicate the level of risk to that. I know we talked about a variety of other issues, and they will be reflected in the report. With that, I would like to open the conversation and discussion and see if we have some additional issues.

DR. BOREMAN: If we don't provide the council with a new ABC, then they have to live with the one they have, and so, if they want to phase in an ABC, they still cannot exceed the recommendation from us. That's my understanding.

DR. REICHERT: I am going to ask either Shepherd or/and Gregg to clarify that, because it was my understanding that they can, under the new National Standards, choose an ACL between the ABC and the OFL, but maybe I am mistaken.

MR. GRIMES: After I spoke, I looked back through the rule, and I was correct. They do in fact have to have it in the fishery management plan, and so they would have to modify the ABC control rule, and they would have to specify -- They being the council. They would have to specify the conditions under which the phase-in would occur and conditions under which phase-ins are not allowed.

There is a lot that needs to be done between now and when it could actually be applied, but I think it's correctly that ultimately, even if they do have a phase-in, that phase-in would have to be approved by the SSC, and the ABC recommendation that comes from the SSC is still a limit on where they can set the annual catch limit.

DR. REICHERT: Thank you for that clarification. The bottom line is that the council can still not set the ACL above our ABC. Okay.

DR. CROSSON: I just wanted to address something about the economics that Ben Hartig brought up earlier, about the cost of these endorsements for golden tilefish. I just wanted to note that the SSC and SEP have both noted when the endorsements for golden tilefish or for black sea bass pots or any of these other ones came down the line that there was a danger in these, in that they presume that the fishery is somewhat static, that the ACL wasn't going to change and that the inputs for fuel prices would remain consistent over time.

The logic was you will reduce the number of participants to a level that the remaining fishermen can make a profit, but, again, that presumes that there is something static going on, and if any of these inputs, like fuel prices, go up or if the ACL has to be ratcheted down, because they're sort of all-or-nothing endorsements and they give somebody the right to go out there and catch things, it is going to cause potential economic instability in the fishery.

This is something perhaps that the council can think of in the future when they're going down this line, and I'm not bringing up the wreckfish example as something that should be idealized, but, when the wreckfish ACL was reduced some 88 percent, it threw the fishery into a lot of chaos, and Amendment 28, I think it was Amendment 28, was an attempt to reorganize the shares, so that a lot of the inactive shareholders would then have their allocations reallocated to the remaining fishermen.

They didn't even need to get to that point. By the time the council implemented the amendment, I think like 99 percent or 98 percent of the quota had already reallocated itself, and the fishermen were able to adapt to that. There is just certainly a comparison that you can make with catch shares versus the endorsements. The endorsements are not flexible in the same way, and I sympathize with the fishermen that are still in this fishery, because this is going to, again, cause some potential economic upset, but this is something that the council maybe will consider in the future, that there are inherent problems when you presume that the current situation is static, because it's not. It's not biologically static, and it's not economically static.

DR. REICHERT: Thank you, Scott. Anyone else have anything? I would like to turn around and ask Ben, are there any questions or issues that the council has asked of us that we haven't addressed yet?

MR. HARTIG: I think we're good, Marcel. (The remainder of Mr. Hartig's comment is not audible on the recording.)

DR. REICHERT: Thank you, Ben. I just wanted to make sure that we haven't left anything on the table. Then I also would like to see, unless any of the SSC members have any last comments, if there are any public comments at the end of this agenda item. Would anyone like to comment? Okay. Andy.

MR. STRELCHECK: I don't know if I fall into the public category or not, but two comments, really more procedural. I am not here to debate the assessment and the changes that were made to the assessment, but what has struck me with this assessment is there was certainly some modifications made here that have some dramatic changes to the outcome of management, and the frustration, obviously, in management is having to manage to a moving target because of shifts in the science.

We recognize that the science is evolving and improving, as it should be. In this instance, it was an update assessment. It's not clear to me at this point -- It's kind of a gray area as to whether this blurs the line between an update versus a standard and some of the decisions that are made in terms of the actual assessment process, and so I guess I would ask that SEDAR take a close look at procedurally how this is done and make sure that the guidance is clear in terms of updating assessments versus other assessment procedures.

The other part of this is more toward the Science Center, and I jump in and out of reviewing assessment results, but, in looking through the report, the base model run is really the modified base model run, based on the parameter changes, at least the way I'm understanding it, and I don't see a true continuity run that's presented in the report. It's more of a modification or sensitivity runs based on the individual parameters that were changed. I might be misinterpreting that, but it would be good to get kind of a continuity run relative to the previous assessment, just to see how the new base run compares with the previous model runs, just so we can better understand how much is it changing based on new advice relative to the old management advice that was provided from the previous assessment.

DR. REICHERT: Thank you, Andy. Can that be provided or is that generally provided? I vaguely remember discussions about the continuity run in our previous meeting. Can anyone jolt my memory?

DR. NESSLAGE: I did run it. I haven't looked at it in quite a while. You're talking about the old code with the new data or the old code with the old data?

MR. STRELCHECK: This would be essentially the SEDAR 25 assessment run, running it as previously configured with just the new data added to it, and so not making the modifications based on the multinomial approach, the age comps. It's not apparent to me that it's presented in the final report. The sensitivity run table that's presented provides the base model run. My understanding is that's based on those modifications that were made, but I might be misinterpreting it. I can talk with you offline about this.

DR. REICHERT: Okay. The point is well taken. Update versus standard, I think that is a valid point. I am not sure, John, when or where that decision was made and what changes are possible under an update or under a standard. Then this may also address some of the points that Fred brought up earlier in terms of some of the procedural SEDAR -- The terms of reference and at what point, for instance, the model choices are made, because, in some instances, and correct me if I'm wrong, they're in the terms of reference for the assessment workshop, but, because of the amount of work, more often than not, the assessment team would like to have at least some model runs done prior to the assessment workshop, and so those discussions are taking place in webinars prior to the assessment workshop, and so it may be good to have just a little bit of a discussion about that, given the concerns that Fred brought up earlier.

MR. CARMICHAEL: Two things here. One was talking about updates and what distinguishes them, and then the other was more related to benchmarks and how the models were chosen. First, with the updates, SEDAR does have some guidelines that describe when a standard or benchmark is required, certain things which can be done and trigger those.

If there was an entire new dataset, then you would need to consider doing an update or a benchmark. If you wanted to change the model framework, if you had a catch-at-age model and you wanted to do a different kind of model, then that would require a benchmark. The SSC is given the authority and the responsibility to decide what types of things, other than those, can be considered in an update, and so it's really the burden is on the SSC, when you do the terms of reference and then when you review the assessment, because you're the ones that take that assessment and write the recommendations from it. It's up to you to decide what things you will allow to be done under an update.

When you get update terms of reference and when you get standard assessment terms of reference, it will specify any type of changes which you may allow, and so that's the way SEDAR views it. There is a lot of responsibility for the SSC, and so do you want to talk about that some more before we talk about the --

DR. REICHERT: Yes, and I think it's a good reminder to us that we really should pay attention to those terms of reference, especially up to when the research track and the operational assessments are coming into play, because then that may change a little bit, and we pay attention to those terms of reference and take a good look at -- The problem there often is that we don't know beforehand exactly what changes may be happening, but, if that is clear, then I think we should pay attention to whether or not we feel that we should elevate an update assessment to a standard assessment.

If we feel that it has significant impacts on the outcome of these stock assessments, then maybe we should do that, and so I think that's a good reminder that we as an SSC have a responsibility in that choice. I am looking around the table to see if anyone has any questions or comments on that. Then to that second point, John?

MR. CARMICHAEL: The other point was the discussion, I guess, of how the model is chosen, and the assessment workshop has a term of reference addressing that that says a model should be chosen that's compatible with the data that you have, and so the intention is, after the data workshop has put on the table the data that they think are appropriate, robust, reliable, and relevant, and you have the evaluation of all the different data sources, there should be some consideration of, okay, what are the appropriate models to use for the data which you have.

That's a specific term of reference in the assessment workshop list of terms of reference, and the idea is that -- In some cases in SEDAR, we have attempted to have discussion of that say at the end of the data workshop, when you have data people and some analysts that kind of bumped its way back to the assessment workshop, because maybe you don't have all the type of analytical folks who might want to take part in that discussion, but the term of reference has always kind of been around, and it's expected that data should be evaluated and you weigh the pros and cons and look at what types of dataset you have and what sort of models they support and then decide the model there.

DR. SERCHUK: One thing I have learned about SSCs, and I have been a liaison to both the Mid-Atlantic Council SSC and the New England Council, is SSCs sometimes have some memory problems. That's not the case here, I'm sure.

DR. REICHERT: It never happens.

DR. SERCHUK: It seems to me that what John was just saying, in terms of model selection, would be most appropriate for a benchmark, and so, if I heard you correctly, Mr. Chairman, I think what I interpreted from your intervention was that we should have standardized terms of reference for the different types of assessment treatments, one for a benchmark and one for an update and maybe one for an operational.

DR. REICHERT: We do.

DR. SERCHUK: Okay. I just wanted to make sure that people understand that, so that, when we get these terms of reference to the committee, we realize that this is going to fit into the type of assessment that it's been decided for that the stock is going to be assessed. Thank you.

DR. CARMICHAEL: We do, and I was talking about the term of reference about the model selection is in the benchmark, because, in the standards and updates, you aren't changing the model package, the model type.

7. SNAPPER GROUPER AMENDMENT 43 - RED SNAPPER

DR. REICHERT: The advantage is that we have SSC members that are present that are participating in each of these different types of assessments, and so we have there an opportunity to participate in the choices that are made in the various workshops, including the assessment workshop. I just wanted to bring that point up, because that was something that was discussed earlier. Unless there are any last-minute remarks, I think we covered the action items, and we may be able to look at this again, as I mentioned, on Thursday. We had our public comment. With that, I would like to move to Agenda Item Number 7, Red Snapper.

Red snapper, the attachments are Attachments 19 to 23. There are three action items. The first one is evaluate the MRIP estimates for red snapper and determine if they are reliable and adequate for management, including quota monitoring and discard information. Then the second one is consider alternative reference points and then comment on the risk of using alternative SPR metrics in lieu of F 30 percent SPR in determining stock status and running projections and review the projections as Fmax and F 20 percent SPR. The third sub-bullet is update or revise fishing level recommendations, as appropriate.

The third action item is relative to Amendment 43, the ACT alternative, which is Action 4, to discuss the pros and cons of proposed alternative method for calculating ACT and address what are the benefits to using the proposed methodology over the council's current ACT rule of one minus PSE multiplied by the ACL. I believe we have two presentations, one by Dr. Kate Siegfried and one by Chip Collier.

DR. ERRIGO: I will give a brief overview of what I have for the MRIP intercept estimates and reliability. I was wondering how you wanted to proceed. I was thinking maybe to go over the projections and stuff first, but I can go over the MRIP estimates if you --

DR. REICHERT: Let's do the projections first. Katie, thank you for joining us for red snapper, part 3. This is Attachment 22 in your briefing book.

DR. SIEGFRIED: Thank you, Mr. Chairman. I am here to provide a response to the memo from the council requesting further projections, and so I will just jump right in. I have a slide for each of the requests which we were given. The first request was for these separate management benchmarks, Fmax and F 20 percent, to provide a number of metrics, and so the associated fishing mortality rate and the MSST, equilibrium stock biomass, spawning stock biomass proxy, yield in pounds and numbers, and then also what is the percent SPR that Fmax corresponds to.

Fmax is very similar to F 20 percent. We went ahead and did all of the analysis with both, as requested. Fmax corresponds to F 19.5 percent, and the values you can see there are only distinct out past where the council can probably manage. Then the new set of management benchmarks was provided, as requested. That is all in the report.

The second request was to provide the rebuilding projections with these new FMSY proxies and then provide the full suite of outputs, as we normally do, for projections. Management was assumed to begin in 2017, and the projection methodology is identical to what has been provided in the past, most recently for F 30.

Both projection scenarios show that the stock still does not rebuild with 50 percent probability by the end of the rebuilding time period. Here are some figures for you. They are probably starting

to be very familiar to you, but the solid lines or the solid circles are the expected values of the base run output. The medians are represented by the dashed lines, with open circles, and uncertainty around that is represented by the thin lines, and that's the 5th to 95th percentile. The solid lines represent either F 20 or Fmax, and so this left column is all of the projections for F 20 proxy and, on the right, it's for Fmax. The bottom plot, what we want to see is in the terminal year of the rebuilding time period for this to have reached this 50 percent line, and we see that that doesn't in either case.

The third request was to provide the rebuilding projections using those proxies for the MFMT, and, again, to include the full suite of projections. The fishing mortality that allows for rebuilding by 2044 is 0.2087. If you recall, for F 20 -- Well, you don't have to recall, but I will just show you. It was 0.212, and so 0.2087 is very, very small difference. For Fmax, it's 0.214. What it was before, it was 0.217, and so we're talking about differences in the thousandths at this point.

Here is the similar plots to what I just showed you, except for we get what we want. In the terminal year, we have 50 percent probability of recovery for both scenarios. You do have -- Which document is this in, which number?

DR. ERRIGO: The projections at Fmax and F 20 percent is Attachment 21.

DR. SIEGFRIED: Okay, and so all of the tables of numbers are in that report. I thought it would be rather tedious for you all to look at all the tables, but if you want to see the difference in yields at that terminal year or in the first five years, which is where all the action is, you can find it in those reports or in that report.

What I thought would be interesting is to compare projections in ways that you all care about, and so what are the landings that can be removed under these scenarios and what are the discards? I had a really hard time finding a color scheme that wasn't difficult to differentiate, but this is what I found.

Obviously the first year of management is in 2017, and so that's when all the action starts. We have a big difference here. F 30, of course, is going to be a lower landings that's allowed, and then you have the two sort of groups. I will explain the new rebuild versus F rebuild to you in a minute, but you can see, out in time, there is very little difference in the landings that are allowed. There is some difference between 2017 and about 2027. Again, in discards, the main difference you see is between F 30 and then the other two proxies that were requested by the council, and so hopefully this will be useful in seeing the difference long term of the landings that are available.

DR. REICHERT: Just to make clear, landings do not include the discards?

DR. SIEGFRIED: No, I have them separated here, and that's right.

DR. REICHERT: Thank you. I just want to make sure that people understand that.

DR. SIEGFRIED: Yes, I kept that all separate for red snapper. The Science Center then also wanted to provide some other analyses for you all. The memo and the motion that prompted the memo requested additional runs, which we did interpret to mean the projection analyses. However, we further interpreted that language in the motion to provide advice regarding risk as a request for

a scientific analysis of the probability of overfishing for the various reference points, and that would include Fmax and F 20 percent. Also, the council didn't have their current control rule when developing the rebuilding plan for red snapper, I don't believe, and the rebuilding plan was set to recover to F 30 with 50 percent probability by 2044, and so we had to look at F 20 and Fmax and all those.

Then some background on why we're considering potential reference points. The assessment for red snapper, the most recent benchmark, provided an estimate of the mean recruitment and deviations around that recruitment rather than a steepness value. The South Atlantic red snapper data are just insufficient to help us estimate a steepness value, and so then we don't have our stock-recruitment relationship and we don't have a way to directly estimate those MSY-based benchmarks, and so this is why we're coming up with a proxy.

The NS Guidelines have recommended the use of proxies. We have seen this in many other regions, and the current rebuilding plan uses a proxy. The initial scientific guidance indicated SPRs in the range of 30 to 40 percent were reasonable for just a range of fish stocks. The precise SPR, however, associated with MSY is dependent on the actual underlying stock-recruitment relationship and the fishery characteristics, and so we wanted to look at things other than what was set as a result of the last benchmark and the rebuilding plan.

The way that we approached this is we looked at the meta-analysis of Shertzer and Conn. We thought that provided a good basis to judge what an approximate value of steepness would be for a red snapper-like species, and we have used this meta-analysis for other stocks, looking at the distribution. The mean steepness is 0.84, and that corresponds to an F 27 percent, but we needed a distribution of FMSY to account for the uncertainty in that F proxy. The Shertzer and Conn paper provides a beta distribution of steepness. We used the distribution. We drew from the distribution, and then we calculated FMSY, holding all the other model parameters to the base model values.

What we ended up with was this probability distribution that you see in the top-right corner, and I have put on the plot for you the Fmax, which is this far to the right, and F 20, which is the solid line. Then, as you go back, it's 27, 30, and 40 percent. The further into the tails of this MSY distribution, the higher the probability of over or underfishing.

On the bottom-right corner, this is a cumulative density function of what you see here, and so this is a PDF and this is a CDF, and I put the same lines there. You can see, if we chose F 20 or Fmax that we would be so far on the tail that we would actually, with Fmax, be at the top of the CDF. A proxy in the portion of the curve with more density would lower the probability of over or underfishing, and so we saw this -- By the way, this is 10,000 or 20,000 bootstrap runs. It is very smooth when I draw more, but this is just for this document.

We think then that an appropriate SPR proxy for red snapper, that takes into account both the biology and the similarity with the species in that published meta-analysis would be something around F 27 percent, and here is the F that corresponds to F 27 percent.

Here is other plots that seemed appropriate. Here, in the bottom-left corner, this is percent SPR and the implied steepness, and so here is F 30. What we're recommending is F 27 and then 20 percent for your reference. It's been asked for Fmax, and so here you can see this is the fishing

mortality rate and then the yield per recruit, and so the Fmax and F 20 are very similar, in that they're at the top of that yield per recruit curve. Just as extra for you, fecundity per recruit is on the bottom-right corner, with all of the corresponding proxies.

Then the next step that we took was generally we would be asked to do projections, rebuilding projections, that would correspond to the control rule, which we hadn't for this, because it was under rebuilding under a different plan, I suppose, but we looked at the council's control rule. Now, this is the scientists looking at the control rule and just using our best judgment. This is in no way telling the council or the SSC what to do, what we think that they should deem as appropriate for each of these dimensions. This is just a thought experiment. Obviously we would do whatever the SSC came back with, as far as their judgment about each dimension.

Using the descriptions in each of those tiers within each dimension, we scored the red snapper as follows, and this resulted in a 67.5 percent probability of rebuilding, and here is these dimensions for you all to take a look at when you do look at the control rule. Then, using the new value, we carried out two additional rebuilding projections, and we provide those values of F here for you as well, and the rest of the documentation is in the report. This is just sort of seeing into the future, in case you wanted this, because any projections we can provide you, we really like to do that.

Then the fourth request that we got in the memo was to look at differences in total length size limits, and these are minimum size limits, and how they would affect future selectivity and use these current reference point values and perform rebuilding projections. We had a call with council staff to ask about this, because, as all of you are aware, one of the most difficult things now about assessing red snapper is working around all of the regulations. We have a twelve-inch size limit, a twenty-inch size limit, a moratorium, mini-seasons, et cetera, et cetera.

The current assessment has selectivity in these three time blocks. We have a before the twenty-inch size limit and during the twenty-inch size limit. Then the last one is during the mini-season and moratorium. All fish are discarded during the moratorium, and there is no size limit during the mini-season.

We assumed the request to mean that the reference points requested in their most recent memo is F 20 and Fmax, and then we assumed that the eighteen-inch size limit would act more as a size limit did during the twenty-inch size limit before the mini-season. It wouldn't be a size limit mixed with a bag limit. The twenty-inch size limit has been represented in the current assessment, but we don't have any data to investigate precisely how an eighteen-inch selectivity or an eighteen-inch size limit would affect selectivity, particularly if there is a bag limit, but we did our best.

Using the variability in size at age, we calculated the distribution of size at age for ages two, three, and four. The bottom-right, you will see a plot, and the solid line is age-two. That is the distribution based on the von Bertalanffy parameters of what size an age-two could be. The next curve you see there is age-three, and the next curve after that is an age-four. The first solid line is eighteen inches, and the second solid line is twenty inches.

An eighteen-inch fish is approximately two-and-a-half years old, and a twenty-inch fish is approximately three years old. There is no probability of an eighteen-inch fish being one-year-old. The overlap of these distributions show that either size limit can correspond to age-two, three, or four, with different probabilities.

We used the change in probability. What that means is what the densities under the curve of each of these ages at an eighteen-inch size limit and the density of the curve under each of these curves at a twenty-inch size limit and looked at the difference. We used that difference, or that change, in probability of being each age at each size limit and adjusted the total landings and discards selectivity curves accordingly.

What we did here shows a maximum effect, because the smaller proportion of selectivity would be affected if this exercise was carried out in completion. The fleet selectivity here is only represented by the terminal time block, and so we have actually applied that terminal selectivity to the whole time, and so it changes selectivity more because we used this change to apply to all selectivity for the projections. What you see here is that left figure is the change in discards selectivity. The new, with the eighteen-inch size limit, is the solid line and the old, for your reference, is these open circles. The bottom-right is the same pattern, and so the open circles are the twenty-inch size limit and the new eighteen-inch size limit is the solid line.

We carried out deterministic projections. There are so many questions about what the council really wanted us to look at that we didn't run through a full stochastic projection, because we didn't have answers to all those questions, but the answer that we got is that there's a slight increase in the overall landings that are allowed by the end of the projection time period, and so about 460,000 pounds versus 446,000. However, a larger decrease was observed in the allowable discards, and so that went down by 30,000, and so the landings went up by 14,000 and the discards went down by 30,000, and so it was a net loss.

We have a lot of caveats for projections, as always. The things to keep in most are that projections, in general, just are not highly reliable past five to ten years, and we're being asked to look out to 2044, and so take that with a grain of salt. The fisheries were assumed to continue fishing at their estimated current proportions of total effort using the estimated current selectivities. Any new management regulations would alter those proportions or selectivity, and we would need a new time block for selectivity. There may be displaced effort, and so that would all change how these projections related to the stock. The projections also assumed the same spawner-recruit relationship that we had in the past and that past deviations were all that dictated the future uncertainty in recruitment. I think that's it. Are there any questions?

DR. REICHERT: Any questions for Kate relative to this presentation? Thank you for that lot of work that you did in order to address the questions from the council. Does anyone have any questions at this point? Seeing none, questions may come up later, and so I hope you will be available to address some of them later on in the discussion, if needed, Katie.

DR. SIEGFRIED: Yes, I will be here all day.

DR. REICHERT: Thank you so much.

DR. ERRIGO: Maybe we should address the action items concerning the reference points now, while it's fresh.

DR. REICHERT: That's a good point. Let's pull those up. Mike just put up the action points, and these are relative to Action Number 2, consider alternative reference points.

DR. ERRIGO: Just real briefly, when I crafted the overview, it was based on the council's request of F 20 percent and Fmax. Then the F 27 percent was also explored, and so that didn't get into this document, but that should also be one of the considerations, since that was explored.

DR. REICHERT: Thank you, Mike. Are there any comments on the risk of using alternative SPR metrics in lieu of the F 30 percent SPR? In particular, relative to the risk of overfishing using either an Fmax or an F 20 percent?

DR. BARBIERI: I think this is a complicated issue, because -- I mean, we're trying to choose a proxy for MSY, but we don't really actually have an estimate of MSY. I think that the approach that Katie and the Center folks took is logical, to actually bootstrap it based on that meta-analysis and the beta distribution of steepness that can be used as a prior.

My problem with this approach that I am trying to wrap my head about, biologically, and I understand that we're against the corner here, in a way, in trying to come up with good proxies when we don't have MSY estimates, but if we use that 0.84 pretty much to fix steepness for everything, to some extent, we are kind of sending a message that the compensatory capacity of these different stocks are very similar, and, biologically, I find that difficult, and so something like -- I was looking back at the snowy grouper.

If we used a fixed steepness of 0.84, and, if you look at the life history and population dynamics of snowy grouper, relative to red snapper, it's a very different story. It's a hermaphroditic species and all of the other biological constraints that you have with a species like snowy grouper. The same thing for gag grouper, and so I'm not sure we have a whole lot to suggest differently, but, biologically, I find it difficult to reconcile the compensatory capacity, which is basically what we are measuring by steepness estimates of the stock-recruitment relationship, is the same for red snapper as it is for gag and snowy grouper. I just put this out there for discussion, Mr. Chairman.

DR. REICHERT: One of the things that I thought, and we discussed before that red snapper is actually a kind of peculiar species. It grows really, really quickly. It matures very, very early, yet it's a long-lived species, and so, in that respect, if you compare that with species such as gag and snowy grouper, there may be some characteristics in the biology of the species that may lead us to potentially, based on the biology, to make some different choices. I am not saying that we should, but I just want to point that out, and I am not sure if that fully addresses your concern, but I would like to open the floor to others to reply or respond or comment on what Luiz just said or give Luiz an opportunity to reply. We have talked about, the fast growth, yet it's a long-lived species. Perhaps the resilience of red snapper is different than, for instance, some other species. No comments?

DR. SCHUELLER: We are talking about steepness, right, and some linked biological factors. I guess I, based on my experience with menhaden, and not in the Atlantic, but in the Gulf, they don't fall in line with what people's general notions are for how steepness should behave, given biological parameters, and so I don't think that there is good evidence to say this species has these characteristics and therefore this is the value. Beyond that, this might be the best thing we have, is a meta-analysis. I don't know what the other recommendations would be.

DR. BARBIERI: Yes, Amy, and that's the problem that we find ourselves in of what are we going to do. Here, we have a meta-analysis that was based on South Atlantic data, and a whole suite of species, and we never have had an estimate of MSY for red snapper, and so how are we drawing those -- Assigning inferences, and I'm just thinking about the -- It becomes complicated, to me, to pass the red-faced test in saying, gosh, this is aligning that might -- The value that I am assigning to this is coming from a suite of species that I think is representative.

We have discussed the same thing for gray trigger, and I feel like, my gosh, gray trigger is a demersal spawner, a nest builder, with nest guarding, and, I mean, the vulnerability of that species and the compensatory capacity has to be wildly different than what it is for red snapper or for some other gonochoristic species that shows early maturation and fast growth, and so this is the part -- As we try to apply life history into this process, I am thinking about a couple of recent papers that were published talking about --

We keep talking about some of the other life history theory and how that was applied to looking at compensatory capacity of species, and some of those models have been updated and new sort of theoretical approaches have been proposed, and I just think that those things need to be discussed and evaluated in more detail, because, otherwise, we don't have, analytically, any other options of where we can go with this other than relying on the life history theory. In that case, I can't reconcile that same value of steepness being applied for those highly separate types of life history attributes.

DR. AHRENS: I think you bring up some good points, Luiz, but I think it's important to remember that, when you take a look at a calculation of FMSY, it's natural mortality rate selectivity relative to maturity and steepness that go into that calculation, and some of that early -- Certainly if you go back to the Meyers meta-analysis, it's really -- That steepness fell out as kind of life history strategies, so that pelagics seemed to have lower steepness relative to gadoids and the benthic seemed to have a higher steepness, and so, absent, I think, more comprehensive meta-analysis that look across also gonochoristic characteristics, and you certainly have to start somewhere, and I think it's important when we think some things mature early, but live a long time, in theory, the relationship between selectivity and maturity is being accounted for in some of those calculations, and so it's not just steepness that's going into that FMSY calculation.

DR. SERCHUK: Just a question to Katie or for those people that might be more familiar with this species than I am. Is there any information in terms of how red snapper was treated in the Gulf of Mexico that we could draw upon or is it something that is out of the question?

DR. REICHERT: No, I believe that information is available.

DR. SIEGFRIED: They came up with F 26 completely separate from us and then looked at our analysis and said, hey, you guys did the same thing. It wasn't the exact meta-analysis that they used, but we calculated probability of density functions of MSY given parameters of the assessment as it was. We both fixed steepness at 0.99 for computational convenience and then figured it out after the fact, and so the methodology is very similar between the Gulf and what we're proposing here.

DR. SERCHUK: So it wasn't based on some understanding of the life history dynamics, as indicated by Luiz, and it was a forcing function to go in a certain direction? Am I understanding you correctly?

DR. SIEGFRIED: The only thing that's similar is that -- The 0.84 is the mean of that beta distribution, and so it's only the mean of that whole distribution that we drew, and we didn't consider the life history in the Gulf is similar to here, but it was using -- It also used the base model parameters and held those steady and calculated FMSY using the base model parameters and that beta distribution.

DR. SERCHUK: Thank you.

MR. STRELCHECK: Kate or Erik or others might know more, but the 26 percent SPR in the Gulf has been a long-standing estimate for well over a decade, and I don't know, computationally, how it was derived back at that timeframe. What we do know, obviously, from the Gulf and now what's similar to the South Atlantic is neither model is fitting a stock-recruitment relationship. Both are assuming a steepness of 0.99, and so we have started to see a fairly substantial contrast now in biomass in the Gulf, through the rebuilding plan, but we are seeing still considerable variability in recruitment, despite that biomass increasing.

It probably will take considerable more time, obviously, to still tease apart that stock-recruitment relationship. I guess where I'm struggling, from a management standpoint, is the decision about risk really is fundamentally based on then your decision about where you start that average beta distribution, and the curve that was shown earlier, assuming 0.84, if you shift it left or right, will then increase or decrease your probabilities of overfishing for the various alternative reference points that are being considered.

At this point, I think all we can say is that, based on the beta analysis, we know that red snapper could be around 0.84, but the assessment and other model-fitting exercises are also indicating that the steepness might actually be higher than that, which, at least in my estimation, is an indication that it might be more resilient to higher fishing mortalities, given its life history parameters.

DR. BARBIERI: I just distributed the Kindsvater et al. paper that came out, and basically it reevaluates what Kirk Winemiller and Kenny Rose had proposed some years earlier regarding the use of life history theory as information that would be applied. They actually use SPR metrics through a simulation type of procedure, to evaluate the ranges there.

It's too late for us to discuss this now, but since this issue -- Since we have so many stocks for which we can't really estimate steepness and have a stock-recruitment relationship that's estimated quantitatively, this might help inform some of the discussions going forward and take into account all of these multiple issues. Steepness is one of them, but, of course, there is a whole bunch of different issues, but just to help inform us, because this might provide us some alternative ways to look into this and to discuss this issue going forward.

DR. SERCHUK: I understand we're dealing with a very difficult situation here, and, at the risk of being simplistic, red snapper went through a benchmark, correct? We had the recommendations coming out from the May meeting based on the benchmark. We're revisiting it now because the council has asked for some additional runs and so on and so forth, and I understand that, but, with

all other things being equal, would it not have been better for these other issues to have been subsumed in the terms of reference for the benchmark, because I'm thinking now that we're getting into situation where we're getting into very technical issues here, and quite frankly, I've seen one set of reference points came out under a certain scenario from the benchmark, which represented the best available information, and now we're looking at other things, and I'm having a difficult time sort of overriding a benchmark decision on these sorts of things.

I am not suggesting that the work that's been done has not been helpful, but, again, from my perspective, if the lesson is when you do the benchmark that you ought to be dealing with a whole range of reference points as a sensitivity analysis, maybe that should be subsumed in the benchmark terms of reference, because I actually don't think we're the best people at this point to decide upon these issues. These sort of seem to be the scientific issues that -- This is exactly the sort of thing that a benchmark should be doing. I know that's not very helpful, but I'm trying to get a lesson to come out of this that could be perhaps useful in the future. Thank you, Mr. Chairman.

DR. REICHERT: Thank you, but I do want to remind the committee, and, Luiz, you may want to comment, but one of the things that we discussed at our last meeting is that the overfishing status was highly uncertain, correct, and so I think that's part of why we are here, where we are now, and that's why the council asked us for clarification on that particular point, and I think that's part of why we are discussing this and why the council is asking us to look at certain alternatives, because of the uncertainty of that status determination. Luiz, you may want to elaborate on that a little bit. You led the discussion, or is this your understanding?

DR. BARBIERI: I mean this is what came out of our last meeting, and it's in our report, and it was based on our evaluation of the assessment results. I think the interpretation from the Regional Office or the management community of what we intended, I guess, by making that statement is that we felt that there was a probability that the species was undergoing overfishing, but we couldn't quantify, at that point, the extent or associate an actual number, given the large uncertainty in the data inputs and all of the other parameters. All of this is explicit in our last report, right?

DR. REICHERT: I don't disagree with that, but I just wanted to remind the committee of that particular part of the discussion we had relative to red snapper and the overfishing status, because the F 30 percent, we have said that we could not determine the extent of the overfishing, and so we have an alternative in either F 26, which is relatively close to F 30, or F 20. The question is going to be what can the SSC say about the extent of overfishing or the risk of overfishing that will be occurring under these alternatives? I think that's probably going to be a very important question that we as a committee will have to answer when I give my report to the council in December.

DR. SERCHUK: My feeling is that we can't say anything different than what we said, even at these other reference points. That's my feeling. Given the uncertainties that we talked about, and given that the differences between F 20 and Fmax and F 30 are only very small, 0.05, 0.06, 0.07, we're fooling ourselves.

That was what I got out of the May meeting, that all we could say is that we believe that F was higher than -- That overfishing was occurring, but we didn't know the extent above it, and I still think we -- Given what I know about the uncertainties, I still think these new analyses are so close,

in terms of what it means in terms of the F value, the F threshold, that I don't see how we could say anything different, Mr. Chairman. Thank you.

DR. REICHERT: The risk of choosing an alternative -- Obviously, theoretically, the risk is higher if you go to an F 20 than when you go to an F 30, and so there is that theoretical increase in risk. If you look at the analysis, there is not that much change in the risk by choosing either an F 27 or even an F 30, and correct me if I'm wrong, but Fmax or F 20. Is that our answer to the council? I am asking the committee.

DR. SHAROV: I think what we're discussing now is a reflection of our uncertainty, and I don't see any compelling argument of selecting either the option of F 30 versus the option of F 20 percent versus the FMSY, based on the steepness of 0.84. All it says, essentially, is if we assume there is no stock-recruitment relationship and that we'll just use either F 30 percent SPR as our reference point and then calculate whether we will be achieving our target of restoring the population or not. The alternative is that if there is a stock-recruitment relationship, and given the value of steepness that was estimated, we're coming up with the conclusion that, at this level of steepness, we are getting a very similar result.

The point is that we have no information that would allow us to make a clear, conscious choice of which option is the best or most appropriate for red snapper. Like you said, Mr. Chairman, obviously with the lowest fishing mortality, you are presumably reducing the risk, but we don't have a true estimate of how much lower risk it is, and so, if we are just simply looking at the gains, in terms of the actual fishing mortality, we will be using our calculations and we're getting into differences of one-hundredths of a point. I understand that, from the scientific point of view, we are pretty much -- We don't have a clear preferred option here. That is what I would conclude.

DR. REICHERT: Thank you. Ben, I saw you come to the table.

MR. HARTIG: Yes, and I think my question is you have a much less conservative SPR at 20 percent. Fmax is relatively the same, at 19.5. Why weren't there differences? What caused -- This seems, to me, to be a pretty drastic change, 10 percent in your SPR value, and why weren't there changes? That was my question. What is driving the no change between all these different numbers?

DR. REICHERT: Is there anyone that would like to comment on that?

DR. SIEGFRIED: The thing that's similar is the F that came out. If you look at the plot of the table, and there are many tables in that report, but there are differences in the allowed landings and discards based on those different Fs. Sometimes they're only 500 and sometimes it's 10,000, up to 30,000 or 40,000 pounds difference, and so there is a difference. My point is what F -- These are all F-based projections, and the F changes out to the thousandths place is difficult to manage. The council would have a very difficult time monitoring the difference between those, and I don't know if I heard you incorrectly initially, but the Fmax and F 20 are 0.5 percent different and not 10 percent different.

DR. REICHERT: So what is our recommendation to the council? Is it, based on the analysis, to recommend F 27? I know that makes a very tiny difference, but, based on the analysis, is that a justifiable proxy?

DR. BARBIERI: No, I don't think so. I tend to agree with Fred, in the sense that we are fooling ourselves if we find any additional real scientific basis to suggest a change from 30 to 27. I think that really what we are doing is advising the council about the fact that we are in the ballpark, according to this analysis, but that, most likely, we can't tell the difference between the two and changing that from 30 to 27, to me, would not be scientifically justifiable.

DR. REICHERT: Let me see if I understand. I will think about it a little bit. You say we are in the ballpark, and then -- Fred.

DR. SERCHUK: The question that I have, Mr. Chairman, is, in May, we accepted the recommendations coming out of the SSC meeting, and they're right in front of us, as the best scientific information available. I don't see a compelling argument, from the projections that have been done, to say that we now have better information to say that the information that we had in May, that came out of the benchmark, is now no longer the best scientific information available, and I am concerned about the process more than anything else. Thank you.

DR. SIEGFRIED: Just to address your point, Fred, we did all of the projections with F 30, all of the benchmarks with F 30, because that's what was in the rebuilding plan. We hadn't previously been asked to do anything besides F 30. There wasn't anything deviating from that in the TORs, and so this is the first time that we have done any kind of analysis looking at what the proxy should be, and so I would say this would be the opportunity for you to take this analysis that we did as a change from the last SSC meeting. This is the only time that we've done this or been asked to do it.

DR. REICHERT: Thank you, Katie, and that's the reason I brought this up as a recommendation, based on the analysis now.

DR. SERCHUK: Although I recognize that there is great wisdom and great expertise around this table, I actually do not think that asking the SSC to change reference points is really the proper way to go. That's what you're asking this SSC to do, and that's why I think, as a matter of terms of reference, and I don't have them in front of me, if there is not a term of reference in the benchmark that says to evaluate existing reference points and recommend any adjustments to those, that should be a part of a benchmark term of reference.

It shouldn't be just evaluate the existing reference points in a rebuilding plan. It should be to evaluate the adequacy of the existing reference points, and, if appropriate, suggest any changes to those reference points. That should be part of a benchmark. I just feel that we've had runs done here, but we really don't have the same sort of expertise that was brought into our process, and we set up our process to do exactly that. Thank you, Mr. Chairman.

DR. ERRIGO: When it comes to setting reference points, technically what happens is the council sets them in an amendment, what the reference point is. Typically, that's done based on the suggestion of the SSC or the assessment that happens, but the council sets the reference point, like what it actually is, which is why F 30 percent was calculated and used for projections, because that was set as the FMSY proxy in the rebuilding plan. Here, I think the SSC is being asked to evaluate each of these proxies to say if there is any concerns with any of them and should you -- Please, if someone can correct me if I'm wrong, that would be most helpful.

DR. REICHERT: I think you're right. The council has asked us relative to the risk of overfishing, and we've addressed that. That's what I said earlier, in terms of, theoretically, if you go from 30 to 20, then you know what the risk is. The level of risk, we still are uncertain about. That's basically the bottom line here.

DR. BOREMAN: Just to follow up on Fred's comments, I agree with Fred. I am really uncomfortable sitting around the room here changing reference points. You're right that the council sets the reference points based on the advice of the SSC. Well, the SSC develops that advice based on benchmarks and so on. That's where the advice starts. I think, here, the problem that I'm having with this bullet is the third sub-bullet. If we eliminate that -- We can provide comments and just leave it at that without taking the next step and updating and revising our fishing level recommendations, as appropriate. No, nothing is appropriate that we can, at this point, I think, for the SSC. We can provide the comment saying there is very little difference. It depends on how much risk you're willing to assume, and then you just end it there.

DR. REICHERT: Chip is trying to capture your comment.

DR. AHRENS: I don't think it's unreasonable to let the SSC know that, given the current understanding about possible steepness that the species would have, that the Fmax and the F 20 proxies would lay at the upper end of the distribution, which would suggest they may have a higher risk associated with them, but I think there is a lot of caveats that have been brought up about the suitability of the distribution that was used to describe steepness.

DR. SCHUELLER: I'm just looking at the notes that are up on the screen, and I am scratching my head a little bit. Obviously I think the group agrees there is no difference between F 20 and F max, but are we really saying there is no difference between F 30 and F 20?

DR. REICHERT: I believe that, if I remember correctly, that's between the F 27 and F 30 that we discussed, correct?

MR. COLLIER: That was Alexi's comment.

DR. SCHUELLER: I just want to make sure whatever -- That that's corrected. If it's F 27 or F 30, that's fine, or F 20 and Fmax, but not 20 and 30. Those are the wrong numbers, and that gives a very different statement about reference points.

DR. REICHERT: Thank you for that, and that's why it's good to go through these notes, so we capture the essence of the discussion.

DR. SHAROV: I just wanted to clarify. What I was talking about is that these are all proxies for the FMSY that is unknown, and, from that perspective, we don't know whether F 20 or F 30 or even F 27 percent are close to the true FMSY for red snapper. Even the F 27 percent that is based on a steepness of 0.84, that's a steepness estimated using the meta-analysis for a number of species. That is sort of the average temperature in the hospital. Whether red snapper in that hospital is below or above that, nobody knows.

DR. REICHERT: Thank you for that. All right.

DR. SERCHUK: At the risk of bringing up something we discussed in May --

DR. REICHERT: I think there's many things that we have discussed in May that we are bringing up.

DR. SERCHUK: As I'm looking at the assessment itself, the assessment output itself, for the ages twelve to fourteen, which I guess is the age groups that are used, the estimates that we had were above 0.5. We basically said, well, the assessment is uncertain, and so we shouldn't take those at carte blanche, but they're still far above any of these reference points we're talking about, and so we have two different problems here.

We have problems in differentiating out these possible reference points, but, under all circumstances, whether it be F 30 percent, F 27 percent, or Fmax, we would still use the same logic that we used in May, saying, well, the current F is above that, and, in fact, because we didn't believe the absolute estimates coming out, is what I understood at that time, we didn't say they're twice as high or three times as high. Let no one be under the assumption that we're talking about that we think it's, instead of being 0.25, that the current F is 0.26 or 0.27. We never said that.

We wanted to be correct in taking in the uncertainty, but I think there may be a mixed message coming out of here. The message may be that we don't know, in the current assessment, whether we're near our reference point or far away from our reference point, and we made this thing about it's above. We're trying to be helpful, but I still think we've lost something here, because, if we went exactly on the assessment output, we would say, wait a second, we're twice as far from where we should be. We don't believe we're that far, but we're still a way away from it, and I think that message is not getting across.

DR. REICHERT: Correct me if I'm wrong, but that goes to what we said earlier. In the previous SSC meeting, we said that the stock was undergoing overfishing, but we could not determine the extent of the overfishing, and so that's what I think you are getting at.

DR. SERCHUK: I think the interpretation of that may be in the eyes of the receiver of the message, saying, well, can you give us -- If I were on the other side, I would be saying, well, do you think we're near it or do you think we're far or do you have no information to give us? That's what I would come back with, if I were a council member. I would say, okay, fine, but, rather than searching around for a reference point, which may result in a higher or lower catches, because that's a consequence of fooling around with these reference points, particularly when you have a rebuilding plan.

My point is do you think we're -- How far, qualitatively, can you tell us? Is there anything? Are we near, far, in the middle, and so on and so forth, and that might be helpful in refining our message, and maybe we can't say anything like that, but we have an assessment here, and, for those people that were familiar with the process, it's not as if we're just -- We have uncertainty. We don't know whether we're slightly above or -- If you believe the assessment, it says we still have a way to go. That's my interpretation, but we can discuss it.

DR. REICHERT: The devil's advocate argument is also that the conclusion is that overfishing is occurring, but you can't say how much, and so how do you know that overfishing is occurring if

you can't say by how much you were overfishing? That's even broader, in terms of qualitative determination, and that is, I think -- Ben or Michelle, correct me if I'm wrong, but that is something that the council has been struggling with, and that's the question that I need to answer in December, because I think there was some difficulty in understanding how can you say that overfishing is -- Again, the devil's advocate.

How can you say that overfishing is occurring, but, at the same time, you don't know by how much it is occurring, and so I think we need to at least address that or come up with a recommendation that addresses that question, if we can. If we cannot answer that question, then our recommendation is that we perhaps cannot indicate whether or not overfishing is occurring. Ben, as the council liaison, is that kind of, in a nutshell, one of the questions that the council may be struggling with in December? If I have misinterpreted that, let me know.

MR. HARTIG: I mean, it informs where do we go and what do we need to do to end overfishing, if we don't know how much overfishing is occurring. That is the key thing, and it's why, as the council has gone down this path and we look at projections of the fishery maybe never opening again, based on discards over time, I mean we have to do something different. We can't continue to go down this road of what we're doing now and expect things to change.

DR. REICHERT: But there is two aspects of that. One aspect is the management aspect, what we are doing as a council, but then the other aspect is our recommendations to you as a council in terms of the overfishing status.

MR. HARTIG: I would just reiterate that if we don't know where we are in the overfishing, how do we know what to do to correct it, from a scientific standpoint? How much overfishing is occurring? What do we need to do to end that?

DR. REICHERT: Yes, and, if the SSC feels strongly about the recommendation that indeed overfishing is occurring, we probably should clarify whether it is the direct result of the assessment or otherwise clarify that recommendation.

DR. BARBIERI: I don't know if this is going to help address that question directly or not, but I think that the message from the SSC was the assessment had so many issues, because of the regulatory atmosphere and all the issues with red snapper in the South Atlantic, the mini-seasons, short seasons, you name it, and then that 90 percent or more of the removals are coming out of discards, which, of course, are unobserved and highly uncertain.

I think that what the committee was trying to say is like the outcome of the assessment was that overfishing is occurring, but, really, that's anchored on information that we know very little about. Because we believe that the discards are going to be high, we are saying, well, most likely there is a level of overfishing still happening, but whether the magnitude of discards, as estimated right now -- What is the accuracy and the precision of that estimate is almost impossible, if not impossible, for us to tell, because of the sampling and because of the fact that a whole lot is going on behind the scenes, out there, and involves discards.

It's us trying to grapple and I think wrap our brains around the issue of this very high magnitude of discards that we can't really properly quantify, but we believe to be large, and I don't know if that helped Ben understand what we were thinking, and, to some extent, it is confusing, I guess, to

say we believe that overfishing is occurring, but we don't know by how much, but it's really explicitly acknowledging that there is something out there and we want the council to be aware of that. There is a humungous amount of uncertainty with the amount of dead discards, and we don't want to pretend that we know more than we do, and so we wanted to be explicit about that and put this out there, and you interpret as a council from that management perspective accordingly.

DR. REICHERT: Thank you. One of the things I -- Then we can move on to the next point, but page 425 of the stock assessment report is the plot with F over F 30, F over the FMSY proxy. There is a high uncertainty, but the entire uncertainty is above the overfishing level, and so that's where that conclusion may come from in terms of, yes, we believe that overfishing is occurring. However, the variability is so large, plus there are some other issues that you mentioned with the stock assessment, that where that overfishing is occurring is -- That's the uncertainty. Are we comfortable with that, because that's consistent with our previous recommendation, and it still doesn't provide that quantitative measure, but at least it gives some qualitative measure and a range. I just want to provide that as an alternative, and so I would like some comments on that. That's page 425 on the Attachment 19.

DR. SERCHUK: I am going to address the issue in a slightly different fashion, Mr. Chairman, if I could. I am looking at the reviewers' report from the benchmark, and, as part of that --

DR. REICHERT: That is Attachment 19, that same document? It's the assessment report, correct?

DR. SERCHUK: That's the assessment report. Of course, the assessment report is broken down into different -- I am looking at that component called the review workshop report. One of the questions that was discussed was are other quantitative estimates of the status determination criteria for this stock reliable? If not, are there other indicators that may be used to inform managers about stock trends or conditions?

There is a whole section there, and they talk about there are different ways to express F and so on and so forth, and they weren't very happy with the way that it was done, but there is a table in that section where they are looking at different metrics for the Fs. They say all forms of --

DR. REICHERT: Sorry, but what is that page?

DR. SERCHUK: It's page 30 of the review report.

DR. REICHERT: It's page 501 of the PDF. I am mentioning this because people online may want to follow what we are talking about. It's PDF page 501 in Attachment 19. Sorry, Fred, but go ahead.

DR. SERCHUK: They looked at different metrics for expressing F, and they looked at a geometric mean from 2012 to 2014 of those different metrics. They used the F 30 percent, and then they concluded that, according to all of the alternative F metrics considered -- Again, they didn't go to F 27 percent and so on and so forth, but overfishing is occurring, but to varying degrees.

The degrees that they put down went from 1.8 to 2.8, and, so, in conclusion, despite the review panel's concurrence that the BAM configuration be used for the stock assessment, the panel includes caveats, but they basically give the indication that, yes, there is a serious overfishing

problem here. I think, when we made our determination in May for the statement that I know I was relying on, because I wasn't very familiar at the time, with the three SSC members that were part of the review panel, because they went through all of this stuff in the review, and the uncertainty with it is certainly not carried over into this section that I am quoting, because this is not -- There is a certain directionality here that is consistent across the board.

DR. REICHERT: Thank you for that. Then the next thing is that, even if slightly different proxies are chosen, based on the analysis we have seen, the essence of this table, according to the SSC's opinion, is not going to substantially change, and is that a correct statement? If you could capture that, then I think that will answer those action items, and that will help me greatly in December in answering the questions that I anticipate from the council.

Before we move to the next item, because that's important, that's an important item, I am going to ask if there is anything in this particular action item that we need to address right now that may help inform the council.

MR. STRELCHECK: Fred, I read that section as well. The one thing that still strikes me is uncertainty that is not captured in this is the retrospective analysis that's been conducted in the assessment that indicates that fishing mortality rates drop considerably if you remove that last terminal year data point in the assessment. I guess I just want to point that out, in terms of the overfishing determination, that there still is uncertainty that's not necessarily being captured by this analysis.

DR. SERCHUK: If I may, Mr. Chairman, I think that's captured in the next page, where the group said, in the very last sentence, that it is likely that had the red snapper assessment been done up to and including 2013 data that that evidence for overfishing would have been very much weaker than presented here. That, I think, gets at the essence of what you're talking about, but, quite frankly, they had another year's worth of data.

DR. REICHERT: Again, that comes to the fact that, yes, that was acknowledged, and we discussed that as an SSC, but it comes, again, back to the degree of which we do not know. I would like to leave this discussion point right now and move to Mike's presentation on discards.

DR. ERRIGO: It's the MRIP estimates, discards and landings.

DR. REICHERT: Thank you. Mike, before we do that, let's take a quick, ten-minute break. We've been discussing this for close to an hour-and-a-half, and so a ten-minute break, and let's reconvene at 3:45.

(Whereupon, a recess was taken.)

DR. REICHERT: Thanks for the somewhat extended break. I am going to ask Mike to go through his presentation.

DR. ERRIGO: I just wanted to say that John Foster is on the webinar to -- He was going to be able to answer questions. However, he does need to leave at four, and so he did say that if we had any questions come up or anything that we needed answers to, if we couldn't get them, that we

could email them out to him and he would try to get back to us as soon as he could, either tonight or tomorrow, so we can continue discussions, if we have anything like that.

I put together this attachment. It's Attachment 23a. It's a spreadsheet, and it just looks at red snapper and the intercepts and the average expansion factors and things like that by county, and the first tab is the landings in numbers of fish, and all the tabs are broken out the same way. The year is all here on the left, and it's 2013, 2014, and 2015 are shown.

Each of the four South Atlantic states is represented, and each of the coastal counties in those states. For each of those counties, we are looking at the number of trips. Under trips, it's the number of trips that was intercepted by MRIP in that year in that county, the number of fish that were intercepted, so the number of red snapper that were intercepted, the expanded number of red snapper that we got from those intercepted fish, and then what the average expansion factor is, because the expansion factors are done by wave, by mode, and areas, and so these are averaged across time. They're by county, but they're averaged across time, and this is broken out by mode. Charter is on the left, private is on the right, and then I have the total trips and fish intercepted and expanded fish.

This is to try to get at how many intercepts does it take to get how many fish, and so you will see, in 2013, there were very little intercepts, except in Florida. That was the only place that had any intercepts. In Florida, in the charter sector, there were two trips intercepted, one in Nassau County and one in St. Lucie County. There was one fish in Nassau County, expanded to 116 fish, and three fish in St. Lucie County, expanded to 757 fish, and these are the average expansion factors. The colors show -- They're relative on the page, and so the bluer colors are lower expansion factors, and the yellow colors are higher expansion factors.

The private sector tends to have higher expansion factors, and so you will see here a single trip in Volusia County with four intercepted fish expands to almost 14,000 fish, because the expansion factor is close to 3,500, and so you just take the expansion factor and multiply it by the intercepted fish and you get your expanded number of fish. In Duval County, eight trips were intercepted, and seven landed fish. Some of them just had discards. That expanded to 3,600 fish, with an expansion factor of 500.

DR. REICHERT: Mike, remind us, but 2013 was a year that we had a mini-season?

DR. ERRIGO: Yes. We had one in 2013 and 2014, but not in 2015. In 2014, there were intercepted trips with red snapper in North Carolina and South Carolina and Georgia and Florida, and so in all four states. Up in North Carolina, there were three charter trips. The expansion factor though was very small, thirty-seven, and so the three fish intercepted expanded to 116. In South Carolina, it was a single private trip, with four fish. That expanded to 500. Just look at some of the bigger ones. Florida tends to have the largest expansion factors. St. Johns County and Duval County had 1,300 and 1,700. There was 1,300 for Flagler and 1,000 for Volusia, and so thirteen fish expands to 17,000. Six fish expands to almost 11,000. Three fish expands to 4,000. The largest numbers of fish are coming out of Florida, because the expansion factors are based on effort. They have the largest effort, and they also have the largest expansion factors.

In 2015, there was no actual fishery. These trips that have what's called landed fish, I didn't look into it that closely, but B1 are considered landed fish, and B1 can be dead discards, and so they're

any fish that's not seen by the MRIP interviewer, but they're told that they were dead. Either they were used as bait or they were dead discards or something like that, and so that's where, in the charter sector, you get this 741 and this single fish goes to 370 in the private recreational.

I did the same thing for landings in pounds, just to see -- The expansion factors are exactly the same, but you just multiply it basically by the average weight of a fish and you get these expanded pounds, and so that's pretty much the same. Really, the take-home message here, for landings, is that there are very, very few intercepted trips, for the most part. Florida has got the most, but, other than that, there's very few intercepted trips and few intercepted fish, which are expanding into very large numbers.

The discards, there is more of those, but they are still fairly sparse. Here is 2013. There is ten trips total intercepted in North Carolina, but fairly small expansion factors. It's about 700 fish there discarded. South Carolina, there was a single private trip, and that expanded into over 1,000 fish discarded. I am not sure why the -- I guess that particular wave must have had a very large -- They must have gotten a large estimate of effort.

Here is Georgia at about 400 in the charter, but almost 5,000 discarded fish in the private sector. The private sector tends to have a lot higher expansion factors, and then there is Florida. It's the same story. There's lower expansion factors, but it's a decent amount of intercepts in the charter sector, and much higher expansion factors in the private sector, giving lots and lots of fish, and so four discarded fish intercepted equals almost 14,000 discarded fish in Volusia County. Certain counties also tend to have higher expansion factors.

In 2014, it's a similar story. We've got a pretty big one here in North Carolina in the private sector. It's 4,400 fish. South Carolina has got a bunch in the private sector, and Florida, again, has almost 50,000 fish in St. Johns County. There's almost 70,000 in Brevard, but there were a lot of trips intercepted that reported discarding red snapper.

DR. REICHERT: When you mention like a bunch in the -- Those are the expanded fish? Because a bunch of fish in South Carolina is twenty-three.

DR. ERRIGO: Yes, and this is twenty-three intercepted fish.

DR. REICHERT: I understand the expansion, but I just want to make sure that we understand that it's still only twenty-three fish which those data are based on, because that goes back to the crux of the conversation we have, and the same in Florida. Although the numbers are much higher, the 70,000 fish are based on 119 trips that involved 341 fish, which is a relatively high number if you compare that to other states.

DR. ERRIGO: Yes, but I think it's the last tab that really gets at --

DR. SEDBERRY: The difference in the expansion factors is whether or not a trip reported having discards or not having discards, and that's why they're different?

DR. ERRIGO: The expansion factors are done based on the effort survey, and the differences are -- These numbers weren't calculated using average expansion factors. The MRIP datasets have an expansion factor for each trip. What I did was I calculated what the average expansion factor was

for this county and this year by dividing the expanded fish that I calculated by the fish that were intercepted. That's why they're different for discards versus like landed fish. The overall expansion factors that were originally estimated by MRIP by like state, wave, county, those may be different than these. Florida private sector, again, dominates the discards in 2014 and also in 2015. In fact, in 2015, we had a very, very large number of discards, and it was Duval County. They intercepted 187 fish, which expanded into over 210,000 discards and 80,000 in Brevard, and so that's where they came from. This is, I think, a very telling set of tables. I will go down to this one here. This table --

DR. REICHERT: That's the second one down?

DR. ERRIGO: This is the third table down, the percent of the total estimated trips that were intercepted by the MRIP survey. This first set here, charter, private, and total, are the percent of trips that had red snapper on them or reported discards, and so they either had landings of red snapper or they reported discards of red snapper on them, the percent of the total estimated trips that were intercepted by the MRIP survey, and so you can see, on the charter side, you do a lot better than on the private recreational side.

On the private recreational side, it's consistently less than 1 percent. It's typically less than 0.5 percent of the total trips that are intercepted with red snapper on them. The charter sector does a lot better job. Typically, it's over 1 percent, but, on average, it's still around 1 to 2 percent, maybe, of the trips.

Snapper grouper is a little different story. The charter sector does a little bit worse. The private sector does a little bit better, but it's still significantly less than 1 percent, and the total is less than 1 percent of trips intercepted have snapper grouper on them. All South Atlantic species is the same. It's significantly less than 1 percent and less than half a percent of trips intercepted have any of the South Atlantic managed species on them.

That's the proportion of trips being intercepted that actually have any of the species of interest to us on them, and this here, on the left, is the ones that have red snapper on them. I just put this last table together. It's not in your copy, and sorry about that. This last one here is, and I should make that bigger, since you don't have it, but, from your conversations about what percent of the total trips are red snapper and what percent of the total trips are snapper grouper and what percent of the total trips have South Atlantic species on them.

For snapper grouper, the charter sector actually, a third, to almost half in some areas in some years, have snapper grouper species on them. In Florida, almost a third of the private trips have snapper grouper species on them, but, for red snapper, 2013, 2014, and 2015, it's very tiny, even including discards.

DR. REICHERT: Mike, you may have mentioned that, but remind me of the difference between snapper grouper species and SAFMC. Those are the council-managed or --

DR. ERRIGO: Snapper grouper species are only those species in the snapper grouper FMU complex. SAFMC species are all the fish species managed by the South Atlantic Council. That includes dolphin and wahoo and mackerels and cobia.

DR. REICHERT: Thanks.

DR. ERRIGO: That is this whole table. I wanted to walk everyone through it, so that --

DR. REICHERT: Thank you, Mike. I think it's very nice to see kind of an overview of those numbers. I think we were aware of the fact that some of those intercepts, some of those catches, represent very few trips and very few fish, and it's nice to see that in a table. Any comments or questions for Mike?

MR. BOWEN: I will bring this up at the council level too, and I appreciate the presentation, Mike. It's the first time I've seen it, when I looked in the briefing book, but one of many concerns I have about that table is the lack of geographical distribution of the intercepts. That's something that we have -- One of those graphs, you showed twelve for Chatham County in the State of Georgia, but none throughout the rest of the state, and so I would like to bring that up. There is not even close to being an even distribution of intercepts there, and it's something that really causes me some heartburn. Again, I want to bring it up here, and I'm sure we will see this again at the council level, and I will make those known there as well. Thank you.

DR. ERRIGO: I don't know what the distribution of effort is for the MRIP survey in each of the states and how they distribute their effort, but this is just the outcome, is how many intercepted trips in each of the counties.

DR. REICHERT: I think that may be a good point to bring up, and that data is probably somewhere available, is how does that compare with the actual intercept effort in those counties to what does that two trips represent relative to the -- Although the expansion factor probably gives a pretty good indication of -- That's an indication of effort and not necessarily of the intercepts, and so that would be interesting additional information.

Anyone have any comments or questions for Mike? Seeing none, obviously there is a lot of uncertainty associated with these low numbers and, in particular, the expansion factors, and so one of the action items is evaluate the MRIP estimates and determine if they are reliable and adequate for management. I will open the floor to anyone who wants to comment on that.

DR. BOREMAN: To see if they're reliable as expansion factors, wouldn't you want to be looking at the PSEs on these estimates? Just looking at numbers and saying it's 0.37 percent of whatever or 1.8 percent, but, when you're expanding, the associated PSE I think would be more telling, in terms of how well your expansion factors are working.

DR. ERRIGO: I can get the PSEs for the estimates. You can do it by year or by -- I can break it down however you want. In fact, I did do an exercise where I calculated PSEs, starting at the year level, and then breaking it down by state and county and all different levels. Of course, the more you break it down, the higher the PSEs go exponentially, and so the discard PSEs are actually fairly low, because there is a lot more trips intercepted that report discards of red snapper compared to the landings in these years, because there are so few intercepts because of the mini-seasons or the closure in 2015, but I will get that and put it up here for you guys.

DR. SCHUELLER: I just had a question, because I don't know the answer to this, but, for the quota monitoring for red snapper, were any of the information collected by the State of Florida included in that? Where does that play into this?

DR. ERRIGO: For monitoring the actual landings and discards and things against the quota, when we were trying to decide if there would be a season in the next year, they used the Florida data. Just for landings and not for discards, because MRIP was a better estimate of the discards, because it covered the entire year, whereas Florida increased sampling just during the mini-season, and so the Florida study was just used for landings. Discards all came from MRIP.

MS. LEE: This is just a simple question. What would be the alternative if we didn't use --

DR. REICHERT: I am not sure, and maybe we need to discuss that a little bit, because obviously it's very easy to say, yes, the variability is high. It is something that is very influential in assessments and in the management, but what do we have? I think that may come also to our potential recommendations, because this is very important, particularly for red snapper, but also for a number of other species, and so I think it's very important to think about what are some of the recommendations that we can bring forth to potentially address this, and there are some easy ones, much more sampling, but I think we should think about how we can improve this.

MR. COLLIER: When you're thinking about this, the alternative could be do you want to consider just the discards, just the landings? What is useful for quota monitoring? Right now, red snapper is the only species that we use dead discards in determining ABC and closing seasons, and so discussion on that would be very valuable. Should we do it for other species or should we not do it for red snapper? That's where we probably need to begin some of the discussion, because it is the one species in the South Atlantic and Gulf of Mexico that uses dead discards in the calculation of the ABC.

DR. BARBIERI: To Laura's question, yes, at this point, we don't have really any other options, but, if you look at what is going on in the Gulf, there are, because of the short season, a number of pilots that are being evaluated by different states, working in coordination with MRIP, specifically to address this issue of very short seasons and what changes in sampling -- Do we need a more specialized, more dedicated type of survey that can be conducted as sort of like an add-on module to the standard MRIP, to sort of supplement information?

Since we are the council's group of advisors, I think it would help them if we make some recommendations that similar pilots, similar studies and evaluations, be conducted on this side as well, to evaluate the situation for sampling the red snapper fishery, in particular, but there are some other fisheries that are in the same situation, deepwater groupers and others. John Foster came over and gave us a presentation on that.

At the very least, I think it would be helpful for us to throw our name there on the list of folks and say can we get some love over here as well, some support, programmatic support, for development funding, of course, as well as for development of additional pilots that can look at improved sampling methodologies that will address these limitations right now.

DR. REICHERT: For those of us unfamiliar, can you mention a couple of those pilots, in terms of the studies or what they're after?

DR. BARBIERI: Right now, Florida has the Gulf Reef Fish Survey taking place, and it's basically a stamp, so to speak. People have to register for a permit and then this is for nine species of reef fish in Florida between the Florida Keys and the Panhandle, the border with Alabama. Then there is a directed increase in the number of intercepts specifically on reef fishes, and so, right now, in all fairness to MRIP, because 90 percent of the saltwater fishing trips are really directed inshore or near shore, there is a big swamping effect when about 5 to 10 percent of the trips are offshore trips.

If you define that universe, if you stratify and you define that universe uniquely and direct a survey to that specifically, you get much, much better precision and accuracy, and so this is one of the ones that we are conducting right now in Florida and potentially, hopefully, applying for MRIP certification.

Mississippi and Alabama and Texas have different pilots, some using phone apps and some using a hail-in and hail-out, and I have some reports that I can send your way that provide more information on these pilots, but they specifically set up -- There have been some workshops of the five Gulf states with MRIP and the Gulf States Commission to develop the thought process for the development and evaluation of these pilots focused on red snapper and other reef fishes.

DR. REICHERT: Thank you.

DR. BELCHER: Luiz kind of talked about one component, but I'm still -- I kind of feel like I got left on a cliffhanger when Dave Van Voorhees came at the same time that John Foster did, because that was that whole discussion about the 30 percent PSE within other agencies and the fact that they don't publish that data if PSEs exceed 30 percent, because of the utility.

It was kind of one of those things that was thrown out, and I remember when you did, similar to what Mike just passed around with the PSE worksheet. At the regional level, more times than not, PSEs were over 30 percent, and so, from a management standpoint, what does that mean? If you were working in a health field, you wouldn't use that information, and so I kind of felt like we got set up and then we're waiting to hear, and the same thing with John working on those methodologies. It would be good to see how much are those methodologies actually helping to address the PSEs, because, if nothing is changing, we're kind of on that trust factor right now that everything is being done for better resolution, but, if it's not any better, what are we going to do, and that's what we're managing on.

DR. BOREMAN: As people are talking, I am adding more talking points here, too. First, in terms of how the intercepts are set up, the MRIP Program maintains a site registry for their interceptors, and they work with the state agencies to set up these site registries where you're more likely than not to find somebody fishing on these particular sites. Then they stratify their intercepts based on how active these sites are, and they also stratify over a twenty-four-hour period, as opposed to the past, where they only did it like during daylight. Now there is opportunities to go out there at night too and intercept people who fish only at night.

In terms of these numbers for red snapper, realize this is not a red snapper recreational fishing survey. It's a survey of all marine fish caught in the United States, and that's an important thing. The important thing to keep in mind is, in the Northeast, there are states like Maryland that wanted

better data, smaller PSEs, on striped bass, and so they supplement the survey and put in their own funds. I think North Carolina does the same thing. They add funding to the survey, to either focus on particular species or whatever, but to get the PSEs down to a more reasonable level.

Going back and asking MRIP for more funds, I don't think that's going to be very productive, because, right now, they're spreading that $10 or $12 million over all the coasts, all the fish, trying to get something to work in the national perspective on what's being caught. It's up to the individual states or councils or whatever if they need more specific information. The methodologies are fine, but it's just a question of sample size. Then they have to supplement the funding on their own, and so write your congressman.

The third thing about the 30 percent cap, I realize that Dave did bring up that idea of if the PSE is above 30, 40, or 50 percent that the MRIP Program shouldn't even publish the numbers, because the numbers are just too uncertain. The problem we're having with that, and I'm speaking on behalf of MRIP now, is the President's directive that all data be available to the public, and so even though we wish to withhold data that we feel is very uncomfortable, we have to work within that presidential order that has come down to say that this whole idea about transparency in the government, you've got to deal with that.

We understand it, and we are very dedicated to finding a way to do this, because we also agree that releasing numbers with 100 percent CVs and then seeing those numbers used in the management process is ridiculous. We shouldn't be using those numbers, period, but people -- That is why we are more comfortable with regional numbers versus state-by-state or water-body-by-water-body, because the PSEs, as Mike Errigo said, they grow the further you drill down into your resolution, and so keep that in mind too, that it's a good idea to put some limit on it. Now we're figuring like you what you put on your cigarette package warning, that using these numbers with a PSE higher than 30 percent is dangerous to the health of your ecosystem or something like that, and so that's three points that I wanted to bring up. Thank you.

DR. REICHERT: Thank, John.

MR. COLLIER: John, a question specific to that is if the council wants to go to state-by-state or sub-regional management, using these numbers, would you guys recommend a certain cutoff where they say there is not sufficient data to analyze the recreational information? That would be very beneficial to the council, so we don't go down the rabbit hole of trying to chase these large PSEs and provide estimates that the council sees and then it's not deemed usable for management, and so it would be good to, if there is a certain cutoff for PSE or any other recommendations, whether it's number of trips or something else that would be beneficial, I think the council and council staff would be grateful for those kind of numbers or that information.

DR. BOREMAN: We had a workshop a couple of years ago, and I think it was sponsored by Mike Cahall and the ACCSP group. They put on a workshop, and part of the focus of that workshop was exactly that question, looking at all these PSEs and saying what PSEs make sense for a cutoff. The workshop report should be on the ACCSP website, but, as I recall, it was on the order of 50 to 60 percent, in that area, where they said anything above that is just unusable or should be unusable, but I would have to go back and look at the report itself.

DR. AHRENS: I think it might also be worth mentioning that the utility of the catch information is also dependent upon the chosen method of assessment, and so, if you're using a catch-based assessment, where you're catch-dependent, you're assuming that catch is known with very little error as you're subtracting it out of that population or calculating F off of it, whereas, if you're doing an effort-based assessment and fitting to the catch, then you can account for those PSEs. If you move into a Bayesian framework, where you're actually estimating the catch and putting these numbers in as a prior, you're able to catch that uncertainty more.

Depending on what uncertainty you wish to capture more fully would depend upon the assessment method chosen and the detail of assessment. If you go back to a production model, single area, and you remove the catches, these values may be fine at that aggregation, and so I just wanted to mention that.

DR. REICHERT: Thank you. Chip, to that point, before I go to Carolyn.

MR. COLLIER: I'm thinking more along the lines of size limit and bag limit analysis as opposed to a stock assessment, because that's going to be the next part that we're going to be using this data for after the assessment.

DR. REICHERT: Correct me if I'm wrong, but following landings to see where we are relative to an ACL, for instance.

DR. BELCHER: Yes, and we were kind of going through an exercise when we were doing the red drum stock assessment with ASMFC. One of the things that surprised me was knowing that that's a predominant -- For the most part, it's a recreational fishery in the South Atlantic, and there was discussions about putting CVs at 5 and 10 percent, and I was like, how can you adjust your recreational CVs to anything other than what they've been calculated to? That uncertainty is there, and I think that's kind of some of that discrepancy.

If you have a very predominant commercial fishery, the assumption is they have 10 percent PSE or less. Obviously we have no way of measuring, but the idea is it's a census, and so we have the best there is, and then you go to a recreational side and now we're actually willing to say that you can have sloppier CVs on those estimated landings in a recreationally-dominated fishery, and so what message does that send to a commercial fisherman versus a recreational when you have that not 50/50 split between commercial and recreational?

One side, you've got more that you're willing to take that uncertainty on really what they're bringing in, but yet the impacts are felt across both sectors, and so, for me, that's kind of one of those hard impacts. It's like, oh, well, we'll go to 50 percent, but, yet, your commercial people aren't being allowed to have that same sloppiness in their performance.

DR. REICHERT: That's a good point, and hopefully, when we get better data, you can reduce that percentage. I think it's also a matter of the reality we are currently in.

DR. ERRIGO: I just wanted to quickly just describe what this spreadsheet is that I sent out to everyone. On each of the tabs is a different way of breaking down the data. The very first one is just information about what the spreadsheet is. This one is just the estimated discards of red snapper for 2013, 2014, and 2015. SE is standard error, and PSE is what everyone is interested in,

and then I also have the confidence intervals in here that I was able to estimate. Here are the PSEs. Here they are. This is for the entire South Atlantic for 2013, 2014, and 2015. There are several tabs in here that may be useful for management, like mode, if we break it down by mode. I just emailed this out.

DR. REICHERT: Just a reminder that Mike just emailed this out to the SSC.

DR. ERRIGO: Here are the PSEs broken down by mode and year. These are the charter, the PSEs in the charter estimates, and the PSEs on the private estimates by state and year, and so Florida has the lowest PSEs. Then here is Georgia, North Carolina, and South Carolina. Then here are the waves by year. They're very, very high PSEs, except for a few waves in a few years. After that, I don't think many of the other ones are very useful. It was an exercise of wave and mode and wave and state. I don't think we would be breaking them down quite that much. Here is the waves in Florida in 2013, 2014, and 2015, but I don't think we would be breaking them down quite that much. That's what that is. That's how you should translate or interpret it. The discards are, of course, in numbers.

DR. REICHERT: Thanks, Mike.

DR. BOREMAN: I found the report from ACCSP. The conclusion of the workshop, or at least this project that ACCSP ran, is they say, in general, model estimates are more reliable, or unbiased, for input data with PSEs up to 40 to 60 percent. Higher values, greater than 60 percent, of recreational data precision were tolerated for species with a shorter life history and smaller recreational fishery component. That answers the question of what the levels for at least this panel of experts.

DR. REICHERT: Thank you, John. In terms of our recommendations to the council, what is the pleasure of the group? We looked at that, and we agree that obviously the variability is high, but what is the alternative? It obviously would be good to have better data that would mean an effort concentrating on this particular fishery or in this particular region. Luiz provided some alternatives, and so, currently, in terms of adequacy for management, including quota monitoring and discard information, again, I think the question is what's the alternative?

I currently don't believe there is an alternative. On the other hand, those estimates do have significant implications for fisheries management, and so, as a committee, do we have any recommendations to the council as to how to approach this right now, other than working on better methodology?

MR. COLLIER: The other question is should the ABC be based on discards and landings or just landings?

DR. REICHERT: Does Magnuson-Stevens give some guidance in terms of what it should include?

MR. COLLIER: Every other species uses catch only to establish the ABC. Then, for red snapper, the ABC is catch and dead discards. That is how it's managed.

DR. REICHERT: Yes, and, as a reminder, the warsaw and speckled hind, the two other species under a moratorium, those are?

MR. COLLIER: Those are ABC is equal to zero. It doesn't deal with discards.

DR. REICHERT: Okay, and so that's landed fish. Thank you.

MR. GRIMES: The Revised National Standard 1 Guidelines specify that, where practicable, all sources of mortality, including that resulting from bycatch, scientific research, and all fishing activities should be accounted for in the evaluation of stock status with respect to reference points, and this has been tweaked. The "where practicable" was added. In the prior guideline, it was couched in terms of counting all mortality against optimum yield, and there are various ways of doing that. We have grappled with this in the Gulf of Mexico before. It doesn't have to be specifically included in your ABC calculation.

I think if your assessment process in some way estimates discards and that is taken out before you get it, then as long as it's in the grand equation somewhere, but, again, now you have the "where practicable" language and the should, which, in terms of National Standard 1, means it's a strongly recommended thing.

DR. REICHERT: Thank you.

DR. BELCHER: This is fuzzy recollection, but I kind of remember some of our history in the past. The stock assessments haven't had discards built into them. We didn't model it as a fleet or however that's been integrated, like red snapper had it integrated, but there was an after-the-fact analysis for discards. Wasn't that correct, John? I seem to remember Jack McGovern doing a lot of that discussion at the council level. We would go through and we would come up with whatever we were expanding out of the assessments, but then there was a second level to that, and so I think red snapper was one of the few that we actually did where the discards were part of the assessment, where earlier ones hadn't been that way.

MR. CARMICHAEL: Are you thinking of the PQBM, the post-quota bycatch mortality calculations that were done? That was quite a while ago?

DR. BELCHER: I remembered that coming up when we were talking about the zeroes. When we were first putting out those values, we were saying -- This was back when Luiz and I were first in the infancy of our term there, of what do we do with those situations where we're saying it's zero? Does that mean that the ABC is zero, because we're not accounting for discards at that point in time, and that was that secondary discussion we were trying to have, is to figure out where that came into play.

MR. CARMICHAEL: If you look at your recommendations tables when you look at an assessment, because the mortality from discard mortality is included in there, and normally you have your ABC, and you give it in pounds and numbers. You have your ABC and your OFL, and it can be broken out into the discard and the landings component, and so you give the whole package of stuff to the council to consider. Red snapper has been different in how the discards have been accounted for, because of the management, I think going back to what was done for the rebuilding before.

The thing about that though, which I think often gets lost in those ABC tables, is that, in OFL tables, that breakout of that total yield is predicated on the management that was in place at the terminal year of the assessment, or actually whatever group of years were used to establish the ratio of how the yield was diverted and how the F streams for discards versus F for landings.

That's really what you're reflecting. Anything the council may do or may have done after the terminal year is obviously going to affect that, and that's sort of not being carried through, and I think that's a huge point with red snapper. The projections are showing the predominant removals based on discards. That is predicated on the management that was in place then. The council is looking at doing a lot of things which are going to potentially vastly change that management, which would have a huge impact on that ratio and what the breakout is, which is hopefully something you guys can work on and help out with.

DR. REICHERT: Any comments relative to the points that were just raised? Then, back to Chip's question. Can we make a recommendation? Are we comfortable making a recommendation, in terms of how to approach that? Remind us of your question.

MR. COLLIER: Should the ABC be set in landings and dead discards or just landings?

DR. SHAROV: I think we've already got the explanation based on the revised guidelines, but, based on my experience with the Mid-Atlantic and New England areas, we always accounted for the losses due to discard mortality. In terms of population dynamics, there is nothing to discuss here. You kill the fish. No matter which way you kill the fish, you have to account for this. If you want to calculate ABC as a catch, as landings only, sure, that could be done, but then it should be calculated as specifically calculating for total losses that will result based on the fishery activity and then separating this into the losses due to landings and losses due to discard mortality. It's just the ABC will go down by whatever percentage point which the landings will constitute of the total losses, and so there is no way around it.

DR. REICHERT: Thank you, Alexi, and that was something I was going to say. That fish is a dead fish, and we need to account for that, but that does come back to -- It's landings plus discards is the current recommendation from the SSC.

MR. CARMICHAEL: Which is total yield. Then how that gets divided into those two categories is really based on what the management is.

DR. REICHERT: Yes, and that's something that we've discussed before. It's an effort issue, and I think you brought that up currently, because the vast majority of the fish are the dead discards, and that is currently -- That is why we are discussing the reliability of the discard mortality estimates that we currently have.

DR. SHAROV: I just forgot that I wanted to mention, related to this, that, in terms of the change in the ratio of landings to discards, of course, for example, the projections that we discussed today were based on certain assumptions of what the discards would be. If the management, with the advice of the science, could come up with any changes that would result in the significant reduction of discards, obviously then the fraction of the total ABC that would go to the landings could have been substantially increased. That is something to consider, if there are options there, if there are ways of changing that ratio of losses in favor of the actual landings as a result of the reduction in

discards. That certainly is something that obviously the recreational and commercial industries would enjoy.

DR. REICHERT: Then the question is do we have anything to indicate that we can actually address that at any point? Again, I feel there is currently -- Do we have any data that we can use to recommend adjustments, and I come back to one of the things that I think we said earlier, that we don't have any information to -- I don't think we have any information to address that, correct, to address the uncertainty in the discard mortalities.

DR. BARBIERI: No, we don't, and, to me, the most value here to the council on what we can provide is some advice of how to handle this into the future, that we would recommend that they try and address this into the future, to work with the agency to work with the partners and try and bring some resolution to this issue, because, right now, the amount of uncertainty is really, really large.

The way that we are accounting for it, we actually are not properly accounting for it. Within the assessment, it was impossible, really, to find a model that would converge at a level of uncertainty and dead discards that is estimated, and so that uncertainty had to be substantially decreased just to be able to get a model solution that was achieved, and so it is an issue right now.

We can either accept that this is going to be the way forever or we say, listen, the council needs to make this a priority and work with the Science Center and the agency and any other partners in trying to bring some improvements, some add-ons or whatever modules can be added, to the recreational surveys to try and reduce the uncertainty in both quota monitoring and the discards for red snapper.

MR. CARMICHAEL: Or completely alternative approaches like are addressed in the amendment for getting the estimates that are necessary for this specialized fishery. If you look at the amendment, it's not just a matter of enhancements and improvements to the MRIP survey, but actually looking at entirely different approaches, which may be far more appropriate for this, which, in the context of overall MRIP effort, is a relatively rare occurrence, as we have already talked about.

It's just the small number of trips that actually go far offshore. That's what you're battling against, and that's why the council is looking at a lot of alternative ways, and it's definitely a priority for the council to find a way to get better estimates for all the snapper grouper species across the board, because we do suffer from that uncertainty. We talk about the uncertainty in just about every assessment that we deal with, and the catch uncertainty is huge. When it becomes more and more discards, then it just goes up even more.

DR. REICHERT: Let's wrap this up in the next couple of minutes, and then we can go to Chip's presentation on the Amendment 43 ACT Alternative.

DR. SERCHUK: Just a question, Mr. Chair. The dead fish that are discarded, is there a reason that they're dead when they're discarded? Are they brought up and they're not handled properly or you can't return them back? Are there any things they can do to increase their survivability or is there anything that can be done on either handling practices or areas that basically says, wait a second, you can still continue fishing, but if you handle a fish this way -- We have this thing with

deep-sea fish when they bring them up, and they talk about using barometric-type of things to avoid deaths to eversion of swim bladders and so on and so forth. I don't know why they're dead discards.

DR. REICHERT: I think that's an excellent point, and we discussed that, and, actually, there is a lot of effort going on in descending devices to reduce the discard mortality, and I think, currently, that's probably one of the tools that should be used in terms of bringing down discard mortality, and so I think there's a number of studies going on to look at the effect that that has on the discard mortality, and so also in shallow areas, obviously, as we see in other species, the mortality is lower than when you go into deeper areas, where you generally find the bigger fish, according to some of the information. You're right, and I think there's efforts going on to address that.

DR. ERRIGO: Actually, in this recent assessment for red snapper, the discard mortality estimates were updated based on use of descending devices and more recent studies that were done and things like that. The reason a lot of them are being brought onboard dead is, depending on where they're fishing, it's usually a depth issue.

DR. REICHERT: The barotrauma issue.

DR. SHAROV: Hopefully you will forgive me for naïve comments, because I am still rather new to the process, but these are obvious directions where significant improvements could be made. One is on the release mortality. As you mentioned, a number of studies presumably are going on right now, and they certainly should focus on different types of gears and depth and whatever other factors, as well as the verification of the reported rates or absolute numbers of fish being released or discarded, because they currently are based on self-reported numbers or recollections. I am not saying that necessarily anglers are purposely biasing the numbers, but a relatively inexpensive study that would independent verify the rates of the discards certainly, particularly that these things are changing as a result of the management regulations.

If you increase the minimum size, you introduce seasons, et cetera, and your discard rates are changing dramatically, and so it probably has to be done on a regular basis, and the difference in 30 or 50 or 80 percent will way overwhelm or have a much more significant effect in our estimates compared to everything that we discussed today. F 20 percent versus F 30 percent versus FMSY, with these changes, that is a very important factor.

DR. BELCHER: This is kind of an older discussion thread from a little bit ago, but, as we were talking about -- John was indicating about MRIP and MRIP's focus to try to enhance our ability to get at red snapper. If you think about it falling back to the state level, I just want to caution that not every state has that same level of -- If we had to look at our MRIP beef-up and where would we put our effort, I don't necessarily know that Georgia's effort would be put as high towards red snapper. No offense, Zack, but, in terms of if we were looking at --

MR. BOWEN: I'm used to it.

DR. BELCHER: I just know, because he had talked with us years ago about this species, but, in the sense of us as a state agency and look at those species that carry, black sea bass would probably jump higher on the list for an offshore snapper grouper species than red snapper would, but yet Florida, when you look at Florida's numbers, obviously there is a higher pressure there, and so

their ability to augment and put effort towards that, and so I'm just thinking, from the standpoint of if you're going to argue for where it needs to be, I think to the highest over-serving level is probably the best. For the council to get money focused on enhancing through the whole region is probably the better approach than trying to say that the states themselves should find that augmentation, because not every state would look at it the same way.

DR. REICHERT: Thank you.

MR. COLLIER: I wouldn't call this a presentation, but Attachment 23 is what we'll be looking at, and it's going to be Option 4. I put this in the front. We have already addressed some of the issues that we talked about. Action 1, you guys talked about MSY earlier and the proxy, and so that's going to be changing, and we addressed those issues. Going down, next, you talked about the ABC and ACL. We just got done with that. Now, going into Action 4, it's going to be pretty simple. It is page 8.

DR. REICHERT: It's page 8 in Attachment 23.

MR. COLLIER: We have five different alternatives here. Alternatives 1 through 5 are typical ways that ACT has been calculated in the past for some South Atlantic recreational species. If you look at Alternative 6, what we looked at was developing an ACT based on overages of the ACL in the past years, and red snapper, of course, it has to be a little different than everything else, because there were closed seasons, and so these values are going to be based on 2012 to 2014, and look at the average landings from those years.

What we did was we had the recreational ACL times one minus the average over a set number of years, and the reason we did a percentage for that is because the ACL was changing over the time period, and we didn't want that overall pound change in there, because that could be a significant difference. We wanted the percentage, and we're just checking with you guys to see if that would be an appropriate way to do it or if you guys have any other recommendations for the calculation of an ACT. That's similar to what Carolyn was mentioning earlier in some of the discussion, where should reduce from the ABC to the ACL, or from the OFL, at least.

DR. BARBIERI: I was just thinking, and I don't know if Andy is still around, but the ACT they used for the recreational red snapper management in the Gulf, I think that number was developed based on the proportion, the percentage, of overages over whatever many years. In that case, I think over there it's 25 percent of the total --

MR. COLLIER: Here, it's around 40 percent.

DR. BARBIERI: I am bringing this up and saying if we are going in that same direction, I think it's consistent with the way that it's been estimated over there, and it is also a logical, sensible way to set up the buffer there from ACL to ACT that you know there is a higher probability of capturing those overages.

DR. REICHERT: Anyone else to that point?

DR. BOREMAN: It's just the language. I understand what is going on here, but you say if landings did not exceed the ACL that the difference is set to zero. The difference of what? Wouldn't it be cleaner to say if landings did not exceed the ACL that the ACT equals the ACL?

MR. COLLIER: When I was doing the calculation, I wanted to make sure that it didn't go negative, and so I think your wording is much better.

DR. AHRENS: I guess one question that I have about that method is so if we set recreational equal to the ACL in years when it hasn't been exceeded, are we still accounting for uncertainty in our ability to estimate those catches sufficiently, or we just taking the 50/50 chance that we're getting those catches right into consideration, or is it something where you're still setting it at 65 percent of the recreational, even if you went over, and you're still accounting for the fact that you're not estimating those catches precisely?

MR. COLLIER: Just to let you know, there's about an 8 percent difference between those values, and so it's not great, but --

DR. REICHERT: Anyone else looking at these numbers -- Pros and cons is our first sub-bullet, and we have discussed some of them. What are the benefits to using the proposed methodology over the council's current ACT rule?

DR. ERRIGO: Alternative 2 is the council's current ACT rule. That is what is typically used for the ACT in other species, when there is an ACT present for the recreational sector.

DR. REICHERT: John, you were saying --

MR. CARMICHAEL: I was just trying to clarify that the no action should be what's in place now. There may be a norm that's used in other plans, but, if that's an alternative, as opposed to no action, then that means that's not actually in place for this stock, and so having an ACT rule or having an ACT is considered a plus?

DR. REICHERT: I would argue, in general, that it's a plus, because it gives you a buffer that, once you reach it, that the council can take action. I would consider that a general advantage of having an ACT over --

DR. BELCHER: Isn't one problem with that with the recreational? You've got a lag in how you get your information, because your wave information is not available for a lag time. I am just thinking if you have a threshold that you're waiting to trigger that you've got to wait until you finalize those numbers to know if you've hit that trigger, but, meanwhile, fishing is still occurring, until those numbers are available.

DR. REICHERT: Yes, but this creates that additional buffer, and so you have that additional management uncertainty.

DR. BELCHER: But what I'm getting at is if you don't know what the -- If you're looking to do a real-time analysis on the catch, but if those numbers -- If fishing is still going on until those numbers are available, and so like Wave 3 doesn't become available until midway through Wave

4. You've still got half of a wave of fishing going on that you might find that you have already exceeded your threshold three weeks prior to when you got your numbers.

DR. REICHERT: Yes, but you have that same problem whether you use an ACT or an ACL. You still have that uncertainty. With an ACT, you at least have a little bit of an extra buffer to address that, unless I am misunderstanding your point.

MR. COLLIER: The ACT would be used in two different ways. It would be used in the calculation of a bag limit, size limit, or season, and so that would be pre-season that it would be used for that calculation, and you're trying to use the ACT to prevent overages of the ACL at that point, and then it could be used as well as in-season monitoring. For the in-season monitoring, they will have to use -- SERO would have to use some past history of catch in order to calculate during waves that are currently going on.

DR. REICHERT: All in all, I would say that calculating an ACT will help with management, and I think the method or the alternative is, by and large, a management decision, unless the council wants specific questions from us, but I believe the method itself -- We as an SSC believe that that's a good thing, and then the rest is the risk tolerance in terms of the management uncertainty in terms of the monitoring and the other issues that you just mentioned, Chip.

DR. BARBIERI: Chip, I would imagine that these options, this entire amendment, was prepared by an IPT, right, and so it integrates already the Science Center and the Regional Office.

MR. COLLIER: That's correct.

DR. ERRIGO: I had a question. Is the idea to have the ACT be a rolling calculation, and so each year it's recalculated, or is to just pick 2012 to 2014 and that's it? The reason why I ask is because let's say you pick a set of years that don't have any overages, and so you don't have an ACT. Then, as you go along, you do have overages, or you pick a set of years that has a 10 percent overage, but, in the future, when you change your management regulations, you have an average of a 20 percent overage. I can see the selection of years and having that be static be a bit of a problem, especially if you're going to significantly change your management regulations. However, if it's a rolling percentage average over the three years, that would account for changes in the fishery and the management and this and that. I was just curious how this was envisioned.

MR. COLLIER: It's envisioned that -- Well, it hasn't really been discussed at the council level. Right now, it's set at 2012 to 2014, because those are the years when we are allowed to have landings. In future years, if landings were allowed and we had a better way to monitor the recreational catch, then, yes, obviously you would want to adjust that ACT to account for your improvement in monitoring. Hopefully it's an improvement. Hopefully it's unidirectional. That could definitely be addressed as the amendment is developed, and it could be made clear as an option.

DR. SERCHUK: I tend to agree with your comments. I am not really quite sure why we're even involved in this. It seems to me that the whole idea of the ACL was to account for the difference between an ABC and any uncertainties that would happen due to management uncertainty, and part of that management uncertainty is monitoring and the other aspects. One could also approach it the other way and say, do we need an ACT or just do we need a lower ACL?

You could back off from that, and so I'm a little bit concerned about the whole idea of an ACL. That's a management decision, looking at how much you have to account for the management process, in terms of the uncertainties involved. Now there's another component being put in, ACT. If it helps, fine, but I don't see a role for us here on it, quite frankly.

MR. COLLIER: I see you guys as the perfect body to -- If we have two competing methods to calculate an ACT, and, in our mind, they're essentially the same, scientifically, is there one that is superior to the other? You guys are the experts in these kinds of things, whereas as the council is more equipped for management, and so, yes, they are trying to develop some of the risk tolerance, but these are calculations based on some of the values, such as PSE and landings. Is this an adequate way to do it? To me, there is some information that the SSC could provide that could definitely benefit the council.

DR. SERCHUK: If we hadn't been asked the same question for the ABC, in other words for the ACL -- We have a couple of options. We have 95 percent of the ABC or 90 percent of the ABC, or you could ask us for 50 percent of the ABC, and so I don't see the difference, quite frankly. One is given that those are the options you might follow, and then you're asking for a target below that. What am I missing? I must be missing something.

DR. REICHERT: I don't necessarily -- John, I will get to you, but I don't think that necessarily you are missing something. I think the issue is the council has asked us for this specific point, in terms of our input relative to the alternatives, and so, correct me if I'm wrong, but that's the question the council put to us. I would say, irrespective of the method, the larger your buffer -- That's the same with the ABC or the ACL. It's the more opportunity you have to take action in the case you see something going in the wrong direction, but that's a much more general comment. John, and then let's see if we can wrap the discussion up here.

DR. BOREMAN: I just see -- To me, the major difference between Alternative 2 and Alternative 6 is Alternative 2 takes into account the uncertainty in the estimates coming out of the recreational survey, catch survey, because you're using PSEs. Alternative 6 assumes you know what the landings are and you don't have to worry about the uncertainty. To me, that's a major difference between the two and something the council should think about. Are they willing to keep the uncertainty in those estimates or just assume that the landings here in this formula are what they are without the uncertainty associated with them?

DR. REICHERT: Thank you, John. Thank you for that. Before we wrap this up, we want to look at the notes we have, and we have another round of public comment. Amy made a good point relative to that it may not be entirely clear what our recommendations are to the council relative to our stock status and the ABC, and so it's my understanding that, based on the discussions, that there are no compelling reasons to deviate from the F 30 SPR and that, and correct me if I'm wrong, but that means that we don't change the reference points, so that the recommendations that we made earlier stand. Is that a correct interpretation of our discussions, Amy and Luiz? Amy, was that basically the question you had earlier?

DR. SCHUELLER: Yes, and, after we took a break, I chatted with you and said I have no idea what we recommended, based on our discussion. If that's our recommendation, that's fine. The other thing we talked about quickly too was that, if the recommendation was to change something,

then we're out of that rebuilding plan, and so we're not confined by the rebuilding plan. Therefore, we would have to, I think, apply the ABC control rule. If that's the recommendation, that we're not deviating from what we've said in the past, then --

DR. BARBIERI: I just want to say that I don't think we ever recommended an SPR proxy for red snapper. The council, a few years back, when the council was setting up the rebuilding plan, and I think there was some regulatory amendment that has that explicit there, but my recollection at the time of what came out of SEDAR 24 was actually 40 percent, and the council chose to go with 30.

This is just semantics, in a way, but this is not a recommendation that came out of the SSC. They asked us to basically look at the SPR proxy that's being used now and the question was would we suggest something different or would we comment on those analyses that were presented, to compare two new proxies to the existing one, and I think we basically, after a lot of discussion, decided to not deviate from the existing one. I am being a little picky here on the semantics.

DR. REICHERT: No, and I appreciate that, and I don't think you are. I just want to make sure that we all understand our consensus recommendation to the council. Anyone else? Ben, I am going to ask you that same question I asked earlier, in terms of are there any issues that the council may have questions about at the December council meeting that we have not addressed?

MR. HARTIG: (The comment is not audible on the recording.)

DR. REICHERT: Okay. The meeting is not over just yet, and so that also means that we have another opportunity to -- This is the end of this agenda item, and we have an opportunity for the public to provide comments, and so I am inviting anyone from the public who wants to come to the table and provide comments. Kenny.

MR. FEX: I would like to thank you guys. I've been impressed with your cooperation and interaction. I am just a fisherman. I went to school for business, and so I don't consider myself a scientist. Fred spoke of a rumble strip. Well, I think I'm rumbling right now, because I was involved with both red snapper stock assessments, and being involved, from my perspective, is we get there and we put in our input and then we get an outcome, and we don't know the outcome, and all of a sudden I see it.

The last three stocks assessments, we have actually went down. It started at 2.4 million, and now we're at 607,000. With the regulations we've had the last five years, we've really been restricted on our catches, and so I really can't see how the stock has went down. I spoke with Luiz last week, and so he kind of gave me an idea of what's going on, but my concern is the general public. The general public looks at this process as like, wow, they've kept us restricted and now we're still not able to catch fish. We're looking at closing areas just to keep going, to keep fishing, and that's sad.

I have a few concerns with the stock assessment that just came out, and, like I said, I am throwing stones at the end, but one was the filtering of TIP samples. I know there might be too many TIP samples and you've got to filter them and whatever, but North Carolina, we had the fish and we got filtered out. South Carolina was the same thing, but also too, on the MRIP, in 1985, the landings in MRIP was three times any other year. The rod and reel was not in it that year, and so

that would be an outlier that should have been taken out. Maybe it has no adjustment to the model and maybe it doesn't affect it, and I don't know, but that was just another concern that I see.

Another thing about MRIP is, when you survey a person at the dock in the closed season and you say, well, did you catch any red snapper, somebody might come up and say, yes, I had to throw a hundred of them back, and that's anecdotal, but yet you take it and you extrapolate it and now it's multiplied, and so that's a problem that maybe the general public doesn't see, but it makes an outcome change. That was just a few remarks I had to make, because it's the public that looks at this process, at the management. You guys don't see this. At the council, that really drives the council. It's like, what are you guys -- You're not seeing what we're seeing, and so that's my point to you guys.

You are dealt the data you are, but, from the general public's perspective, we're not really grasping what's really out there, and so I would just make that comment. I don't personally care about red snapper, but there are people in Florida and people in Georgia and people in South Carolina that are having to avoid them, and so it's just a problem, and I just feel sad that it's happened that way, and I so appreciate your effort and your time and everything, but that's a concern, from my perspective, because I'm the one that deals with the input, and the council deals with it, and so thank you.

DR. REICHERT: Thank you, Kenny. Any other member of the public that wants to come to the table and provide comments or input? No? Thank you.

DR. SERCHUK: Of course, we will do anything that you think is appropriate, Mr. Chairman, but I just wonder whether we could take another item. I know we have a schedule laid out, but it just seems to me that if we can't take the item for the ABC Control Rule, is it possible that we can take some other item that's on the agenda and finish that up? I am still thinking that there is still some energy left in this committee today, and, if that's the case and if it's not breaking the rules and we can fit something in, I would like to continue.

8. DISCUSSION OF NATIONAL SSC AGENDA

DR. REICHERT: That's a good point. Perhaps we can -- Mike was just looking at the agenda. There may be some relatively short agenda items that we can address today. I think we can be really brief about the National SSC Meeting. That is a meeting that is currently scheduled for late 2017 and 2018 and the Chairs, including John and Luiz and myself, have been asked to provide some input in terms of topics that are going to be discussed.

I think there is an ongoing discussion, and I think, John, correct me if I'm wrong, but there has been some selections made at this point or not? Not yet? I provided -- I talked with George and with a couple of other people and provided some input, and so the topics are in the overview. I would like you to take a look at that and see if there is any particular topic that we as a South Atlantic SSC feel very strongly about. Then I can convey that information to the organizing committee. As I said, this is something that is scheduled for much later, but the organizing committee is starting to finalize some of these topics. John, do you have any additional comments or Luiz?

DR. BOREMAN: Basically, here we go again. The outcome of the last National SSC, when we talked about future topics, I thought that it was a pretty strong agreement among all the participants that we would look at MSEs. That came out loud and clear. Then they put up the Christmas tree, and everybody is trying to hang their ornament on it again, and so we're going around. We started with one topic at the end of the last, and now we're up to half a dozen or so.

In the Mid-Atlantic SSC, we wanted to focus on uncertainty in the OFL, which is up there. It's basically uncertainty in the estimates of biomass and fishing mortality as they relate to OFL, because that's what is driving our SSC right now, but understand that other SSCs are not interested in that, and so that's on the list, but what happens is we get the shopping list, and the list goes to the CCC, the Council Coordinating Committee, and they're the ones that choose the final topics, because basically the national workshop is their workshop.

What we found last time is, with all these topics, we don't spend enough time on any single one of them if we have more than one or two topics for the workshop, and last time it was kind of silly, because we spent most of the time in our little group, our own little SSC, talking among ourselves and then coming out and reporting out to the major meeting, but there was no time to look at what everybody is saying and come up with a general consensus statement. It's getting more frustrating, because, as I said, here we go again. I don't know if you agree or not.

DR. REICHERT: I have to say that I completely agree with you. For me, the meeting was very informative, but I agree with you completely. Scott, I believe you were there, and, Luiz, you were there, and I also thought that when we left that previous meeting that we at least had one or maybe two topics that we pretty much had consensus on in terms of the topics that would be addressed in the next SSC meeting, and I agree with you that we are starting from scratch here.

DR. CROSSON: Obviously I agree with that. That was very frustrating to watch. When you have eight different delegations there and everybody goes through and explains what their group is doing, you end up eating hours up that could have been used on a more productive focus, but, yes, the MSE, that was what everybody walked out of that meeting saying, that we were going to talk about MSE.

The agency is hiring an MSE specialist at the different Science Centers, and so I am kind of surprised to see this list. After MSE, which would be highest on my list, is a discussion of OY seems to me to be the most important thing, at least for the South Atlantic, just because we've had so many battles over allocation and some of these other things, but that's an economist speaking, but I do look at OY, and I think that's something that is coming down the pike, and it's going to be hitting the Southeast more heavily than some of the other areas out west, where they may have other concerns.

DR. REICHERT: Thank you, Scott. Have you guys at the Gulf SSC discussed potential topics?

DR. BARBIERI: Not much. I don't really have anything to add to what John and Scott brought up. To tell the truth, I am really frustrated with the process. I have not been even following those emails anymore. I don't respond to them. I am being honest, because it's such a free-for-all. John mentioned that everybody wants to hang an ornament on the Christmas tree, and it's like a chaotic system. Everything that I thought came out of that last one resolved hasn't, and so I gave up.

DR. REICHERT: I do believe there were previous National SSC Meetings that yielded probably more tangible results than this one. I agree with that, and so this is an opportunity for us to provide feedback, if anyone has any other topics that they feel should be high on the list.

DR. BELCHER: I just wanted to ask the question, only because everybody that is at a state level has probably pulled their hair out over this, but what's the backing behind the protected species as a bullet point? I know, for us, it's been the fact that now, all of a sudden, all of our surveys are -- We're getting hit with all of this paralyzing analysis of what you've done and how you -- I was just curious which region had put it forward as a discussion point and to what level it's out there.

DR. REICHERT: I forgot, but, John, do you remember what region it came out of?

DR. BOREMAN: Pacific, somewhere along the left coast, but I also recall that Rick Methot made a comment too on this list, and I came up with rankings. They don't have them here, and I am getting traction among others that what I came up with is I boiled it down to about three or four topics, and I specifically said that protected species is way out of the range of what we should be talking about. That's not even related to the Magnuson Act, other than it's one of those acts that you've got to conform with. Rick is kind of the director at Headquarters on this, and he agreed with that, but there is a shorter list out there, but it's not up here.

DR. REICHERT: The shorter list I think came about because some felt that some of the topics here could actually be combined as one topic, and that's, I think, how they shortened the list a little bit, and so I want to ask the committee -- MSEs and the definition of optimum yield, and within those are probably a couple of other topics that are listed that can be folded into that, and I agree with that fully, especially since the MSE was something that was recommended at a previous meeting. Unless anyone else has a burning desire to add a topic to that top two or top three list, let me know now, and I can convey that to the organizing committee. Otherwise, I will let them know that our SSC chooses those two topics as most preferable to address at that meeting, modifying MSEs and optimum yield.

DR. CROSSON: I actually had to go back and look at the agenda for the meeting that we had a year-and-a-half ago, and discussion of ABC control rules was one of the things that we went over at the last National SSC Meeting, and so I'm kind of surprised to see that pop up again. At least it's on the old agenda, and I think I'm looking at the right one. It was evaluating existing ABC control rules. That was on the agenda for the National SSC Meeting in February of 2015.

DR. REICHERT: Yes, but I don't remember that we discussed it extensively, but my memory may fail me. John or Luiz, do you remember that we extensively discussed ABC control rules at that meeting? I think it was on the -- I remember talking about it at one of the previous national meetings, which I felt was a rather productive meeting. I think that may even have been the one here in Charleston, but I forgot. That was a while back, but maybe it wasn't the one in Charleston. We will leave that. If you feel very strongly, let me know, and I am more than happy to bring this up again. As I said, this is not going to happen until late next year or early the year following, and so --

DR. BOREMAN: Marcel, I am looking at the rankings, and we're getting some traction that the rankings came out dealing explicitly with model uncertainty, estimating uncertainty in the OFL,

management strategy evaluations, and then elevated is the OY, and so those four topics are rising to the top of this list.

9. DISCUSSION OF SSC PUBLIC COMMENT POLICY

DR. REICHERT: Thank you, and so what we are recommending is actually consistent with what others are bringing up, and not surprisingly, I would say. This was an agenda item for tomorrow. This is today, and so we have an opportunity for public comment. I am looking around the room, and I'm not sure if anyone has any, and I don't believe so. One of the other topics, and I think we can address that relatively quickly, is actually the Public Comment Policy.

We introduced that a little bit yesterday, and we have seen that happening today. I want to open the floor for discussion or concerns relative to the request the council made to the SSC to allow for more public comment, and there were two options presented, and correct me if I'm wrong, John or Ben. One was to allow at the beginning and the end of each day, and the other one was to allow public comment at the end of each agenda item. I am just asking the committee if, given the experience, although it was only today and yesterday, whether we feel that this has worked or whether the committee felt that it was beneficial, and I know it's only one meeting, and if we can provide the council with some idea of what we feel about this request.

DR. BOREMAN: I believe that yesterday I offered another option, and that is public comment at the beginning of each topic, rather than the end, so it helps set the stage for the discussion to follow.

DR. REICHERT: Yes, and I think we briefly discussed that. The caveat there is that, at the beginning, people generally do not know where the discussion has led to, and so there is pros and cons of that, and I will make a note.

DR. BOREMAN: You can also add one at the end, too.

DR. REICHERT: Yes, we could.

MR. CARMICHAEL: I liked that suggestion when John made it and, when we were thinking of where to put this in the thing, we ended up at the end, because that was just kind of the simplest way to get it in there, but I think, ideally, somewhere between coming after the presentation of information is helpful, because, if you had a formal presentation and you've gone through that, then they're informed by that, and maybe after some SSC discussion, but before you get to your final conclusions, and I think a way to work it in there somewhere, and you've kind of done that today, to some extent.

I totally agree that coming after the fact is a bit of an issue. If we could find a way to sort of fit it in there kind of between the presentation maybe or after you've had some initial discussion, before you sort of go into your wrap-up and look back at all your action items, maybe that's the place to get it.

DR. REICHERT: Okay, and let's think about it a little bit. Then we can make a recommendation. In the next agenda, we will put it in the agenda where we feel it may be appropriate and see how that works. The other thing I wanted to mention is that we all know -- I think, as an SSC, as the

South Atlantic SSC, I really believe that we provide opportunities for people to come to the table. We invite people to come to the table if people have a desire. I think we very rarely do not allow people to provide a comment relative to the discussion, and so I think, in an informal way, we have always, I believe, by and large, allowed people to bring relevant information to the table, and so I just wanted to mention that.

DR. BOREMAN: Why don't we ask the public right now what they think about the best place and how they think they can be most effective in our process?

DR. REICHERT: Certainly. I think that's a good idea. Let's ask for public comment.

MR. FEX: Kenny Fex. You're right that definitely at the beginning is useful, but then sometimes you guys bring up something that is definitely important that I might not have seen or whatever, and so anywhere along the line, and I appreciate you allowing that to happen, because that's very crucial, and so, wherever you guys find time for it, I appreciate it. Thank you.

DR. REICHERT: Thank you. Anyone else? Ben, as our council liaison, I know this was a discussion, and, unfortunately, I missed that discussion at the last council meeting on Friday, but do you have any additional comments or suggestions or comments relative to how it worked this meeting?

MR. HARTIG: John mentioned about after a presentation, where people have seen the information the SSC is going to discuss, and that may be an opportune time, before the SSC goes into discussion on that presentation. That would be a great time. If someone from the public has something they want to interject, that would be great.

DR. REICHERT: Okay, and, as I said, we will discuss and look at the agenda for the next meeting and see where the most appropriate time is to add that and see how that works for us. Chris Conklin.

MR. CONKLIN: This was kind of my baby idea here. It's just from participating in the last couple of SSC meetings. There was more members of the public. We're not looking for you guys to get bombarded or anything, but the opportunity for the public to comment before a meeting and then after and not be able to sort of interact.

I know that you guys do afford the public an opportunity if they do want to, but I was looking for a more formalized something on an agenda or a way to do it so that more people would come and participate, because these meetings are as if not more important than a council meeting, and I really feel like fishermen and other stakeholders are getting left by the wayside if they're not participating on this side of the process as well, and it doesn't have to be a long process like we go through at the council meetings, but definitely just a couple of things that have helped this week, I think, to inform you guys, and even like Mr. Strelcheck back there, he afforded the opportunity to make his public comment, and so I appreciate it, and I would appreciate your consideration of it, and so thank you.

DR. REICHERT: Thank you, Chris, and I think, at some point, we can evaluate whether we feel that those opportunities are hampering our discussions and then go back to the council and see if we need to make adjustments, but I think we can continue with what we're doing, and so I think

it's a positive thing to allow that in our SSC, and I believe in other SSCs that they have -- The procedures in other SSCs are differ net, in terms of anything from the meetings being recorded and broadcast, and some SSCs do and some SSCs don't, and the opportunity for public comment. I believe all SSCs do that, but not all in the same manner. That was one of the things that I learned at the last SSC meeting, the variability in how different SSCs approach these processes, and so that was interesting to see.

MR. CARMICHAEL: Just some wrap-up on that. It seems like we liked the idea of doing it with each topic, and what about the initial one before? Do you want to dispense with the start of the meeting one and just focus on it with each topic? There is some value to that as more of a general comment, I think.

DR. REICHERT: I personally would like to keep that, because people may not be able to be present at every single agenda item, but still would like to make some comments, and so I personally would like to keep the comment period at the beginning of the meeting. Perhaps not at the end of the meeting, but at the beginning of the meeting, so someone who cannot be here for the full SSC meeting will have an opportunity to bring forth the comments that they feel are important, but that's just my personal opinion.

DR. BARBIERI: I know that this is being broadcast by webinar, and I'm just wondering whether is anybody on the webinar that -- No one is there? Okay. That public comment, I think, extends to anyone that would be on the webinar.

DR. REICHERT: No, and we discussed that. John, can you address that, please?

MR. CARMICHAEL: That is not the way we handle public comment now. We don't take comment over the webinar. It's for people who have taken the effort to come here and present their comments. We do accept written comment, of course, and people can provide that along the way, but we haven't taken the step of opening it up to anyone that's on the webinar to make a comment.

DR. SERCHUK: Can we discuss that, or is that a rule now that we can't discuss?

MR. CARMICHAEL: I think it's something the council is looking into how it would be handled, but it's certainly something that you can discuss, yes.

DR. SERCHUK: The point is some people cannot go to a meeting, but they are interested enough to take the time to register for the webinar and participate in the webinar, and my feeling is that, to the extent it makes the process more transparent and to the extent that it brings in more interest than those people that can be at the meeting, we ought to take cognizance of that.

Maybe we need some rules about it, but I am feeling that we ourselves, in many cases, have webinars because we recognize there are travel constraints, there are financial constraints. I see the same thing pertains to our participants on the webinar, and there are other meetings where webinar participants are allowed to provide input. If we want to have rules for that that are different from meeting participants, let's discuss it, but I would -- I am reluctant to summarily dismiss webinar participants from providing feedback or input simply because they are not able to attend our meeting and be physically present. Thank you.

DR. REICHERT: Thank you for that. John, correct me if I'm wrong, but, in terms of other participants, in terms of presenters, those are invitational presenters, and so that's one category of participants via webinar. Then we have, on occasion, we have had SSC members that participated via webinar, but I think we, in general, have said that those should be exceptions, because of the added value of having people present at the meeting rather than via webinar. There are some concerns for an increasing participation via webinar, and so I don't think we ever discussed this at length at the SSC, but correct me if I'm wrong that those are some of the concerns that were expressed, and maybe you can address that. Perhaps we can bring this up with the council and say what -- We serve at the pleasure of the council, and so we can bring this up at the council and ask them what they feel would benefit or would be good. There may be some other implications. Shepherd, maybe you want to address those?

MR. GRIMES: I was just going to point out that the public is always free to submit written comments. They can submit written questions to you in advance. Those become part of the written record of the meeting and every decision that we make, and so that is an avenue available.

DR. REICHERT: So we are providing currently already two formats of public comment, the written comment and then the being present at the meeting and provide comments that way. Anyone else?

DR. SERCHUK: I appreciate it, but I am just saying that I think there is some value added. If someone is going to take the time to be on the webinar and have some expertise, I think they can provide the same service that some of the people in the room that are actual physical participants have added. We would be less informed about some of the things we're doing if we didn't have the public participation that we had at this meeting.

I say the same thing would be true of webinar participants, and I have seen that in other instances, and so I think, as an SSC, if we think there is value to be added by such interactions, and we have to get the approval of the council to do it, that should be the first step, but I don't think that -- We should make the argument that if we believe there is value to be added that we would ask that maybe the process be changed from what it is now. Thank you.

DR. REICHERT: We will pick this up at some future meeting, but I appreciate your input and your concern, and, as I said, in general, I think we all benefit from public comment, people who provide additional information that benefits us, and so thank you for that. It is ten to six. It's time that I propose that we recess until tomorrow morning. We added two items to the agenda, and thanks for suggesting that, Fred. I think that will free up a little bit of time tomorrow. I am asking everyone to be back here at 8:30 tomorrow morning. Thank you, and we will recess until tomorrow morning.

(Whereupon, the meeting recessed on October 19, 2016.)

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OCTOBER 20, 2016

THURSDAY MORNING SESSION

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Charleston Marriott Hotel, Charleston, South Carolina, October 20, 2016, and was called to order at 8:30 o'clock a.m. by Chairman Marcel Reichert.

DR. REICHERT: Welcome. Good morning, everyone. I want to remind everyone that today we will have public comment at the beginning and at our regular end of the meeting. Based on our conversations yesterday, we have a slight change in the agenda, and Mike put the agenda up. It's basically in that same, in that we moved the ABC Control Rule to just before the Public Comment, and so that's going to be the last regular item on our agenda. I thought there was another announcement, and I forget, and I will check my notes and we'll get back with you later. Oh, that was it. There is a request at the first break to update the picture of the SSC, and so we will let you guys know where to meet at the first break, and we can have a picture and update the council website. Unless there is any questions or comments, I would like to move to the first public comment period, and Michelle Duval, our Council Chair, has asked to make some comments.

10. PUBLIC COMMENT

DR. DUVAL: Thank you, Mr. Chairman. I actually have to get on a call later this afternoon, and I don't know how long you all are going to be going, and so I wanted to take the opportunity to address you all now, but, first, to welcome the new members to our SSC and to express my appreciation for all the hard work that you all put in.

I know that we throw a lot of things at you. This is a pretty heavy agenda for you guys to work your way through. We ask you tough questions, and I was pleased by some of the discussion that I heard around the table yesterday, and I think, as we work our way through the new National Standard 1 Guidelines, we will continue to have probably tough discussions around this table about how to apply those guidelines, and so I guess continue to eat your Wheaties before you come to these meetings would be my advice.

I did just want to make a couple of comments, based on the discussions yesterday, and one of these kind of harkens back to something that Andy said in his public comment, which is sort of there is kind of a -- This is something that I brought up at the SEDAR Steering Committee meeting a couple of weeks ago, but it seems like there is continuing to be sort of a fuzzy line between I think what was originally envisioned as an update assessment versus what is a standard assessment, and I think that's why we are hearing from the public with regard to when we get an update assessment, such as the golden tilefish update, that has some pretty significant changes in stock status.

In looking at the SEDAR policies and procedures, the update approach, it says assessments prepared with the update approach are restricted to incorporating additional years of observations to those datasets used in the prior benchmark or standard assessment with limited exceptions, and there are limited exceptions that are laid out there. This includes errors that may be corrected in input datasets or model configuration, and you know these are generally outlined in the update assessment report, but I feel like it might be helpful to have a more explicit outline of what those

changes might be, and I'm thinking back to I think the most recent Atlantic menhaden benchmark assessment.

There is actually a table right upfront at the assessment that identifies what changes were made between one benchmark and another, and I think, given some of the -- I don't think I would call the new multinomial approach an error. I would call it an improvement. As Erik indicated yesterday, the science is always evolving, but that does provide challenges when we go to an update, and so there may be new and improved ways of treating data inputs for a particular assessment, but I think all of those little cumulative changes, when applied to an update, and, in the case of golden tilefish, where we had a benchmark that said the stock was not overfished and overfishing was not occurring and the council set an ACL with a 20 percent buffer below the ABC, and we've had one small exceedance of the ABC since then. There has been no exceedances of the OFL, and so I would argue that management has worked quite appropriately.

I think when you take all of those small cumulative changes and you apply them in an update, and, based on the management that has taken place, there is not any expectation from the public that they should expect a drastic change in the status or in potentially the catch level recommendations that are coming out of this body, while there might be potentially a change in the status, I think this change was pretty significant, and it does have very real impacts.

That is why we had asked you all to consider, and hopefully you all will talk about this in a little bit, and I encourage you to do so, when you consider your ABC control rule, some of these new components of the National Standard 1 Guidelines. I really appreciate Shep being here and I guess providing more detail, since he's had the advantage of having the ability to look at these changes ahead of time, but I think Erik gave a great explanation yesterday as to the multinomial approach and why it has been used and what it does, and I think everyone around the table would agree that this is an improvement, but I think, because of the limitations of our sampling efforts here, I think we're going to continue to see similar types of impacts as this approach is applied for our assessments.

I have to say, when Erik mentioned that this is a very active area of research, it gave me pause, because I think, to me, that says we can only expect even more changes, and so, in a way, I feel a little bit like that SEDAR 25 model that was chasing the recruitment spike -- I feel like, as managers sometimes, we are chasing shifting goalposts, and I know nobody wants to see that, and it's a balance of incorporating the improvements in the science, because we want the best information available upon which to make decisions, but, from a stakeholder perspective, all they're seeing is, well, I thought this was just an update and we're seeing very significant changes.

A couple, again, of my suggestions would be -- I think if changes to data treatments and how a model has been configured are outlined explicitly, and I don't know if that's a term of reference, but so that you all have that information right there in front of you before you're actually viewing the assessment, and it seems to me that that might help you view the impacts of those changes in context compared to the previous assessment, and so that's something I will say.

It's my hope that moving to the new approach of having a research track and operational assessments might deal with some of this fuzziness, or at least what I perceive as being fuzziness, between a standard and an update assessment. The rest of our assessments, as we transition to this new approach, are actually standards, so that the new CVID index can be considered in there, but,

again, it's all of those small, cumulative improvements, as they may be, but I think, when folks read the SEDAR policies and procedures and they see those cumulative changes, they're seeing a difference in how the policies and procedures are being applied.

I think the other thing that I wanted to address is, based on some of your conversation yesterday about exceedances in annual catch limits, we do have new accountability measures that just became effective in January of this year. I don't know if Myra is here yet, but there are payback provisions in those new accountability measures.

We tried to standardize those across our managed species, and so we sort of had a little bit of a hodge-podge of moving averages and shortened seasons in the year following an overage. We still have some of those approaches for our coastal migratory pelagic species, but I think, for our snapper grouper species, we've tried to standardize those, and so I think that might help address some of the concerns that were expressed by some SSC members yesterday. Again, I encourage you to consider how to respond to the new National Standard 1 Guidelines as you move into your discussion of the ABC control rule.

Then the only other thing I will bring up, and this was based on a comment made by Carolyn yesterday. I think Carolyn mentioned that she felt like a little bit of a cliffhanger from a year ago, when Dave Van Voorhees and John Foster were here and gave what I thought was a great presentation to you all with regard to alternative methods to try to estimate or calculate catches for rarely-intercepted species, and they used a number of examples from our deepwater species.

I think all of us were kind of left with, okay, whose court is the ball in at this point? Who makes the decision? I've had quite a conversation back and forth with Dr. Merrick, particularly in regards to calculation of recreational cobia harvest, which has been no small issue for the council lately, and what has been communicated to us is that it is really -- While it is the responsibility of MRIP to provide the best scientific information available with regard to the methodologies that they have in place that are approved, if there are alternate means, and I am specifically referring to some of the catch averaging methods that were displayed for you all last year, such as using an annual average of catch times an annual estimate of effort or a three-year annual average of catch times an annual estimate of effort, that these could increase the precision of those estimates.

From the council's perspective, we're looking for a way to better track our annual catch limits, particularly if our accountability measures are post-season accountability measures. There is not really a need then to have a wave-by-wave estimate of cobia if our accountability measure is to decrease the vessel limit in the following year or decrease the season limit in the following year, and so this is something that you all didn't have time to address at this meeting, but I would like to see you all consider use of those approaches for the council to be able to better track our annual catch limits, in order to ensure that we are actually applying an accountability measure when it is needed, and so I will shut up. I know you all have a lot to do for the remainder of today, but thank you, Mr. Chairman. I appreciate your indulgence, and thank you all, again, for all of your efforts.

DR. REICHERT: Thank you, Michelle, for those comments, and some of them were well taken. I made some notes, and perhaps we can address some of these in one of our upcoming meetings, and so thank you so much. I am looking around to see if anyone else would like to make a public comment. Seeing none, Mike, go ahead.

DR. ERRIGO: I just wanted to convey a piece of information from John Foster. Yesterday, he was listening in to part of the conversation on the MRIP data discussion, and he just wanted to clarify how some of the estimates are made. He said that, although it's possible to get estimates of landings and discards by county, that is not how the estimates are originally produced. I tried to get that across, but I didn't go through a very detailed description of how MRIP estimates are calculated. He just wanted to make that clear, that they're done by state and then, in Florida, by region, and so the east coast and the west coast of Florida.

Let's say, for instance, in Georgia, if you have red snapper in one county, they produce the estimate for the entire state. When they do the effort survey, the phone survey, they take all the effort and then those intercepts are basically representative of the entire state, and so that's how they -- They pool all the intercepts, basically, when they make a state estimate, but they know where the intercepts occur. They know which intercept site they occurred at, so that, when they produce the public datasheets, you can produce estimates of landings and discards by county. They allow you to be able to do that, and so he just wanted me to make that clear to you guys.

11. BLACK SEA BASS POT MESH SIZE STUDY

DR. REICHERT: Thanks for that clarification, Mike. Any questions or comments relative to that point? All right. Then we are happy to have Dr. Paul Rudershausen from North Carolina State University here today. He is going to give us a presentation on a study of different mesh sizes in the commercial black sea bass pot fishery.

While Paul is getting situated, let me remind you that this is Attachment 28, and Mike just emailed an update of that presentation that Paul provided. Also, let me remind you of the action items here. The action items are to discuss the uncertainties associated with this study and recommend whether this study is the best scientific information available and is appropriate for use in managing fisheries resources. With that, Paul.

DR. RUDERSHAUSEN: Thank you, Dr. Reichert, for that introduction. I am going to walk you through, over the course of the next twenty minutes or so, the evolution of our thinking of how we arrived at some potential new optimal trap mesh sizes to test in the black sea bass fishery, the commercial fishery, of course, in this region.

Before I get started, I just want to acknowledge the substantial contribution of Jeff, who of course is here this morning, and Joe Hightower as well, and I also want to acknowledge the considerable funding support from North Carolina Sea Grant for undertaking this project through their now defunct Fishery Resource Grant Program.

This is really one of the slides that I asked Mike to upload a new presentation, the updated presentation this morning, because this -- Since I gave the talk to the advisory panel, the Snapper Grouper Advisory Panel, in April, the product has now been published in *Fisheries Research* in July of this year, and so, if you're interested in more details, modeling details or discussion about what I'm presenting this morning, feel free to get with me or check out the product in *Fisheries Research*.

We had a couple of main reasons for undertaking this study. As you in the audience know, trap is the main commercial gear used to harvest black sea bass in this region, but mesh size regulations have not evolved with fish size regulations in this commercial trap fishery, and so our goals in this study were, first, to determine whether larger trap mesh size would better match fish size regulations, and, secondly, we wanted to determined whether we could use black sea bass morphometry to a prior predict a new optimal trap mesh size and then, using commercial stakeholders, go ahead and test our predictions in the field.

The next slides will walk you through our evolution of our thinking on how we arrived at a couple of new novel trap mesh sizes to test in this fishery, and I say novel trap mesh sizes because, at the time that we concocted this study, we didn't have a real firm idea of, number one, what mesh sizes we were going to test and, number two, if they are available in any of the commercial markets, either domestically or worldwide.

We used morphometry, simple black sea bass morphometry, to predict the length at which 50 percent of the individuals would be selected by any one of our hypothetical mesh sizes that we were interested in testing to more optimally fit the new commercial minimum size limit of 279 millimeters total length.

As you in the audience know, it's really not the fish length, per se, that will dictate whether a black sea bass can egress through a trap. It's really the body depth that will dictate whether a sub-legal, or potentially sub-legal, black sea bass is able to egress through any one of the meshes of a commercial black sea bass trap in this region.

Armed with that information, we revisited a study that Jeff and I and Scott Baker did about a decade ago that predicted body depth as a simple linear function of total length, and that relationship, that published relationship, is presented on this slide right here. Then we can go ahead and go to the next step of this process and say what's the predicted body depth of a commercially minimally legal black sea bass. Eleven inches, again, is 279 millimeters total length, and that predicted body depth is about seventy-seven millimeters.

Then the next step in our thinking is how do we arrive at this new potentially more optimal trap mesh size for the new commercial minimum size limit in this fishery. The next step is really to look at the diagonal opening. It's the diagonal opening that will ultimately dictate the -- That's the largest opening, of course, in any one of these trap meshes. It's not the square measure, as this stuff is sold or regulated by the council, but it's the diagonal opening that will dictate whether a fish can be retained or egress through a trap mesh.

That actual diagonal opening for the minimally-legal black sea bass trap mesh type, and that's a mouthful, but, in the minimally-legal black sea bass trap mesh type in this fishery, you have what we call a back panel trap type. That is five sides of inch-and-a-half inch mesh on the square, and the sixth side, or the back panel, if you will, the back panel being the side of the trap farthest from the haul rope, is two-inch mesh on the square. When you factor in the gauge thickness of that wire mesh, as well as the vinyl coating on the mesh, that actual diagonal opening of two-inch mesh is about 66.5 millimeters diagonal measure.

What we have in those red circles on this slide then is a disconnect. We have a minimally-legal black sea bass being about seventy-seven millimeters body depth, or about ten millimeters greater

than the actual diagonal opening of the largest square mesh measure in the minimally-legal black sea bass trap mesh type in this fishery.

What we can do then is go through this whole exercise for any particular trap mesh size that we think might be optimal for the current minimally-legal black sea bass in this region and say what's the actual diagonal opening of the mesh and what's the 50th percentile, or L50, if you will, as far as retention is concerned, as far as total length of black sea bass, and so what I have here on this slide is a very simple table.

The left-hand column are a variety of different mesh sizes, either as metric square measures or English square measures. The middle column is the actual diagonal opening, again factoring in the vinyl coating and the gauge thickness of the wire, and the right column is the predicted L50, or the length again, at which 50 percent of the individuals are retained.

You can see, in these top two rows of data, for two-inch mesh, which, again, is the largest trap mesh size in this back panel trap type that is still legal in this fishery, the actual diagonal opening, like I said in a previous slide, is about sixty-six millimeters, and this L50, the predicted L50, is 241 millimeters. That is substantially less than the current minimum commercial size for black sea bass in this region.

Then if we go up to two-and-a-quarter-inch mesh, you can see that the L50, as far as the right-hand column of this slide is concerned, is 272 millimeters. Again, that's less than the commercial minimum of 279. Then, finally, when we look at square mesh of let's say two-and-a-half inches, that bottom row of data, the bottom-right number in this slide, the L50 is finally 302 millimeters, or greater than the commercial minimum size.

Armed with this information, Jeff and Joe and I decided to test not only the commercial minimum legal trap mesh configuration, which is that back panel trap type that I've been talking about, but also uniform trap mesh sizes that are shown here, the two-inch trap, the two-and-a-quarter-inch trap, whose predicted L50 is just slightly less than the minimum size limit, as well as the two-and-a-half-inch trap, and the predicted L50 is slightly greater than the current commercial minimum size.

As I told you in the previous slide, we went about using these various trap mesh sizes and tested the selectivity with the purpose of estimating selectivity with field data, and so, in Onslow Bay in 2013, with the help of Tom Burgess, who is the cooperating stakeholder in this project, we fished the following five trap types. The top trap type here, Number 1 on this slide, is the control trap type. When you're estimating selectivity of experimental gears, it's the control trap type by which you gauge or estimate the selectivity parameters of each of your experimental gear types, and so that's why this uniform trap mesh size of inch-and-a-half on the square on all six sides was fished, and, again, we're calling that the control trap type.

As I told you earlier, we fished four experimental trap types, what I will call the back panel trap type, which is Number 2 in this list. That, again, that had inch-and-a-half mesh on five sides and two-inch square mesh on that back panel. Then the final three trap types that we tested had uniform mesh on all six sides of the trap, two-inch on the square, two-and-a-quarter, and two-and-a-half inches.

Our analysis included doing the following. First, we fit a negative binomial catch model to the observed catch data. When we fit this model, as well as the retention function, we're assuming that the control trap has a retention probability of one, or 100 percent, if you will, as a percentage, across all the length bins over which we're interested in estimating or estimating the selectivity function for each of the experimental trap types. Again, that's the reason that that control trap type is fished.

Then, for each of the experimental trap types, we fit a selectivity function, a two-parameter logistic selectivity function, with the catch data, the observed catch data, divided into ten-millimeter length bins over the full range that we were interested in fitting that function, the full length range of black sea bass.

Then, within the model run, we calculate an L50, and, again, that's the 50th percentile retention of black sea bass for each of the experimental trap types, as well as an L10, and what I will call the L10 here for the rest of the talk is an approximate size of initial retention of each of the experimental trap types. Then we finally compared some more traditional metrics of catch quality, the mean estimated mass of legal black sea bass, as well as the mean number of sub-legal black sea bass. Now, we compared mean mass, of course, because that's how this species is sold on the marketplace, and we compared mean number of sub-legal because that's how these individuals are culled by stakeholders that have endorsements in this fishery.

Now on to some results. First, as far as modeling catch rates, as far as this slide is concerned, I've got five panels of data, from top to bottom. These are observed in dots and predicted catch. The black line is the median predicted catch, and you probably see on your personal computers the light gray lines, and those are the quintiles. The 2.5 is the lower line, and the 97.5 quintile, as far as precision, around that median estimate of catch for the following trap types. From top to bottom, it's the control trap type, the back panel trap type, the two-inch trap, which, of course, is 50.8 millimeters on the square, the two-and-a-quarter-inch trap, which is 57.2 millimeters, and the two-and-a-half-inch trap, which is 63.5 millimeters.

I've got a catch per trap of both observed and fitted on the Y-axis, and, across the X-axis, I've got length bins, total length bins, in millimeters, graded by ten-millimeter increments, and you can see that the predicted and the observed data -- With a little bit of an exception, the control trap, but the predicted data fits the observed data very well, and so the model is fitting with considerable precision here.

Then what we can do with that observed catch data is go ahead and plot the predicted retention probability, the selectivity, if you will. Retention and selectivity, I use those two words synonymously here, of each of the four experimental trap types. There's quite of information in this slide, and so I'm going to have to spend some time on it. From top to bottom, I have the back panel trap type, the two-inch trap type, the two-and-a-quarter-inch trap type, and, finally, at the very bottom of the slide is the two-and-a-half-inch trap type.

First, as you can see in the briefing book, as Mike alerted me to, you folks wanted to discuss sources of uncertainty in this meeting, with good reason, but one of the highlights of this slide that I wanted to alert you to are these sigmoidal curves. The median probability, retention probability, function is the black line for each of these four experimental trap types. Again, just like the previous slide, the precision are the 2.5 quintile and the 97.5 quintile, and those are the gray lines.

Just like the previous slide, there is quite a bit of precision about our estimates of selectivity using this two-parameter selectivity model. There's quite a bit of precision around our estimates of selectivity for each of the four experimental trap types. You can see another trend develops that I want to alert you to, and that is the more gentle slope, if you will, of this very -- The top graph here, the top panel of data, the back panel, the more gentle slope of this sigmoidal selectivity function is indication here, preliminary indication, and I will come back to this later in the slide, that the selectivity by the trap is incomplete.

Put another way, it's clear evidence that black sea bass of a sub-legal size are not able to find, completely find, and utilize the back panel trap before the trap is retrieved. Indeed, when you focus on the vertical dashed lines in each of these panels, the black vertical dashed line is the median L50, again the 50th percentile length of retention, for each of the experimental trap types, and the precision around the vertical black line, dashed black line, are the dashed gray lines. There is less precision for the back panel trap type than there is for the uniform mesh trap types, which are, of course, the bottom three graphs here in this slide.

There's a couple other things to alert you to before I leave this slide. The first, as you can see, are the median L50 for the back panel and the two-inch trap types are both less than the commercial minimum size limit of 279, and then, finally, the bottom two graphs here, for the two-and-a-quarter-inch mesh traps and the two-and-a-half-inch mesh traps, those meeting L50 are both greater than the commercial minimum size limit of 279, and that commercial minimum size limit, of course, is the same. It's the solid line, black line, on each of the panels, and so we switch from less than the L50 for the back panel. The L50 is less than the commercial minimum for the back panel in the two-inch traps. The L50 is greater than the commercial minimum for the two-and-a-quarter and two-and-a-half-inch mesh traps.

Now, if we look at some more traditional metrics of catch quality amongst the four experimental trap types, for this graph, the color coding is identical between the top panel of data and the bottom panel of data. The back panel catch is in the white bars, the two-inch is the light-gray bars, the medium gray is the two-and-a-quarter-inch mesh traps, and, finally, on the far right of each of the panels is the catch from the two-and-a-half-inch mesh traps.

A couple of big take-home messages here. When you focus on the mean estimated mass of legal black sea bass, in pairwise testing, there was no significant difference in catch rates between the back panel trap type and each of the three progressively larger trap mesh sizes. In contrast, when you focus on the mean number of sub-legal individuals, which is that bottom graph there on this slide, there was a significant decrease in the mean number of sub-legal individuals between the back panel trap type and each of the three progressively larger trap mesh sizes.

If you need further convincing that the number of sub-legal black sea bass might be needlessly high, given the new commercial minimum size of 279, it's in this very simple table here, and the table is, as far as its columns are concerned, are each of the four experimental gear types. From left to right, it's the back panel trap type, the two-inch trap, the two-and-a-quarter, and two-and-a--half.

I've just got really two rows of data here. The total is, of course, 100 percent for all the columns, but it's just a breakdown, percentage-wise, as far as legal versus sub-legal animals, black sea bass,

in each of the four experimental trap types. Roughly equal percentages of legal versus sub-legal individuals for the back panel trap type. When we go up to the uniform two-inch trap type, about two-thirds of the individuals are legal. About 95 percent of the individuals are legal for the two-and-a-quarter-inch mesh trap. Then, finally, in the far-right column of this slide, is the uniform two-and-a-half-inch mesh trap and almost all of the individuals, 99.8 percent, were legal in this study.

In discussion, we thought that it was useful to produce a fairly convoluted graph, and it's going to take me a while to walk you through this graph as well, but we undertook this study hoping that we could optimally predict not only for the current commercial minimum size limit of 279, but given any potential future changes in the commercial minimum size limit in this fishery. We were hopefully we could optimally predict, a prior, an optimal trap mesh size.

We went into this study hoping we could predict specifically an L50, as I told you at the outset, and was that prediction successful? The answer is no, and I will tell you why in a second. However, can fish morphometry, that is black sea bass morphometry, of course, be used in the future to predict optimal trap mesh sizes to condone in this fishery, and the answer is a resounding yes.

What I have plotted on this slide is, on the Y-axis, is black sea bass total length, in millimeters, of course. On the X-axis is a center-to-center mesh size measurement. The black line, the black line here, is this total length of body depth relationship for black sea bass, assuming that fish do not compress themselves, attempt to compress themselves, to try to squeeze through trap mesh.

One of the reviewers, the early reviewers, in our manuscript that we submitted and got published in *Fisheries Research* said, you might want to consider the fact that these animals, to your observation -- Again, this is what we have observed in the field, that black sea bass can compress themselves a certain amount to try to egress through traps, if they're close to the size that they can squeeze through.

The gray line here is this same total length-body depth relationship, but it's assuming that black sea bass are able to squeeze themselves through approximately about 93 percent of the original body depth, and that 93 percent come from published studies of squeezability of other teleosts in other trap mesh fisheries.

What I have here in the black -- We originally, like I said, went into the study thinking we were going to predict an L50, and what we ended up predicting was an approximate size of initial retention for each of the experimental gear types, which are the three black circles that fit very cleanly on this body depth-total length relationship line. I will come back to that black square in a second, but the three black circles, from left to right on the black line, are L10 values for the two-inch mesh trap, the two-and-a-quarter, and the two-and-a-half-inch mesh trap.

The L50 values that we predicted from the model run fit very cleanly on what I will call, again, that squeezability line from left to right, and the gray circles are the L50 values for the two-inch, two-and-a-quarter-inch, and two-and-a-half-inch mesh traps. The black square is the L10 value for the back panel trap type, and the gray square is the L50 value for the back panel trap type, and the reason they're not falling very cleanly on this total length-body depth predicted line is because that's further evidence that the culling by the back panel trap type is incomplete before the trap is

pulled, and that's a very important point. Relative to the uniform mesh trap sizes, the back panel trap type is not optimizing the selectivity before these traps are being retrieved.

Chip Collier kindly provided me some effort data about a year ago, and we combined that with some preexisting discard mortality information that we had collected and published on black sea bass to do a back-of-the-envelope calculating, assuming, for the moment, for the purposes of me presenting this slide, that hypothetically, and I know this isn't the case, but, just for purposes of argument, hypothetically, that all endorsement holders in this fishery uniformly fish with a back panel trap type, which is the left two columns of data in this slide.

Then the middle two columns of data hypothetically assume that all endorsement holders would switch over to a uniform mesh size of two-and-a-quarter-inch mesh, and you can see the number of discarded individuals would decrease, hypothetically decrease, from about 208,000 per year to about 11,000 if this switch was made, and the number of dead discards, again using this published information that we worked up as far as black sea bass discard mortality, the number of dead discards would drop from about 35,000 to about 2,000 individuals per year in this region, and so a significant savings if the council were to consider condoning the larger trap mesh size, not only savings in the number of discards or a reduction in the number of discards, but also a significant reduction in the number of dead discards as well.

For those of you that saw my talk to the Full Council in Georgia in March on this topic, as well as to the AP here in Charleston in April, I presented some information, and this is just a screenshot of a recent quote from the wire mesh manufacturer C.E. Shepherd, based in Houston, Texas, that alerted me in January of this year, before my talk to the Full Council, that this wire mesh was available.

I have heard, through Tom Burgess and others, that there may be, from C.E. Shepherd, a minimum order, volume order, requirement from C.E. Shepherd to produce this novel wire mesh size, the two-and-a-quarter and two-and-a-half-inch mesh size, if the council were to proceed further in considering changing the mesh size regulation in this fishery. It is available, but the company that produced it, at a greatly discounted rate for this study, might have some further, and I use this word loosely, strings attached, as far as volume that's required to produce it on a larger basis, because this two-and-a-quarter and two-and-a-half-inch mesh is not available like the two-inch mesh is on a wider commercial market, either domestically or internationally, to the best of my knowledge at this time.

In conclusion, what we found is this uniform two-and-a-quarter-inch mesh trap appears, right now, to balance both wire availability and an optimal selectivity, or a near optimal selectivity, for the current commercial minimum size limit of 270 millimeters. The big point here that I made a couple of slides ago is that mixed mesh traps, such as this back panel trap type that is still legal in this fishery, does not appear to optimize selectivity, and so I'm sure it's tempting, as it would be for me, to go ahead and take a two-inch mesh trap off of a current back panel trap and then replace it with either a two-and-a-quarter-inch or a two-and-a-half-inch mesh back panel, but our data clearly shows that, regardless of the potential size of a back panel, that that, relative to a trap of uniform mesh size, is not going to optimize selectivity.

Then, finally, like I told you a couple of slides ago, future predictions of optimal trap mesh size, given any potential changes, fish size changes, in this fishery in the future should be based on the

availability of this species to squeeze through trap mesh. A number of people helped me besides the ones that I acknowledged in my cover slide, and I would like to acknowledge them again here, and I would be happy to take any questions on the talk this morning.

DR. REICHERT: Thank you, Paul. That was a very nice overview. I think it's a very nice study with, I think, very high utility for management. I have a question on Slide 16, where you showed the mass per trap, and I realize that in the 57.2 that there may not be a statistically significant difference, but is the higher biomass or the seemingly higher biomass, or even the biomass that is roughly the same, although your number of sub-legal sea bass has declined, does that mean that perhaps your fullness isn't as much, and so you allow for a higher biomass of the larger fish in your trap?

DR. RUDERSHAUSEN: Mr. Chairman, that's a very good point, and one of my co-authors, Joe Hightower, wanted me to bring that to the audience's attention, which I failed to do when I first went through Slide 16, but he thought that that was a real effect, despite its statistical non-significance here, of some type of, I think to your point, of a potential gear saturation effect, where the number of sub-legal fish is dropping out sufficiently and it's being -- For lack of a better word, it's being counteracted by the number of legal fish that are being, first, attracted to and, secondly, retained by the trap.

DR. REICHERT: So the relative yield is actually higher, because you allow for more bigger fish, is what you're saying, potentially, although I realize that it's not statistically different.

DR. RUDERSHAUSEN: Potentially.

DR. REICHERT: Thank you. Any other questions or remarks?

DR. SEDBERRY: I know that in research trapping of black sea bass, which have relatively short sets, the sea bass go into the trap and really gorge themselves on the bait and become fatter and less squeezable because of that, but I wonder, if the commercial fishery, with longer soak times and time to digest that bait, if that's an issue.

DR. RUDERSHAUSEN: My observation is I don't think it's an issue either way, because these fish will -- I have seen these fish regurgitate. As far as your point, as far as increasing fullness on a short soak time, these fish, especially when being retrieved from depth, and let's say depth is construed as at least twenty meters deep, these fish regurgitate their stomach contents very readily, and so the squeezability can happen anywhere before the trap is pulled or as the trap is pulled, and so I don't know if the soak time really matters to the extent that you might be alluding that it matters, but that's just conjecture on my part.

To your point as far as soak times, the soak times in this fishery are extremely variable. The soak times that we used were both day, hour-long, and overnight soak times, combined to feed these models, but, to your point, soak times in the commercial fishery range from, especially in the winter, from extremely short, a half-hour, to overnight, and so it's highly variable.

MS. LEE: I think you did a great job on this project, but I was just curious if you considered any other selectivity models and if that would improve your ability to predict the L50.

DR. RUDERSHAUSEN: Yes, we did, Laura. We considered a number of models, and we found this selectivity model fit the best. We considered a three-parameter selectivity model, an asymmetric selectivity model, and that didn't fit the data as well as the two-parameter model that we ran with.

DR. REICHERT: Thank you. Anyone else have any questions?

DR. SERCHUK: Two questions, and the first question goes back to the graph that you mentioned, Mr. Chair. I don't doubt that these are no difference between the configurations and the back panel, but the figure itself is a little bit misleading, I think, because one is looking at the error bars as more or less confidence limits, and so you can see that there is no overlap between the largest millimeter and the back panel, and I know that's not the way it's configured, and there is standard error, but it tends to be -- You tend to want to look at these error bars as if they're overlapping that -- That's commonly done that way.

More importantly, is there any difference in the size distribution of the animals as they segregate in their habitats, so that, therefore, you could fish with a smaller trap offshore, let's say where the larger ones would, and it would have very low accountability of smaller animals.

DR. RUDERSHAUSEN: I will ask Dr. Buckel to chime in on this too if I miss the mark, but the big thing when you estimate selectivity of these gear types, and we went to far ends to meet this assumption, is that all the traps -- Selectivity of experimental trap types is gauged against the catch of the control trap type or selectivity is assumed to be one across all the length bins that you're estimating selectivity, and these traps are fished in the identical area at the same time, and so I'm not sure if your issue fits in the realm of this study. I recognize what you're saying, a shift in size distribution potentially offshore versus inshore, but, for the purposes of this study, all the trap were fished simultaneously in the same place at the same time.

DR. SERCHUK: Then it gets back to your estimate of the discards. Just hypothetically, if you fished a small-sized mesh in an area where there weren't small-sized fish, you would not get the savings that you're talking about, because you're assuming that the size distribution is across the board, and that was my only point there. Thank you.

DR. ERRIGO: We actually did a lot of work, and I forgot what the regulatory amendment was, on the black sea bass closure, when we tried to open it, on the right whale closure, and it turns out there are larger black sea bass in the winter, and they tend to go further offshore in the winter, but, currently, now it's closed. They're not allowed to fish during those months, and they are constrained to being closer to shore because of the position of the Gulf Stream and things like that. That aspect of the fishery might not be relevant anymore, but it may have been in years past. Right now, there is a constraint on the trap fishery that wasn't there years ago.

DR. SERCHUK: All my comment was is that the size composition, particularly for the control, relative to the other ones, assumes that that size composition of fishes is a predominant one in all habitats. If larger ones move offshore and you fish inshore, you're not going to get the larger ones in the traps no matter what happens, because they're in a different habitat. I don't know the ecology of these animals, but I am just thinking, hypothetically, if those sort of things happen, you have to be careful that the benefits that you are indicating might accrue might not accrue to that extent, and that's all.

DR. BUCKEL: I'm not sure if there's anyone in the industry that could speak to it, but, Fred, it's a good point, but I don't think that that would ever occur in this fishery. The folks are -- That's overhead. The further offshore you go, it's more fuel, and so these fish, the large fish, are available inshore when this fishery is prosecuted, and they're mixed with the small fish, and so that's why this issue comes into play.

DR. REICHERT: Yes, and that's what we see in the chevron traps also, in general. Joe, correct me if I'm wrong, but there is a general trend that you see some larger fish in deeper areas, but the large and small fish are available throughout the year.

DR. SHAROV: Maybe not a question, but a comment. It appears to me that, number one, this is very clear and very well-designed, and there are very clear results. It's a very good study, and I enjoyed the presentation. Thank you very much. I wish we had more studies like this in different areas, but your last conclusion about utilizing the squeezability of the fish, this is not an outcome of your study. This is your hypothesis, as far as I understand, and you have not studied the squeezability, so to speak, right? That's your attempt to explain why your predicted L50 turns out to be smaller than your estimated L50, but there could be many other reasons why that happens. It's not necessarily -- I understand. I have held the fish in my hand too, and I know that I can squeeze it, but I don't think that it comes as a result out of your study, but that's just a minor comment. Would you agree?

DR. RUDERSHAUSEN: Yes, it's fodder for discussion, and it's fodder for future research on this topic. I think the data in hand though and my observations of tens of thousands of these individuals being pulled through traps do indicate their ready ability to squeeze and also the predicted fits of these lines indicate that squeezability, while it might not be a sole factor in making these patterns on this graph, is definitely a determining factor in producing this kind of pattern that you see here.

DR. BUCKEL: Just to add to that, that 93 percent comes from the literature, where folks have tested the squeezability in trawl mesh, and so I think it's a -- I definitely see your point, Alexi, but I think it is founded in some empirical research with other fusiform fish and with meshes.

DR. SHAROV: If I could, why didn't you try to push them through as well? That would be a very quick experiment.

DR. RUDERSHAUSEN: To your point, folks have before in some of these trawl studies, but that certainly wouldn't mimic the behavior of fish coming up through the water column or even at the bottom, as it's trying to egress from a trap under its own energy.

DR. REICHERT: Thank you, Paul. Any other comments or questions? At this point, let me remind you of the action items. It's to discuss uncertainties associated with the study. I think Paul pointed out some of the uncertainty. I think it was well addressed, as he pointed out. Any additional comments to that? Are there any issues of uncertainty that we feel were not addressed? Seeing none, then I would conclude that the uncertainties are addressed in the study and no doubt in the paper, although we haven't seen that.

Then recommend whether this study is the best scientific information available. I would say it is the best scientific information available, and I am looking at the committee to see if anyone has any comments relative to that point. Anyone disagree with that point? Seeing none, then the consensus statement is that the SSC recommends that this currently is the best scientific information available and is appropriate for use in managing fisheries resources. Any comments or questions? Does anyone disagree with that point?

DR. BARBIERI: No, but I just want to reinforce that I think this is really well done. Congrats to the team again. It's very well planned out and very well executed, and I think it's clear. It's so incredibly helpful, and so it's one of those things that we would like to see more of these studies put forth, because this kind of stuff is very informative and very directly applicable to a lot of the issues that the council and we deal with.

DR. REICHERT: I completely agree, and I would echo that. That's the consensus statement of the SSC relative to this agenda item. Again, I want to thank Paul for the presentation and for the study, and, as he mentioned -- Go ahead, Mike.

DR. ERRIGO: I just wanted to ask -- If the council were to consider let's say changing the size limit for black sea bass commercially, they could use this regression analysis to predict what mesh size would optimize retention of legals and the release of sub-legals?

DR. RUDERSHAUSEN: Yes, that's correct, Mike, and our data indicates that we believe, me and my co-authors believe, that the council can use these data to successfully predict an approximate size at initial retention, or an L10, if you will, as opposed to approximate size at median retention, or L50.

DR. REICHERT: Thank you. Again, thank you for the presentation and for the overview of this study. Jeff, you as one of the other people involved, thank you. With that, I would like to move to the next agenda item, which is Spiny Lobster Review. We discussed spiny lobster at our previous -- Sorry. I missed one. The next agenda item is the Number 10, the Management Analysis Review Process. Thanks for reminding me, Mike. This is Attachment 29, the South Atlantic Fishery Management Council's SSC Peer Review Process, and, John Carmichael, do you have a presentation?

12. MANAGEMENT ANALYSIS REVIEW PROCESS

MR. CARMICHAEL: This document lays out a proposal for a better way for us to deal with the complex analyses that often come before you, and this was really initiated by some of the discussions in dealing with some of the analyses in management plans. We had a very involved analysis of area-based effects and potential area closures. We had a lot of very involved analyses in dealing with the sea bass pots and the whale interactions, and it took some -- There was a lot of information on that, and, in some cases, it's as complex as stock assessments, and we really thought that it might help if there was a better way to get that information to you, rather than just all of you receiving a presentation and trying to discuss it.

The idea was some type of workgroup approach, where some SSC members could be more engaged in these different analyses and be more involved along the way, so that there is some SSC

input possible as these things are developed. It would give you an opportunity, for example, to take more involvement in the data decisions and such that are done, and I'm thinking also of the analysis that Mike did on dealing with changes in bag limits that were increases as opposed to decreases, and there were a lot of decisions to be made along the way that really a subset of SSC folks could bring their expertise and their eyes to help provide guidance to the analysts that are doing that kind of work.

The thought was to have a more formal process to lay this out, and we know that the Mid-Atlantic SSC does this type of thing quite often, set up groups. They had a group that dealt with blueline tilefish and reviewed some of that material, and so what this proposes to do is just to lay out a process, an SSC workgroup process approach, that would make this part of our operating procedures, and it kind of lays out how they would operate, what they would do, who the members and such would be. It's open for any general conceptual questions, maybe, Marcel, and then move into the details here.

DR. REICHERT: Yes, certainly. Anyone have any --

MS. LEE: I just have a comment. I think this is so important. With my involvement in other commissions, which I won't name, I have seen application of analytic techniques, sort of more from the management side, that are just not technically sound, and it just really has always concerned me, and I so I like to see that this is going to be put in place.

DR. REICHERT: Thank you, and I think, this SSC, we've done that ad hoc, for instance with the ABC control rule and development of the ORCS, and I believe there were a couple of other topics, and so I think it's good to work towards some formalization of this process, and this may be some of the details that we will be discussing later, but one of the questions I had is the involvement of the SSC and the council in deciding what topics would be appropriate for this approach, but I think you will get to that when we discuss the details.

DR. CROSSON: When I was looking at this, I was thinking that there's a lot of economics and social science applicability to looking at these management actions and analyzing them, and so I'm hoping you'll address maybe the role that the SEP might have in doing this as well, because we're down to just two economists and one social scientist on the SSC right now, and so I'm concerned that we might end up on every committee or something like that, or subcommittee, looking at management actions.

DR. REICHERT: Okay. Thank you for that.

MR. CARMICHAEL: It is right that we've done something like this quite often, and it's something we tend to do more after the fact, and say, oh, we need to dig into this and let's get a group. One idea is this will be a little more on the frontend, seeing things that are coming up, so we can get this in place. When that product does come to you all for review, maybe you've had more involvement and you're more aware, at least a group of you are.

The idea is that we have a workgroup approach and call these workgroups. We want it to be flexible, because the tasks that are going to be assigned to this group are going to vary greatly, and we don't know form -- We can't know a priori how it should be set up, and so it will be flexible,

and what they're going to do will be based on a scope of work that's applicable to each project and the group.

The idea is that these groups will work informally with whoever is doing the analytical work, with coordination and support from the council staff. Importantly, all the recommendations will be vetted through the SSC, and I think that's critical in terms of the public process and complying with the various rules and regulations that we operate under. While this group is operating informally, they don't make recommendations that, for example, go straight to the council. It all comes straight through the SSC.

One of the important logistical things is what problems do we apply this to, and so we're proposing an SSC leadership team, which is the SSC Chair, Vice Chair, and Former Chair. What would happen is if there's something on the horizon from say an IPT or something the council staff sees that's going on that we think is going to perhaps be justified to apply this SSC workgroup, we would work within this leadership team of the SSC to let them know what the situation is and talk with them about how this workgroup would be structured and what it would do.

Then this workgroup would be taking part in things like milestone reviews and others related to the analysis, and so they wouldn't just get something as a review, but they would be seeing it as it develops and provide their input along the way. Again, because it's going to be flexible and, depending on the situation, there will be a timeline and scope of work prepared for all of that, and they will know really what they're getting into and what's going to be required.

We're proposing that the workgroup is a subset of SSC members, say three to five, and the Chair will be chosen by the members or perhaps assigned by the leadership team. Then they would be selected based on their expertise and applicability. I think, given what Scott said, if we had say an economic analysis, I think we could bring in people from the SEP, and perhaps we should clarify that. Here, I think that would be a good thing to do.

DR. REICHERT: Yes, I think that would be good, SSC or SEP members.

MR. CARMICHAEL: The general approach of these guys would be really to try to make it as efficient as possible, meetings via conference call or webinars or exchange of things over email, and it would really be -- If there was some type of in-person meeting, we would try to hold that say with an SSC meeting, maybe before or after, if the group wanted to get together and talk about stuff, which is kind of how we've done it before when we've had workgroups that have needed to meet, try to get them to come in with an SSC meeting.

They would report regularly to the SSC, and how often this comes up obviously depends on how complex the analysis is and how many SSC meetings there are that happen while this is underway. Then whoever the workgroup Chair is would be just filling in the rest of the SSC on the progress and where things stand and maybe asking for guidance or what have you as they need it. As I said, they will be involved in the whole process early on. They can review preliminary stuff.

Ultimately, we would like for the workgroup to have a report, basically a working paper, that goes to the SSC that documents kind of what they did, how the process played out, and, importantly, what their recommendations are. I also want to highlight that this doesn't have to be -- There is not going to be a formal format and really make this very strict to add a lot of burdensome text

work and writing, but just something that documents what happened and what the recommendations are, and I think that's similar to the Mid-Atlantic reports that we've seen. They're just a paragraph or two, in some cases, of what the group did and what they recommended.

That's the general process, and then, down below, we just gave a scope of work, based on say looking at an example of how this could be, looking at the bag limit increase. The idea is that there would be some type of scope of work like this. It will say what's the analysis, why do we need to apply this approach here, who is doing the work, and then what is the tasks and timelines that we would like to see.

It goes down here with the timeline, which obviously is important. There would be talk about data and methods that are going to be used and the timing with that, and then there would be some initial analyses. The SSC meeting comes up, and so you would report to the SSC. The SSC Chair would report to the council, and then there would be preliminary results. In this case, perhaps in advance of the March council meeting, and a question about further status report to the council, and this is something that perhaps the SSC Chair can handle. He, for the most part, will attend all of the council meetings, and I think that's in italics as something for you all to consider, but perhaps the SSC Chair can be abreast of these different things and tell the council what's going on.

This goes for a final workgroup review, and so there would be you guys looking at it, whatever this workgroup is, looking at the product and seeing what they think of it. They prepare their report, and that would come to the SSC along with the full analysis at an SSC meeting, and then the results, of course, go to the council on the regular process. This was kind of a long analysis. It goes through a couple of SSC meetings. Some may go through more SSC meetings, and some may go through less.

DR. REICHERT: Thank you, John. I have a couple of questions. These are, quote, unquote, informal meetings. My question is, since we discussed the public comments here, do you foresee the public input in this happening at the SSC meetings where this topic is discussed?

MR. CARMICHAEL: Correct, yes.

DR. REICHERT: Thank you. A related question is, in the example, Mike Errigo was listed as an analyst, and would this group have an opportunity, for instance, to invite experts to give presentations on the particular topic, or would that also be something that would be done within the regular SSC meeting and then a workgroup would work on this topic, or maybe a combination of both, or maybe that's something that the workgroup can discuss and have the ability to invite experts to help them with their review.

MR. CARMICHAEL: I would say, with the intent being flexibility, that that would be up to the workgroup. If something were very complicated and we felt that maybe it was leading-edge methods and we weren't well versed in them, that, perhaps along this process, you might ask someone to come in and give a presentation, or maybe, if there was a question about how to proceed and what direction to take along the way with a particular analysis, you could ask that the person doing the work to give a preliminary presentation at the SSC and get some guidance and move on from there. I can see, again -- Depending on the complexity, all of those I would consider viable ways to proceed with this.

DR. REICHERT: Okay. That's a detail. I think, in some instances, depending on the flexibility of the topic, once we report to the council, it may be good to have the Chair of the particular committee there to help explain some of the more complex issues to the council, but that's a detail. Any questions or comments relative to this process?

DR. BOREMAN: Going back to this SSC leadership team, you say the current Chair, the Vice Chair, and former Chair. We have several former Chairs, and so do you mean the immediate past Chair?

MR. CARMICHAEL: That is what we were thinking, yes.

DR. BOREMAN: You better clarify that, because otherwise we'll have a couple of people here competing.

MR. CARMICHAEL: Unless we think we want more, and then we can dig deeper. Four is probably a good group.

DR. SERCHUK: I have no problems with the process, other than I think it's going to involve a lot of work by a lot of people who are already committed to a lot of things. I am trying to think -- This process, in terms of formulating management alternatives or putting the analyses in to look at the management, it's handled differently in different regions. This would be a task in New England for the plan development teams. These are teams that are set aside to work on particular management plans. They have expertise from the Center and they have expertise from various individuals, but it's not an SSC activity. It's an activity that says we're doing to do this and we're going to move forward with this sort of regulation and we need these sort of economic analyses and we need these sort of analytical analyses.

It's framed in that fashion, so that the expertise that's needed is brought together from whatever arena is available, and then the SSC is not involved. There may be SSC members that do this as part of their interest, and I am concerned that this looks like a SEDAR process for management and regulatory actions, and I am also concerned about that it's another level of SSC involvement, and it comes back to the SSC for reevaluation. It looks, to me, like it could be a lot of work, and so I just want to make sure we keep our eyes open.

I am not averse to using the expertise on the SSC to work in the development of these management measures or these regulatory changes, but the SSC -- There is a lot of things going on with SEDAR and there is a lot of elements to the SEDAR process. You've asked for participation for two or three or four of those that are coming up, and that's also a responsibility that the SSC members have taken on. I don't know how much this activity will be in any one year, but I think we should be cognizant that it's going to require some additional efforts. Thank you.

DR. REICHERT: Before I let John reply, I am very sensitive to the SSC workload, and I have been on record saying, relative to some changes and also relative, for instance, to the research track and relative to the changes relative to the fact that we are now involved in all the steps of the SEDAR process, especially the benchmark process, and so I am sensitive to that, but I will let John answer some of the other concerns you have.

MR. CARMICHAEL: Those concerns are valid, and that's why this is intended to not be something that is used all the time. It's used with caution and care and only when necessary, because we do have an analog to what they have in the Northeast. We call them IPTs, and they do the bulk of the analysis for FMPs.

For the simple FMPs and the standard everyday things that we work on, they would handle that, and most FMPs don't really have the kind of analyses that I think would even come close to triggering this, but I certainly think, in the case of the area evaluation that came to you guys over I think maybe three meetings, that was very complicated. It had a lot of data decisions that were done, and those kind of things sort of end up in the realm of they get to you and they have required a lot of work, but, if you have any technical issues, it kind of stops the trains dead in their tracks.

We're hoping for things that are like that, where you could have insight along the way is where this applied, and that it wouldn't be something that comes up every meeting or certainly with every FMP. We would want to apply this very sparingly, out of respect for the workload and recognizing that it could require a good bit more work.

That is one reason why I think having the scope of work is maybe a good way to rein that in and make sure that everyone sees the justification for doing this and what really is expected, so we can better manage the workload and avoid things that tend to sort of grow on their own after you get involved in them.

MS. LANGE: I think John pretty much answered my question. I guess, just more of a clarification, but there was obviously a reason that you developed this process. Over the last few years, about how many times do you think it might have been used? You mentioned one issue, but it doesn't sound as though it's something that you're planning on needing to be used frequently, but this just sets down a formal process by which the SSC members can participate, if needed.

MR. CARMICHAEL: Yes, and I think, over the last year or two or three, certainly the bag limit analysis that Mike worked on. He could have benefited from getting some input from the SSC along the way. That could have sped that up, and then I think that analysis of the area-based interactions of the whales and the protected areas, that was such a complex analysis that you guys reviewed several times, and I think this could have really helped that.

It's maybe one a year, if you look at it that way, because that area thing played out over a number of years. I think perhaps dealing with the ABC control rule, where we've used a group before, that's another thing where something like this could be helpful, but I think it would be pretty limited.

DR. CROSSON: It's funny that you bring up those examples, because, as somebody who works for the agency, I am semi-regularly approached by other members of the agency, and they ask me how the SSC is going to respond to this. My answer is that trying to predict the actions of the rest of you is just as difficult as it is to analyze the original action, and so I'm not going to go down that road, but people do approach me semi-regularly on this, and the examples that you brought up -- The right whale interaction, I had people asking me how the SSC was going to respond to this and what do you think, and I'm like, I don't know. It's just very difficult, and so I think those are definitely points at which it would have been nice that the analysts were able to interact with some of us before it gets to this body. I think it's a good idea, in principle.

DR. SCHUELLER: I guess I think this is a good idea, in principle, although I certainly echo the comments that Fred had, and, at the risk of sounding super jaded, in theory, this seems great, but, in practice, I'm just not sure it's going to come through, because it seems like, in my experience -- For instance, the IPTs, these documents and things are coming at such a quick pace and there's not enough time.

I think that, if you're going to use this, you're going to have to give super careful consideration to allowing enough time for an actual thorough review, because I think things just come in and then you're supposed to review them and it's done. That's just not scientifically appropriate when it's a complex analysis that -- This laid-out schedule would work, but it's just that I am -- I guess I will believe it when I see it at this point, in theory.

DR. REICHERT: To that point, that's also what happens now. Things are coming up, and we, as an SSC, sometimes have very little time to go through a briefing book that contains rather complex agenda items, and so I agree with you. On the other hand, I also hope that this process may alleviate some of that, and it's the SSC that -- We, as a body, can play an important role in what topics we choose and what topics we are not choosing, because of some of the concern that you are bringing up.

John, correct me if I'm wrong, but if we, as an SSC, decide a year or two years or three years from now that this process really doesn't work, then we can abandon it, and there is no reason to hold on to something that apparently hasn't worked. I am cautiously optimistic that this will help with our workload during the SSC meetings and allow us to review some of these very complex issues a little more than we are able to do in the current framework of our SSC meetings.

MR. CARMICHAEL: Yes, that's certainly the idea, and another place where this could work, and Michelle reminded me of this, was that decision tool that was done with mutton. It was incredibly complicated, and so we know that those things come before you, and they can take a lot of time. Even then, I think a lot of times you feel like you didn't have time to understand all the assumptions and all of the decisions that were made on the frontend of some of those things, and it just seems like it would take hours to review it, sitting here at this table, and so we're hoping that, in the long run, that this is actually adding efficiency.

Another place I see this working is, or certainly something similar, is within the update assessments. I think everyone was a little bit surprised by the outcome of tilefish, as we've discussed, and one of the things we've realized is the SSC doesn't really see anything about an assessment update until it's done. Then you get the results, and I'm sure that none of them are as simple as the old turn-of-the-crank, as used to be said. There is always decisions to be made, and so perhaps bringing in some SSC people for the analysts to bounce ideas off of or keep them informed as we even go through the update assessments might be another way to apply this and help reduce some of those surprises.

DR. CROSSON: Although I am hesitant to pile one more thing on my plate, this subgroup that's going to be making these decisions of the SSC Chair, Vice Chair, and former Chair, you might want to add the SEP Chair, since so often these things do involve trying to predict some response from the fishing community. It's an option, but I'm not saying you need to.

MR. CARMICHAEL: I was wondering about that, or should we add them, consult with them, when it's an economic type of issue? I was hesitant to bring them in on everything, because it seems that a lot of them that we've had examples for so far have not really been, and so maybe put them in as an as-needed?

DR. CROSSON: Sure.

DR. REICHERT: Fred, before I go to you, I like your suggestion, although, again, that adds workload to the SSC, in terms of the participation in updates also. However, that may be alleviated a little bit, because I believe currently, with the introduction of the video index, I don't think there's a lot of updates on the schedule right now, and there already is a procedure in place for SSCs to be involved in standard assessments, and so I have concerns, but they may be alleviated.

DR. SERCHUK: One of the things that you mentioned, Mr. Chair, was outside expertise and the possibility of bringing it in, and, actually, I think that's the most important issue, because many of the issues that this council deals with have been dealt with in another fashion by another council someplace, and there is some analysts that have been working on these sorts of things, and I think it's silly not to take advantage of that expertise.

In fact, I think that expertise that's available, that has worked on similar problems or identical problems in different areas, would actually be the backbone of trying to assist in the development of the analyses that we're talking about, and I see most of the benefit here not in any sort of peer review or evaluation of the analyses, although that might happen, but I actually think it's in trying to think about are we going in the right direction of these analyses? Have we met all of the assumptions? What things are likely to happen, and to get that expertise early on.

I don't see this group as a peer review group or a group to give a good housekeeping stamp of approval, and, in that sense, I think it's top-loaded with the leadership on this committee. I think that's not appropriate. I think you need to bring the resources to bear on the issues that are either represented by the expertise of the committee members and supplement that with outside expertise, if it's available, to expedite the process. That's the way I see it.

I don't want to look at this group as sort of a group that says, well, we've given the good housekeeping seal of approval on it, and, even though you've talked about coming to the SSC here and then having discussion, my feeling is, about any one of these issues, there's only going to be four or five members, or maybe not even four or five members around the table, that have the sort of expertise you're looking for for these individual problems. It's sort of irrelevant when it comes back to the SSC then, because we depend upon those people analytically.

Certainly if something came up from an economics point of view, I would be the first one to say, well, I really don't have the expertise. If the members on the committee feel that this represents the best scientific information available, I am certainly not going to question that. It's outside of my expertise, and so I'm thinking that I don't know why it's top-loaded with the Chair and the Vice Chair and so on and so forth.

DR. REICHERT: I was going to ask you, but the committee is not top-loaded. The workgroup is not top-loaded. The workgroup could be any of you, and it does not -- In my opinion, it preferably does not involve the Chair of the committee.

DR. SERCHUK: Okay, but I still think this process should be open to having experts from the outside, because we want to draw upon that expertise. Thank you.

DR. REICHERT: That's why I brought that up, but I also think that you are absolutely right. For a number of topics, there is very specific expertise around this table, and it may be only three or five people. However, this allows for those experts to do some homework and to prepare and to review this before we as a committee as a whole discuss this during our SSC meetings. John, to that point?

MR. CARMICHAEL: The way Fred described it is exactly how we see it. It's not as like a peer review and passing judgment, but people really getting involved in all of the early work that a lot of times is kind of buried in the reports that the SSC actually sees, to give the rest of you the confidence in how that was done.

DR. REICHERT: All right. The action item here was comment on the proposed peer review, which I think we did, and so let's see if we can develop this further. Maybe, in one of the next SSC meetings, if we feel that there are topics that would be appropriate for this process, we can discuss that in one of our upcoming meetings.

DR. SERCHUK: Sorry, Mr. Chairman, but I just find the action -- Comment on the proposed peer review process, that's not the essence of what I just heard. It's not a peer review process so much as an analytical process in which expertise is brought early on, to ensure that things are done in a satisfactory manner. This peer review thing has got me a little bit confused.

MR. CARMICHAEL: I need to change the name, yes. It sort of started with that, but I think it needs to be called a workgroup process. Perhaps that would be better.

DR. SERCHUK: Thank you.

DR. REICHERT: Thanks for that, Fred. That's a valid point.

DR. BOREMAN: Not to prolong this, but having the action wait until the next meeting before we go any further, that's six months from now. If something comes up in the meantime, do you already have your leadership team here, and go ahead and try it out and see if it works.

MR. CARMICHAEL: Marcel, we have an SSC Selection Committee meeting in December, and they kind of oversee the SSC process, and so our intention would be, at the December meeting, to show this to the council and get their blessing on it, and I think we're pretty good to move on with it. As we said, if we need to tweak it along the way, we will.

DR. REICHERT: Okay. That sounds good.

DR. BOREMAN: Invoking Roberts Rules, the Chair can set up working groups and name people without getting the blessing. That's the role of the Chair of the committee. If you need a subcommittee or a working group, then get people on it and get working. That's how I view it.

DR. REICHERT: Yes.

DR. SCHUELLER: I am just thinking about this. Is there any thought about how this group would interact with the people on the IPT? Obviously these analyses would be going before more than just this group, right?

MR. CARMICHAEL: I think the thought is they would interact probably through the analyst, who is normally on the IPT, or the council staff. The idea is that they're providing input and guidance to the analysis as it gets developed. They are providing that sort of SSC view along the way and some extra eyes to help the analyst, who often don't have a lot of support and people to bounce ideas off of. We don't see it that this group of people would be part of the IPT in any way or have to take part in any IPT meetings, unless someone felt that there was some compelling need. Again, I think, if there were, within a particular item or issue or topic or whatever, it's flexible enough that we could deal with it if we needed to.

DR. REICHERT: I am going to suggest that -- It's ten o'clock. Where do we want to meet for the picture? Let's meet in the courtyard and take a fifteen-minute break.

(Whereupon, a recess was taken.)

DR. REICHERT: I would like to invite the members back to the table, please. Our next topic is the Spiny Lobster Review. This is a topic, as I started mentioning before, that we discussed briefly at our previous meeting, and this is Attachment 30 in our briefing book, and Dr. Kari MacLauchlin is going to give us an overview of the Spiny Lobster Review. Kari, thank you.

13. SPINY LOBSTER REVIEW

DR. MACLAUCHLIN: Thank you, and good morning. Just a little background on spiny lobster. The SEDAR 8 was a stock assessment for spiny lobster. It was completed in 2005, and there was an update in 2010. The assessments were not accepted by the Gulf and South Atlantic SSCs, and they recommended that there should be a Caribbean-wide assessment, because of the external recruitment for spiny lobster and other factors.

There has never been a Caribbean-wide assessment, but the Gulf SSC, because spiny lobster had to have an ABC and an ACL, just like all the other species, the Gulf SSC designated it as under their Tier 3a of their ABC control rule, and they recommended the OFL set at the mean of the most recent landings in the last ten years, which at that time was the 2001 fishing year through the 2009/2010 fishing year, plus two standard deviations and the ABC set at the mean landings of those ten years plus 1.5 standard deviation. The recommended OFL from the Gulf SSC is 7.9 million pounds, and the ABC is 7.32 million pounds. This was in 2011 when they made that recommendation.

The councils, in Spiny Lobster Amendment 10, which was effective January 2012, and so they finished that up in 2011, they used those recommendations that came from the Gulf SSC and set the ACL equal to that ABC, at 7.32 million pounds, and then they also set an annual catch target, an ACT, equal to 90 percent of the ACL, at 6.59 million pounds. They set the accountability measure to be if the landings exceed the ACT that they would convene a review panel to assess

whether or not there was corrective action necessary. Keep in mind also that there is no recreational or commercial allocations. It's just a stock ACL for spiny lobster, and 90 to 95 percent of it, in any year, comes from the Florida Keys.

Here are the landings just since the ACL and the AMs were implemented. In the 2012/2013 season, it was 5.6 million pounds, but then, in the following season, it was almost eight-million pounds, and that exceeded the annual catch target, the ACL, and the OFL. The review panel was convened that following February, after the councils were notified in 2014, and then also, in the 2014/2015 season, it was over seven-million pounds. It exceeded the ACT, and so we reconvened that panel in March of this year. Then we recently received the landings for the 2015/2016 year, and they are 7.5 million pounds, which exceed the ACT and the ACL.

Here is a graphic that shows the landings, and so, down here at the bottom, these are the recreational landings, and then you have the light-blue line, which is commercial landings, and then the green line, which is total landings. You can see that commercial drives the landings levels, and primarily it's the trap fishery landings that drive this. We have these dotted lines. The highest one is the OFL, followed by the ABC/ACL, which is this purple one, and then the ACT, which is the gray one.

These were implemented here in 2011, and so you can see the landings in the ten years prior were all under those ACL/ACT levels, but then, in the years before that, they were always higher than that, and. even right after it was implemented, the landings were exceeding those levels. This is from a presentation from the FWC to the Spiny Lobster APs. They met jointly in April of this year, and I thought it was useful.

The way that they presented this is that it looks like there are these three time periods relevant to the current issues in the fishery, and so this first time period before 2000, it was the historic landings period, when the landings were high, and then, somewhere around 2000 to 2009, the landings decreased, and there's been a lot of discussion about the factors that affected that, if they were biological or weather factors or market factors or regulatory factors that could have affected that period of lower landings. Then, after 2010, the landings started to increase and were kind of in this period, and so it seems like there are different kind of phases of the fishery, that the fishery has gone through as it responds to the different conditions.

I am not going to go through all the current regulations, but I just wanted everybody to be able to check out what is already in place, and these are in place through the Florida statutes and the spiny lobster federal FMP, and so, for Florida state waters and the EEZ, we have a season. There is also a recreational sport season at the end of July, for two days.

The commercial harvest does require the restricted species and a crawfish endorsement in addition to their seller license, and then they have to report monthly with the Florida trip ticket program. The diving, the commercial divers have a limited access, and so there is a moratorium on those permits, and then they have a limit of 250 lobsters per day.

The commercial trap fishery is under the trap certificate program, which you may be familiar with. It's basically a cap-and-trade program on the number of traps that are allowed in the water. They have reduced the number of traps over the years. I think it's around 450,000 at this point, and they started out with over 900,000 traps, and so they have reduced it in the past twenty to twenty-five

years, since it's been in place, by about half, and so there is a cap on the number of trap certificates that any one person can own, and that is -- I think it's about 4,000, and so that's the most one person can own, but they can buy and sell among themselves, and it's a really active market. People are constantly adjusting their size and entering and exiting the fishery, but there is a cap on the total number, and it will never be higher than that.

They are allowed to use the undersized lobsters as trap attractants, and then there is also a federal commercial tailing permit, and so you have to land the lobsters whole unless you have this tailing permit, and those are for the trips that are multiday trips that go further out.

Recreational harvest requires a license and your spiny lobster permit, and it has a six per person per day limit, and they have a minimum size limit. There are lots of areas that are prohibited for any spiny lobster or for the traps, at the federal and state levels over there. Then no harvest of egg-bearing females.

In the rest of the EEZ off of Georgia, South Carolina, and North Carolina, it's open all year. There is a federal spiny lobster commercial permit that's required, and then also you can get those tailing permits if you want to land the tails. We have a minimum size limit, and then the commercial and recreational limit is two per person per day, and so they're pretty rare that people are bringing those in at all. They can use traps or they can dive, but the councils are actually going to talk about trap limits for this area in the next amendment, because there was some interest in North Carolina for an individual who wanted to use traps. Even though that limit is still two per person per day, there is no limit on the number of traps he can put out to get his two per person per day.

Getting back to the spiny lobster review panel, the review panel was convened as part of that accountability measure after the landings exceeded the annual catch target, and it was made up of representatives from the Gulf and South Atlantic SSCs, staff, advisory panel members, and some of the FWC folks.

We reviewed all of the information and what was going on and why were the landings increasing in this past year, when they had been lower before, and one thing that came up was that usually the landings start to kind of decline in January and February, as the fishermen are kind of switching to something else, but there, recently, has been a live market for China, and that demand goes up in January and February, and so a lot more vessels were actually fishing in January and February to supply this live market.

The review panel did not recommend a new stock assessment. Unless it's Caribbean-wide, they didn't feel that it was going to provide any new information, but they did feel that the ACL is the wrong methodology to manage spiny lobster. The OFL should be redefined as the MFMT and no recommended changes to accountability measures.

After the landings again exceeded that ACT, the review panel was convened again this year, in March, via webinar, and they made these recommendations. It was not a consensus for these recommendations, but the majority supported these. One was to recommend that the ACL be calculated based on landings from the 1991/1992 through the most recent landings period, and so, instead of using just the past ten years, the review panel was recommending using all the years that we have available, so that you could really capture the dynamics of the stock and the fishery. Then

another recommendation would be to look at examining the ACL based on a rolling average or setting the ACL trigger based on landings and the landings-to-effort index.

The Spiny Lobster Advisory Panels for the Gulf Council and the South Atlantic Council met jointly in April. They also reviewed all the information that the review panels received, and we wanted to get input from our APs about what was going on and was there a problem and what would they recommend to address that.

They did also support that recommendation from the review panel to calculate the ACL based on the landings from 1991 through the most recent landings, that longer time period to really capture the dynamics of the fishery, and their rationale was that landings are increasing, but they're not as high as they were in the 1990s, and they just felt like something happened in 2000 through 2010 with the fishery and now it's starting to recover and it's improving.

They also talked a lot about the regulations that have been put in place since then. They have programs to remove the ghost traps, and so they felt like that helped to decrease the mortality from the ghost traps. There is a lot of incentives and regulations now in place. They also have live wells on their vessels so that they can supply that live market in China, and so this is a relatively new thing that they're doing, but it decreases the mortality of those undersized attractants that they keep onboard and also, just in general, the lobsters that they're keeping in the live wells.

Then they also talked about commercial effort is capped through that trap certificate program and the moratorium on commercial dive permits and recreational effort is stable and not expected to have any substantial increase. In the graphic that I showed you, the recreational landings, in general, have been stable over the past ten or fifteen years, at least.

They also recommended that lobster be made a priority species for their size monitoring. They felt like that there should be more of an effort to keep an eye on the size of the lobsters that are coming in, because that is really going to indicate how the stock is doing, and then they also offered kind of a reverse accountability measure, where, when there was a lower landings trigger, if the landings got to a certain level that was low enough, that would actually trigger the accountability measure, the review panel. They felt like high landings indicated the stock was doing well and low landings actually was indicating a problem.

The Gulf's Spiny Lobster SSC met in June of 2016 this year. They reviewed the landings and the recommendations from the review panel, and they also recommended to use the time series from 1991 through the most recent landings years to set that ABC/OFL calculation for spiny lobster, and so I show in here what the current OFL, ABC, and ACTs are and then also what it would be based on with that Gulf SSC recommendation.

The action for you guys to evaluate the OFL and ABC recommendations and make a recommendation to the South Atlantic Council on what those should be. The plan is for the council to get an options paper, the very first phase of developing a new amendment to update the OFL, ABC, ACL, and ACT, everything for spiny lobster. They are going to get that options paper in December and start moving forward with it in 2017. That's all.

DR. REICHERT: Thank you, Kari. I have a quick question, as a clarification. Remind me, but the Gulf SSC recommendation, that was for the entire region?

DR. MACLAUCHLIN: Yes, but the councils manage jointly, and so, in general, I think the SSCs have the same recommendations or they align, so that the councils can jointly accept both SSCs' recommendations, but, yes, it's for the Texas through North Carolina.

DR. REICHERT: Thank you. I would like to open the floor for questions or comments for Kari. Kari reminded us of the action items in her last slide here up on the screen.

DR. SCHUELLER: In stock assessments, the dynamics of a stock are not necessarily reflected in the dynamics of the fishery, although that's the assumption being made here. Why does the AP think that that's a true assumption, and what evidence do they have for that?

DR. REICHERT: Thank you, Amy, and I believe that's consistent with one of the remarks we had as an SSC last time, in terms of the increase, whether that's market driven or whether that's population or probably both, especially with the Chinese live lobster fishery, and so can you comment on that?

DR. MACLAUCHLIN: I guess my question to you would be what would indicate the dynamics of the stock for spiny lobster?

DR. SCHUELLER: I'm not a spiny lobster expert, and so I don't know. That's what I'm asking you. What is information is available that indicates the dynamics of the stock? Is there any fishery-independent data? I don't know, and that's why I'm saying, what makes you think that the landings indicate stock dynamics and what do you have to indicate stock dynamics?

DR. REICHERT: Anne, to that point, or do you have a different point? Then Luiz to that point.

MS. LANGE: I think it's a similar point. My question is why weren't the total time period of catches used in the original assessment that led to the original management plan? That looks like the solution to the problem, but why weren't they used originally when there actually was an assessment?

DR. BARBIERI: First, to Amy's question, I think those are good questions to kind of bring background into this. There have been stock assessments, quantitative stock assessments, of spiny lobster, but because this stock has a much, much broader actual distributional range -- When you look at the landings of this stock, Florida is supposed to have about 5 percent of the total landings, and the distributional range of the stock is miniscule here compared to the wide Caribbean and spilling into the northern portion of Central and South America.

DR. REICHERT: Luiz, can I ask for clarification to that? You said 5 percent, and that's of the entire Caribbean or what's the 5 percent of?

DR. BARBIERI: It's 5 percent of the global landings of spiny lobster in the Western Hemisphere. All the genetics stuff, and there have been studies looking at connectivity of spiny lobster. They have this very long larval period, I guess nine months or something like this, that they are adrift. There have been genetic studies and dispersion type studies looking at transport and currents and probabilities of those things being either separate units, meta-population structure, or the same population, and the consensus, up to this point, is that this is a whole Caribbean-wide population

that sort of slips a little bit into the northern portion of South America and into the southern portion of North America in Florida.

When you look at the genetics of a lot of the lobster that are caught in Florida, they actually are very directly connected with source populations in Central America and parts of the Caribbean, and so, based on this dispersal and based on the genetic structure of the stock, the consensus is that the Florida population is really a sink population. There is some transport over here of larvae that apparently settle and grow, there is some degree of self-recruitment, but the degree of self-recruitment is actually relatively small, expected to be small, given the genetic structure of the population, as it is in the Keys.

Based on that, the stock assessment was not accepted by the review panel. There was a comment about the fact that you can't really estimate the productivity of the stock, because the productivity of the stock is completely outside of U.S. waters, and that we have like this little tail-end of what the population is, and so that put everybody sort of like in a bind of where to go from here.

The Gulf SSC, at the time then, having to apply an ABC control rule, sort of catch advice, went to Tier 2 and then Tier 3. In this case, I guess it was Tier 3b that was used, and Kari put it up there, the Tier 3b, and they came up with this recommendation based on average landings plus two standard deviations for the OFL and then one standard deviation, I believe, was for the ABC.

There isn't really a good fishery-independent monitoring of the adult population. There have been some fishery-independent monitoring of early life stages that have not been found to be conclusive or informative enough to index population abundance, and so it's one of those things where there's quite a bit of lack of knowledge, I guess, about what's driving the dynamics of the stock.

There are some concerns that the FWC team in the Florida Keys that has been looking at the spiny lobster population and fishery there -- They have some concerns about this increase in the landings being an increase in effort, but, because the metrics of effort are so complicated with spiny lobster, because it involves soak time and the number of pulls within that time period where the traps are soaking and all of this, it created a bunch of difficulty in terms of evaluating what the actual proper metrics of effort would be, and so they are working on this. They are trying to get to a point where they can provide some more information about the potential increase in effort, but that hasn't been concluded yet, and so that's a summary of that part.

DR. SHAROV: Thank you very much for that information, but I wonder if you could say anything on Amy's question, like whether there is any fishery-independent information that gives any indication of the status of the stock, at least regionally, to the area that we are most interested in, and also, besides potential indices of abundance -- I am not familiar with the assessment and how it went, but is there anything like the average size of the animals that are harvested and whether that is being monitored or size frequency or some biological information that indicates the level of fishing mortality that happens regionally?

DR. BARBIERI: Not that I'm aware of.

DR. JOHNSON: There are some. FWC has done some things, some larval indexes and things, but they are very spatially -- They're in one or two locations, and they're very sporadic. I had one other thing too, a question for Kari, if I might. Back a while ago, when a lot of the trap reduction

was occurring, there was talk that a lot of those traps were ending up in the high-liners, that you were trading a trap that was in sort of the hands of a less-skilled fisherman and those were concentrating with sort of these guys that really know what they're doing, and was there anything with that, or have you heard anything along those lines?

DR. MACLAUCHLIN: I know a lot about the market for the trap certificate program, because that's what I did my dissertation on, and the thing about the way that the traps redistributed themselves, they definitely at first went towards those -- They started to kind of consolidate with your professional fishermen, and they did start to weed out your small-scale and your part-timers, maybe retired people who came down there and were fishing a little bit, for sure.

However, it's still like the group of people who are fishing, you have that core group, and they have been doing it forever. They are the professional fishermen, and I guess you could call them high-liners, but there is still a lot of diversity in that fleet, actually, where it's so easy to enter and exit and expand, because the trap certificates are so available and easy to find.

They have actually kept a lot of fleet diversity. Definitely not as much as it was before, where you had just all kinds of sizes of businesses, but I would say that it did weed out some of your less effective and efficient businesses, but it's still not -- The price and the way to get into enter that fishery still doesn't exclude a lot of people. It's still pretty easy, and, if you want to do it, money-wise, it's easy to get in there, and I think people do that, and so you still have a lot of your small-time, part-time retirees who are in the fishery. I think that there was some reorganization of it, and when you started to see landings go back up and effort go back up, that, in part, was because your most efficient fishermen were kind of stabilizing it, but it's not all high-liners, for sure.

DR. REICHERT: As a clarification, you mentioned like a reorganization, and then later you mentioned another potential shift. In terms of the timeline, the first one you mentioned was around 2000, and the other one was around 2010 or 2011, and is that what you're saying?

DR. MACLAUCHLIN: In the graphic, the trap certificate program was put into place in 1992 or 1993, and so about here, and they started doing the reductions. The last reduction was around here, which also coincided a little bit with some storms, big storms, that hit in 2004 or 2005, in the fall, right when they were fishing. That probably had an impact on it.

Nobody can say exactly what happened with this dip so fast over such a short amount of time and why it sat there for ten years at that level, but it was probably a lot of stuff, and now they are kind of recovering. The overall economy is recovering, and the businesses are -- The efficient ones are fishing, and they're very good at it, but I also feel like the lobster are also available, and so they're easier to catch.

DR. REICHERT: Thank you.

DR. NESSLAGE: Having assessed American lobster for many years, I fully appreciate the difficulties of trying to identify a lobster stock and figure out where the recruitment is coming from, and I hope that there will be efforts made to try and involve any Caribbean data that can be included in future assessments, but I am a little concerned that the SSC would be asked to make a recommendation on catch limits without any information about catch at length.

There seems to be plenty of information from the region, as well as it looks like there were some pre-recruit indices used in previous assessments that line up with that low period of landings. They were low pre-recruits, and I think that kind of information would really help us, just to keep track of what's going on with the population, perhaps, and just some of that information I recognize is coming from the Keys, but if you look at the maps of what is the anticipated larval settlement patterns, it's all going right past the Keys and then coming up here, and so I think it would be really helpful to look at that information before making a determination, if it's available.

DR. REICHERT: Luiz, to that point, or Kari?

DR. BARBIERI: I sent out to the committee now the SEDAR review report that came out a few years back. There was an assessment update, and that's the one that was rejected by the review panel, but the report has some of that information. There is a stock assessment report itself that has a lot of that information. It's not up to date, Genny, because it's from 2010 or 2011 or whenever that was. I think we could request some additional biological information or sizes and numbers, but that will have to be for our next meeting. That will have to be provided at our next meeting.

DR. REICHERT: I have a question for you about that, in terms of our timing, but I want to give Sherry an opportunity to comment to that point, maybe.

DR. S. LARKIN: It was to one point that was made, and it was something about like had size of individuals gotten smaller or larger over time, and they're harvested at the minimum size. That's the market for them. When they reach the three-inch carapace, that's when they're harvested, and if you don't harvest them, they migrate on out of your range and you don't get them, and so there's no incentive to inventory them in the ocean for larger size for a higher price. The market competes with the market throughout the Caribbean, and it's a three-inch market.

I will say one thing, in terms of context for this. There was never any attempt to model stock recruits before. It was always modeled as a surplus production approach, and, when the program went into place to lower the traps, number of traps, it was purely for economic reasons. It wasn't for biological reasons, because they recognize the variability. If you put that graph and you go back ten years, you see even higher numbers throughout time.

DR. SERCHUK: I am totally bewildered, as somebody that knows nothing about spiny lobster, but clearly we have a resource that is apparently being managed as a stock, but is not a stock. It's certainly not a biological stock if recruitment is coming from outside the area under our EEZ. Normally in those situations, when that happens, one would say, okay, we exempt this from Magnuson and we try to set up some sort of international forum to manage a type of resource like this. Certainly we would do that in highly migratory species and so on and so forth.

I don't know the history of why that hasn't happened. If this is truly a sink, it seems to me, in order to meet the Magnuson standards of trying to aim at sustainability, recognizing you have no control over the input, you would try, in a sense, to get the maximum yield of what you have here, because you have no way of controlling the parental stock. It's someplace else.

It seems to me that the thing that you would try to do is go to either a yield per recruit approach, where you would try to get the maximum amount of yield that you would have, and you could

temper that later on with the economic considerations, but the first and foremost thing is if you're depending on something else coming in and you basically say, well, wait a second, we can either take this resource that's coming and try to get X amount of grams per recruit or we can get three times as much as that.

The first question I would ask, if that is truly the case, and, again, I'm making a lot of ifs, because I know nothing about the resource, but is the three-inch minimum carapace size a size -- Where does that relate to yield per recruit? Is that a good size? I don't know. Typically, you would think about minimum size in terms of age at maturity, but if these things are not contributing to the spawning stock, you don't have to worry about that sort of thing. Again, there's a lot of ifs here, but I'm just wondering -- I am thinking that it basically says this has an unusual life history, and that's one of the things I read here, and we don't want another assessment, because the context of the assessment is not going to be helpful.

We don't have any indices we trust, and so I am trying to be very simple about this. Is there any way that we can -- What is the maximum amount of yield we could get from the animals that are here and how does that play off with market considerations? That's what I would try to look at under sustainability, and maybe I am well away. Thank you.

DR. REICHERT: Thank you, Fred, and I think there's essentially two questions there, and Kari said she wanted to address one of them, at least, but maybe you can address the other and then I will give Erik the floor. Luiz, did you --

DR. BARBIERI: I just wanted to say that I just opened up now the review report, and the review report has the stock assessment report, which has all the indices and all the traditional stock assessment information there, and I also distributed a paper by Nelson Ehrhardt from RSMAS that has looked at the Pan-Caribbean recruitment tracks and all of that information, and I think that what's happening is that we have been discussing this issue for quite some time, but, recognizing that we have so many new SSC members, we should have better prepared, I think, that there would be more questions, because not everybody is familiar with that history of how we came to this point, like Fred and getting to this way of proposing the ABC.

DR. MACLAUCHLIN: There were two things. One thing, Fred, that you asked about was the international coordination. I think, within the Caribbean, there is some effort of coordination, but we're talking about many, many island nations, and it's just, in general, challenging, but there is some coordination and then also a lot of efforts in places in Central and South America, which is where some of the stock that comes into the Florida Keys comes from, an effort to help improve and not taking -- Different management measures that they've put into place there so that we can get our stock properly.

There is a little bit of working with people in other places, but there is no Caribbean-wide management. As far as trying to get an exemption from the ACL requirement, we have tried that a couple of times. The councils wrote a letter to NMFS asking them to exempt and tried to frame it under the current MSA requirements, because it had an unusual life history, and we also made sure that we outlined everything that is already in place for this species and that maybe spiny lobster is better managed with input controls instead of output controls. There is just about every regulation possible that you can put in for this, and I can't really think of anything else, except shortening their season or something like that.

DR. SERCHUK: Excuse me for a second, but what are you managing for? What are you managing for?

DR. MACLAUCHLIN: The council is meeting the MSA requirements. I think that there has been a lot of discussion from managers and fishermen and scientists, a lot of folks involved, that spiny lobster is a really unique situation, because it doesn't meet those exemption criteria like shrimp does. It's not a normal life cycle, and ACLs and AMs were put into place so that -- Here is a level, and when we get above that level, we think there will be a problem with the stock, and that works for a lot of species, especially finfish.

With this one, it's harder, because the recruitment is internal and external, and that probably fluctuates, and there are so many factors, but the council still has to have an ACL, even though we've tried to get out of it and made a case for this is how we can be sure that this is still harvested sustainably without using an ACL, but it's just required, and that's what -- At this point, I feel like they're managing to meet the MSA requirements.

DR. JOHNSON: I was just going to say that, as part of SEDAR 8, there was a lot of talk about if the stock and the recruit are completely disjunct from one another, then it turns into a yield sort of situation, but there is a lot of questions about where the larvae from the Keys goes, and so considering that they may be an upstream source for somewhere else, and so they're not all just lost to New England, in order to sort of stand on your own feet and say Brazil and all of these Caribbean nations don't overfish and so we have stock that the animals here might also end up somewhere else, and that was some concern that was brought up then.

DR. SHAROV: I don't know if this is going to help much, but I totally agree with Fred. I still would like to understand if there was any attempt to -- Since this is a complicated case, presumably, but if the biologists are convinced that the recruitment primarily occurs outside of our management region and, as long as the whole population is not severely overfished in the total Caribbean basin, then you essentially have to -- You don't need to worry about recruitment, and so the oversimplified approach, number one, is just to see what's your optimal fishing mortality that would give you the maximum yield, because you don't have to worry about the recruitment.

What is either the minimum size, like Fred suggested, and what is the fishing mortality that would give you that yield? That's the yield per recruit analysis, and I cannot imagine that that hasn't been done. Where are we at least relative to these simplest attempts to look at the management and the status of the stock? Has anything of this sort been completed?

DR. MACLAUCHLIN: The review panel, which has been convened twice, and it didn't come to the SSC. It came to the review panels, who are made up of people that have knowledge and expertise with spiny lobster and this spiny lobster. All of the information that is available was presented and reviewed by the review panel, and so it's not that there is information out there and nobody has considered it.

Your review panel considered it all and discussed it extensively, and then that's the recommendation that they made. There's a review panel for shrimp, and there is a review panel for spiny lobster, because they are kind of unique and there are certain folks that have a lot of

knowledge about them, and that's why they're kind of brought in as these sub-panels of the SSC and to give recommendations.

I want everybody to know that it's not that we just said, oh, we only looked at landings and we made this decision. No. There was a lot of stuff. I maybe put links in the overview to the briefing book, but that material is all available for everyone, all the articles and all the information from FWC, the different currents around the Caribbean and some of those genetic studies that are in the works that we looked at. The review panel got all that information, all the information that is available, and there is a lot that would probably be more helpful in making these decisions, of course, but it's not always available, and I also know -- The advisory panels brought up that this is not a priority species for the port samplers, and they would like for it to be, but it's just not. They have to balance their resources and their time, and lobster is not one of those.

That's part of the reason why the advisory panels want more information. They think size is the key and that's what needs to be tracked, but they don't have that information. We have some of it, but that's how they feel like it should be monitored, but it's just that we don't necessarily have the resources to collect that information. Hopefully we can get that.

Then Marcel also wanted me to be sure to point out when the councils requested that exemption from the ACL requirement. We did receive a letter from the Fisheries Service that said, no, it's still required until the MSA changes the exemption criteria.

DR. REICHERT: Before I go to you, Fred, Kari pointed out some of the links in the briefing book, and one of the links didn't work, but, Mike, you guys corrected that, so that now links to the right report, and so just as an FYI. Fred, and then I would like to see if we can wrap this up, because I do have a -- Fred, go ahead first.

DR. SERCHUK: There is no OFL, correct? We don't have an overfishing definition, or do we?

DR. MACLAUCHLIN: Yes, and the current one that's in place is the one that was based on the Gulf SSC Tier 3 that they did in 2011, and that was Tier 3a of the Gulf control rule, and the OFL is currently set at the mean of the most recent landings in the last ten years, two standard deviations.

DR. SERCHUK: Right, but that has no linkage, as I understand it, to the underlying dynamics of the stock. That is my understanding of it. We took what was available, and it was landings, but could you not specify the ACL in a different fashion without reference to landings, or are you committed now, because the OFL is now in terms of landings? Do you have to specify the ACL in landings? In other words, could it not be something in terms of we are going to put the overfishing limit in that no lobster smaller than three inches carapace length can be landed? Then basically say that OFL equals the ACL equals the OFL. I am asking.

DR. BARBIERI: Let me just clarify one thing real quickly. The process right now for specifying ABC, the SSCs have been going with the guidelines, and so basically we are setting -- We are supposed to set ABC, make a recommendation to the council of ABC, based on our ABC control rule, and we have our multi-tiered ABC control rule right now, and so the first is we have a quantitative stock assessment that is Tier 1.

We can either apply our P* or we go to another tier. Now, that process can be modified and updated. Spiny lobster was handled as sort of like a special case under the provisions of NS 1 that allow SSCs to make a recommendation that doesn't necessarily fit explicitly under the prescription of the ABC control rule if properly justified. In this case, since we didn't have a quantitative assessment that would pass review and that was accepted as representing the best available science, the committee then went to another tier.

DR. SERCHUK: I understand that.

DR. BARBIERI: That tier was landings based. Now, there are other things that we can recommend to be done if there are better ways to get there, but I am just giving you the history of why we ended up with this landings-based.

DR. SERCHUK: All my point was, and, again, pardon my naïveté, is that the OFL has no basis in terms of the basis of the dynamics of the stock. That's what I'm getting at. It's a track record. Why not use an OFL that is more related to the ecology or the dynamics of the stock, and that's why I raised the very simple thing of looking at yield per recruit and saying, look, the OFL is you don't take any animals below this sort of carapace size. It's not a stock that we're trying to go to yield and so on and so forth. Then, from that, you could then say, theoretically, the ACL equals the OFL.

I know I'm coming in very late to the process, but what I'm saying is the assessment basically says there is no stock dynamics here that we can control effectively, because, as you said, it's mostly a sink and it comes from someplace else, and so using landings has no connection to stock productivity, none whatsoever.

DR. REICHERT: I agree with that, and that goes back to the ABC control rule. We have done the exact same thing. When we had no other information or the information may be out there, but we only had landings, we based our ABC control rule on landings, and so --

DR. SERCHUK: Mr. Chairman, I presume you were dealing with a production unit that was under, in most cases, the sovereignty of the EEZ, that the fact is that it was controlled within that. You didn't understand the dynamics, and so you couldn't move forward. Here is a case where the dynamics that you do understand suggest that you're not managing a stock unit. You're managing a management unit within the region that's under the control of the EEZ. That's a little bit different now. You have to think about the relative to what are you trying to do from your management program. I know I'm preaching to the choir, but I am just trying to understand the bind that we've got ourselves in here.

DR. REICHERT: Luiz, to that point.

DR. BARBIERI: Just to that point, Fred, I think you are correct. I don't think that our recommendation, and I think this is why -- If you look at the action item for the SSC, I don't think that the recommendation that we have made is static, and this is why we are being asked to provide recommendations for ABC and OFL for spiny lobster as an action item of this meeting.

If there is something that you feel would be superior to what has been proposed, I think that it is a valid point that can be discussed by the committee as an alternative to the existing one, and we can

-- If it doesn't fit into our ABC control rule, I think we can write a justification for why it doesn't, but I don't think we are married, necessarily, to that recommendation, and that's why we are being asked to provide another one, and so I am seeing some flexibility there, Fred, for that to be made.

DR. REICHERT: Just as a reminder, what's the timeline of this action for the council?

DR. MACLAUCHLIN: Since the landings in the past few years have exceeded the ACL and the -- The ACT just triggers the AM, which is to convene the review panel. However, going over the ACL, the council gets notified by NMFS that it's time to do something, take action, and the fact that in the past four out of five years we've exceeded the ACT and, in a couple of those, the ACL and the OFL, the councils need to start at least working on this. They have requested an options paper, the very first draft of this amendment, in December, and they are going to receive all of the recommendations.

DR. REICHERT: This next December?

DR. MACLAUCHLIN: As in like a month-and-a-half, this December. I don't know what happens when the SSCs give two different recommendations, and I don't think anybody knows, for a joint plan that both councils have to approve.

DR. BOREMAN: We have two different action items here. We have one that's in the agenda, but then the one on the slide says just evaluate the recommendations, the OFL and ABC recommendations for spiny lobster. It doesn't say to set them, and so which is right?

DR. MACLAUCHLIN: I guess that, in evaluating, you could say the current one is correct and we don't think it should change, the current one, or you could make a new recommendation.

DR. BOREMAN: Or not. That's what I'm asking, because, in the agenda, it's saying that we review whatever it says here, but it says provide recommendations for ABC, and yet, on your slide, it just says to evaluate the recommendations.

DR. MACLAUCHLIN: By evaluate, I mean you can make a new recommendation or not.

DR. BOREMAN: But what I'm saying is we don't have to. That's the bottom line.

DR. MACLAUCHLIN: That is correct.

DR. REICHERT: That was why I asked about the timing and whether or not we have an opportunity to receive additional information that can help us. If we as a committee don't feel comfortable with the recommendations that came out of the Gulf of Mexico SSC, we can, and I feel a lot of discomfort, and we have discussed it in a previous SSC meeting, relative to what's happening in the population and what's happening with the market and what are we basing our recommendations on.

MR. CARMICHAEL: I guess I'm wondering, what is your level of -- Are you dissatisfied or you don't think it's appropriate or are you more confused and don't understand? I guess that's what I am trying to figure, where the issue is.

DR. BOREMAN: I missed part of the discussion, but I am confused, and I sense that there is a need for more information here before we can provide an alternative ABC, and so all we can do is evaluate the pros and cons of the Gulf's recommended ABC.

DR. MACLAUCHLIN: The review panel -- What you are saying is that you want all of the information and presentations that the review panel received, and so their recommendations -- You do not accept their recommendations?

DR. BOREMAN: I am not saying that. I'm saying that if we are being asked to provide an ABC that we will need all of that information, but we're not being -- I am still trying to find out, are we being asked to provide an ABC or are we not? Do we have the option of saying we are not in a position to provide an alternative ABC, period?

MR. CARMICHAEL: Yes, you can say that. You are being asked to consider the recommendations of the review panel and note if you agree with them or not.

DR. BOREMAN: Fine. That was the basis of my original question.

MS. LANGE: My question was the same. It's very clear in our overview, where we always list actions, to provide recommendations for ABC and OFL for spiny lobster. That's clear, provide recommendations, but you're saying now that it's not really what's in our agenda, in our overview, and it's based on the slide that was presented to us that says to evaluate, and I guess that's --

DR. ERRIGO: You can recommend that we don't have enough information to give an ABC and OFL at this time, or we agree with the presented ABC and OFL recommendations from the review panel and we recommend those as the appropriate ABC and OFL, or we recommend a different approach, or we recommend the Gulf's ABC and OFL. Those are all viable options.

DR. REICHERT: What I am hearing from the committee is that we have considerable concerns with this approach and that we are not comfortable recommending the use of the time series of 1991 to 2015/2016 for an ABC or OFL calculation for spiny lobster, and we as an SSC would like to receive more information, so we can be better informed to provide a recommendation for ABC and OFL for spiny lobster. Then, before I go to you, Sherry, I think it's very important that we say what specific information would we like to receive in order to help us develop an ABC or an OFL, and that goes back to the earlier -- Some of the information may not be available to help us make that determination, but I will open the floor.

DR. S. LARKIN: As someone who participated in this process, I don't agree with what you just said. Do we rehash the whole entire panel here and now? That's not something I was necessarily prepared to do. I am confident in this. I am confident in the Gulf SSC's recommendation, and I concur with that.

DR. REICHERT: Okay. Thank you for that, and I am just trying to work through our recommendation, ultimately.

DR. SHAROV: Can I then ask you to please summarize, in as much detail as possible, what are the principal arguments used by the Gulf SSC to provide these recommendations? So far, what I have heard was that they decided to extend the reference period based on which they will calculate

the overage landings in order for it to be more representative of the population dynamics and the fishery dynamics.

In principle, the idea is understood, but how you define that period and why you believe that all of a sudden this extended period becomes more reflective and why you would not go back to the 1980s or 1976 and use the whole time period -- You would think then that would be even more representative of the dynamics of the stock and true average productivity. There has to be -- I hope they have used good arguments, but, unless we know what they are, it's really hard to evaluate this recommendation.

DR. MACLAUCHLIN: I was just going to comment on the reason why 1991/1992, that time series, that is when the trip ticket system went into place. There was reporting before that, and so there is a little bit of information. However, it wasn't standardized. In general, that was -- This is the time period, and that was the first year where the trip ticket information is considered to be reliable.

DR. BARBIERI: To Alexi's question, which I think clarifies a lot, Alexi, I think it would help, Kari, if you can put the Gulf ABC control rule, and you had a slide of that there, up on the screen. What happens is, in applying -- As I explained to Fred, in applying the ABC control rule, either we have a quantitative assessment that is accepted or we go to another tier, which is like ours. The options are a landings-based, average landings or some modification of a landings-based, catch level recommendation.

There have been a number of meetings in the beginning of the development and application of this control rule to different stocks that had to determine what reference periods would be used for the landings. Starting in the 1991/1992 season, as Kari explained, has to do with the implementation of a reporting system that is considered to be reliable.

Because before, back in 2010, since there wasn't really a whole lot of information about what had caused that decrement there in landings, or the decrease in landings that came up in 2000, the committee had decided that that could have been -- There were discussions about a virus that was impacting, and I have a paper here that I can send out to the committee as well, that was impacting the population of spiny lobster, and that was believed, potentially, to be impacting survival and recruitment, and therefore explain this change in landings.

That could have been then considered a regime shift in that system that decreased the productivity of the stock. At that point, the committee had set the reference period for the landings to start after the decrease in landings, starting in 2000, because, if that was the new normal, if that was a new state of the population, then we couldn't reference all the way back to the early 1990s.

Because the landings have, over the last five years or so, been progressively increasing, the ACL, ACT, and the OFL have been exceeded, and so the council is basically requesting us to go and take a look and say, okay, what are the things that we can do to provide ways to better manage this fishery so we don't have these catch levels, landings, that exceed ACT, ACL, and OFL. As part of this, there was a working group, and Sherry participated in that process, that evaluated a lot of this information and those recommendations, as Kari presented, were put forth.

Then, of course, that information come to the SSCs for final review and approval, and so it's basically -- The original question here was, okay, do we accept expanding -- Is the period of low landings now -- Is the population recovered to their original state? Using, of course, a landings-based catch limit there for the lower landings is going to cause that to be exceeded repeatedly, and so the idea is do we want to reevaluate that recommendation of ABC, OFL, and ACL based on the total landings time series or not?

I think that that was the original idea. However, Fred, if I understood correctly, you are proposing the use of a different method, and my interpretation, and we're going to have to discuss it, but my interpretation is that that is fair game. If the committee feels like well, yes, we accept that this is what has been used and this is what the two SSCs need to coordinate on, but here is an alternative method that we think provides a better metric, then I think we would make that recommendation and go back to the Gulf SSC, or maybe have a joint meeting to discuss all of this and eventually reconcile our advice.

DR. SERCHUK: My intervention was not to overturn conventional wisdom, particularly when that conventional wisdom has been informed by lots of expertise. I would be remiss to say that, not knowing anything about the resource, that I could give you an ah-ha moment. I don't think I could do that. On the other hand, I am concerned using landings as a proxy for abundance.

My first question would be is, if you're using landings as a proxy for either productivity or abundance, has the size composition of the landings been the same all the way across or have the size compositions changed? There is one thing that average landings can say. Well, back then, we were taking lots of small animals, and now we're only taking big animals, and so you're really getting a very different picture of the productivity of the resource with respect to landings, and that would be my first question, and I don't know that.

I don't know when the minimum size went into effect, and I don't know how that skewed things. Those are all the sort of things I think when you're talking about, at the first stage, about looking at using landings as a measure of stock productivity, which is what you're doing when you're going to an OFL, need to be examined. I presume they were examined, but I don't know, but I think, if you're going to go forward with that, you at least should evaluate the assumptions behind using landings as a metric for looking at overfishing.

DR. SCHUELLER: In the 2016 panel report, at the bottom of page 1, it says it was discussed that the spiny lobster fishery is likely growth overfished, and so that gets straight at Fred's point. It doesn't say when that was or what was used to make that statement, but that statement has been made, and so what are we supposed to do with that? The panel is contradictory. They're saying it's growth overfished, and therefore we're going to increase our ACL. That doesn't make any sense.

DR. MACLAUCHLIN: There were different opinions on the panel, and that's why there wasn't a consensus for the recommendations. That statement came from one person, but we didn't have consensus, because there were different people coming at it in different ways.

DR. REICHERT: I think the discussion that we are having here is reflecting that same thing.

DR. S. LARKIN: I don't know where the growth overfished statement came in, but the minimum size for this stock has not changed. It has been in effect since the 1980s or the 1970s, and they are not harvesting larger individuals. They might be harvesting them for the live market, but my understanding is they still are all at the same size, because they're cannibalistic. If you put a big one in with a small one, they're going to kill each other, and so I think -- We talked about the percentage of this.

The number is like 95 percent of them are at the minimum size, and so the minimum size hasn't changed, but I just thought when they pitched that ten-year horizon, a lot of the discussion was what are all the external factors that might explain low landings, and we've talked about some of these economically-driven reasons why fish aren't harvested, and it's not a fish, but the lobster, and three of them that came up during this period were that there were a lot of storms that took out a lot of traps, because all of the effort is traps. The price of lobster was really low during that period, because of import competition, and that gas prices were really high. Gas prices being high and the cost being high to go out on a trip resulted in fewer trips, and so that was just three of them.

DR. REICHERT: Before I go to others, George was a member of that review panel.

DR. SEDBERRY: The 2015 panel, and Sherry and Kari were there. Really, when you look back on that, we had the world's experts in that room, from academia and from the state and from the feds, and we reviewed all the stuff that Luiz is sending out to us now. That has already been reviewed and already went into their recommendations from that review panel, and then the Gulf SSC has, I think, provided a better metric, in the time series part of it, and, to me, the people that really know this fishery have already met in a room with each other and come up with this, and I don't know what we can -- There's still a lot of questions that we don't understand, but we don't know much about this fishery to begin with, and the people that do have already answered those questions, and we should go with what they recommended.

DR. BUCKEL: Sherry, just for clarification, I think it might help with the yield per recruit and growth overfishing, and these are -- There is no market demand for those larger ones. They don't want the larger spiny lobster, because they're tough, and so, here, it's that minimum size. Like you said, 95 percent are right there, and the economics drive that. Maybe if you did a yield per recruit and it says you need to go to a four or a four-and-a-half, nobody wants those larger ones, and is that right?

DR. S. LARKIN: I don't know how undesirable they are, but there is so much import competition, and there's such a strong market for them at the minimum size that that's what the result is.

DR. SEDBERRY: I got the feeling for this Chinese New Year market that happens in January and February that they do want the smaller ones, because they're easier to ship. They can ship more, and they are selling them per lobster, and so the minimum-sized lobsters are the highest value.

DR. BOREMAN: I am just trying to move this committee in some direction here, but, based on what George said about you had the world's experts there and this is their collective judgment, what we're being asked to do, I don't think we're coming up -- We're not experts here, by any long shot, but we're being asked to evaluate the best judgment that the world could find on these species, and so I don't see any compelling reason right now to question that judgment, because I'm not an expert. A few others are, and so what are we really being asked to do here?

I think we're being asked to evaluate the process by which that judgment and those recommendations came and say, yes, that was a reasonable way to get to the end. You brought all the experts in the room, and they hashed it out and this is what they came up with, but for us to evaluate the science behind it, I think that's difficult, if not impossible, here, especially given the time of the day and the time of the meeting. Either we punt this and say we're not going to make any opinion or we say we don't have any compelling reason to dispute the advice coming out of the 2016 panel and let it go at that.

MS. LANGE: Based on the ABC control rule, they have followed the rule. In there, it indicates that they can use a different time series if there is a reason to. From what Sherry and George have indicated, the review panel, again the experts, have determined that there is no reason not to use the extended period, apparently, and so I think there's no reason for us to contradict their recommendation, although we may want to add that further study be done on some of the other biological information that we know could potentially inform a future decision.

DR. REICHERT: Thank you, yes, and, when other information becomes available, we can adjust the ABC recommendations, when appropriate.

DR. SCHUELLER: I guess I am debating whether I should say what I am thinking, but I will say it, since Fred turned my microphone on. I fully understand that there was the world's experts on this particular species discussing things. Great.

Their panel report has some inconsistencies in it that are hard to reconcile without additional data, and, using an example from menhaden, that can be sort if -- In my opinion, and no offense to any of the folks here, and you know what I'm talking about, but sort of this expert review, and we have been interpreting this particular paper for the last thirty years in this way, and, well, guess what? In the last benchmark assessment, we said, whoops, for thirty years you've been interpreting this paper incorrectly and it changes everything. For me, I don't think that it's a problem for us to question the experts, because that's how science is done and that's how it moves, and sometimes mistakes are made and we just roll with them, because that's how it's been done. I will get off my soapbox now.

DR. REICHERT: Thank you. If we do that, then we at least need to indicate where we would deviate or justify the deviation from the current recommendations, and we have indicated some of the uncertainties and some of the information that we are lacking, and so I'm going back to -- That's why I brought up the earlier consensus statement. I am going back to a consensus statement, and, if people disagree, I encourage you to provide input into the report to that point.

Based on what we discussed earlier, at this point, it's the consensus statement that, after discussion, we agree with the recommendation that was brought forth by the Gulf SSC to use the time series as listed on the screen right now, which would result in the recommendations that are currently on the screen.

MS. LANGE: Rather than saying we agree with it, can we say that we find no justification to disagree with it, or is that just too convoluted? We have no additional information, no knowledge, no basis, to suggest it should not be the recommendation.

DR. REICHERT: I think that may be a little too convoluted. However, we should put in our report, and Chip has made the comments or the notes. We should list there the concerns that we are currently having, and I would say that we need to provide, currently, the council with a recommendation. The way I see it right now is either -- I think there is three options, but I think what I was hearing is that the consensus is that we recommend that we take over the recommendation from the Gulf SSC, then we can run it through our own ABC control rule, and then we can say we cannot make a decision, because we need more information.

As we heard earlier, and I don't want to rehash that discussion, but it's very unlikely that we will receive more information soon that provides us with a better recommendation. Having said that, as I said earlier, when other information becomes available, we can certainly adjust our recommendations to the council. Any comments or questions?

DR. SERCHUK: Just one question, Mr. Chairman. If you're going to use landings as a measure of productivity, that's fine with the assumptions, but why would you incorporate a period in which you had regulations that are constraining the catch? Why would you use landings during a period in which you had limits imposed, even though you might have exceeded the limits? Why would you use a period that you had management regulations that actually tried to control the catch?

DR. MACLAUCHLIN: I don't understand. They're in place, and they have been in place.

DR. SERCHUK: There is a period in which there were no regulations on the catches, and is that correct, during this entire period?

DR. MACLAUCHLIN: There was no annual catch limit.

DR. SERCHUK: That's exactly right, and so what you're saying is the catches therefore reflected either the effort that was applied and the underlying productivity of the resource. If someone comes in and says you can't catch more than 2,000 pounds, and you catch 3,000 pounds, then you're saying, well, that's also a measure of the resource, and it isn't. It's a measure of the management system that's in place that is controlling the catch. That is very much different from a time period in which anyone could catch as much as they wanted and as much as they wanted reflected the productivity of the resource and the effort that was applied. I am just trying to understand why you would include a period in which there was management controls.

DR. MACLAUCHLIN: Okay. First of all, you can have a number that's your annual catch limit, but there is no in-season closure. At this time, there is no actual action that takes place. There is no in-season closure, and there is no early closure. The accountability measure, unlike with a lot of our finfish species, where you have an in-season closure when they hit their quota, et cetera, you don't have that with lobster, and so, right now, it's just a number that we use to convene the -- It goes over this, and we convene it.

DR. SERCHUK: It's just not a number. The people that are participating in the fishery know there's a number out there.

DR. MACLAUCHLIN: Yes, they do, but the thing is that it --

DR. SERCHUK: They don't pay attention to it?

DR. MACLAUCHLIN: It doesn't affect their access at this time. They don't know it until August of the next year.

DR. SERCHUK: But they know there is a number, and they know there could be a consequence. My question is that's real simple. In a period in which you're using landings as a measure of resource productivity, it's not the same as using a number in which a period has a cap, whether the cap is an absolute cap or a soft cap.

DR. REICHERT: Sherry, I will give you the floor, but that is only true if that cap indeed changes the behavior of the fishery, but, Sherry, maybe you can --

DR. S. LARKIN: It's an interesting point, and, actually, where I thought you were going is you would look back to the period before the trap certificate program was put in place, because that limited effort by individual folks, immediately, and so you would go back pre-1991, and you would look at the period. I am not recommending that, but I'm just saying that there is -- We normally think of caps being an aggregate total cap, but individual caps were put into place in the early 1990s.

DR. SERCHUK: I didn't mean to waylay the decision that you were trying to get at, whether we should accept it or not.

DR. MACLAUCHLIN: Like when the annual catch limit went into place was like around here, when the landings kind of started to go up. Are you saying that is it a possibility that, because they knew that there was a number, that their behavior changed and they tried to get higher?

DR. BOREMAN: I suggest we just use this as another question we have about the recommendation and try to move on.

DR. REICHERT: Thank you, and so I want to go back to what I said earlier. Can we use that as our consensus statement? Does anyone disagree with that at this point?

MR. COLLIER: Right now, on the board, I have concur with the Spiny Lobster Review Panel and Gulf SSC recommendation for OFL and ABC.

DR. REICHERT: At this point, yes. I have Luiz, and then I have Amy, and then I have Alexi.

DR. BARBIERI: I know that Kari brought this up earlier, and I'm sorry if I missed it, but what is the urgency, from the council's perspective, to get this issue resolved? I am bringing this up because what I am feeling is that there is some level of discomfort within the committee. We don't really seem to have a consensus. This could go through and everything is fine, but, if we can discuss this further at another meeting, where we can basically send out all of the information and provide people with the opportunity to propose different metrics or reevaluate this whole thing, I think we might have a better level of comfort. Now, if the council needs to get this resolved in December or in March to move forward with this, that's a different story.

DR. REICHERT: That was the question I had earlier.

DR. SCHUELLER: I am wondering about that too, but, even if that's the case, we have had webinars to talk about specific issues. If there is urgency -- I mean, there has been a number of things brought up by different panel members that they would be interested in seeing, and I don't see why we couldn't have a webinar where that information was presented and then we were able to have a further discussion, because I agree with Luiz. I don't think that this group is on that consensus statement, or maybe I am alone with one or two other people, but that should be reflected in this document.

DR. REICHERT: I completely agree, and that's exactly why I am bringing this up, so we can hopefully move forward.

DR. DUVAL: Just in terms of I think whether or not there is any urgency to the council addressing this, as noted in your overview, we are supposed to see an options paper at the December council meeting, and I think the issue is that we have triggered accountability measures twice now, and so, by exceeding the ABC, we have triggered our accountability measure.

Our accountability measure is to convene the Spiny Lobster Review Panel, and there are some constraints within Magnuson that require the councils to revisit the measures that they have in place if you have triggered those more than once. I think this probably, in terms of urgency, is probably a question more for the Regional Office, and I don't know if Shep can shed any light on that. I don't think it's going to be a big deal if we delay this by one council meeting, but there are some Magnuson implications here.

DR. MACLAUCHLIN: If you wanted to bring this back and to have all of the information that the review panels have reviewed and take a half-day or a day or whatever, and that's how long it took the review panels to kind of go through everything, and possibly make new recommendations for how to calculate these measures, I assume that -- I guess you could have a webinar, but I think it would delay it for a couple of meetings.

You also have to understand that this is a joint amendment, and so we work with the Gulf Council, and they are ready to move forward, and so I'm sure that some delay will change their workload and timeline also. I understand that it would be awesome if we had all the information that we wanted to really look at the stock status and everything for this and we had an assessment that the SSCs accepted as the best available information, and we don't. Similar to your ORCS species, we're using landings here. We're using what we have.

When the SSCs made the recommendations before and they were looking at -- This time period is what they based it on, and they said because this is the most recent time period, and so we think this is the new normal, they didn't go back those ten years. Here we are over here, and definitely there is something different happening, and maybe this is the new normal. It's been going on now for four years and, whatever it is, the availability of the lobster changed in some way, the effort changed in some way, the fishermen are getting better, and please don't think that this is the only thing they fish for.

In general, those guys go out in August, September, and October, and they're hitting spiny lobster hard. As soon as stone crab opens, they switch to stone crab. If stone crab is doing well, they will stick on that for the rest of the year. If it's not doing well, which happens sometimes, there is issues with stone crab, they go back to spiny lobster, but whatever they're doing in January and

February, their spiny lobster again closes down at the end of the March, and they're king mackerel and yellowtail.

Their effort depends on what is going on in those other fisheries that they're working with throughout the year, and so that could also be the case. Apparently spiny lobster has been doing great, especially since that new live market opened. It's been better than stone crab, and it's been better than king mackerel in January and February, and so they're sticking with it.

It's actually in the minutes where the SSC said that we don't want to use this time period and we want to use this -- We don't want to use this for our back period. We want to use this one, because we feel whatever is going on, this is the normal. This is the condition. Now, its been a few years since that's been in place, and things have changed. That's what I -- I think the ACL is meant to evolve with the fishery, and it's being indicated here that something else is going on, and so maybe the normal for the fishery is, over a period of twenty or thirty years, is to do that, and you could probably see that in the other data that goes back further.

MS. LANGE: Okay, but back to a topic or an agenda item that we covered a short time ago about setting up SSC sub-panel reviews for things. Here, we have two people from our SSC who participated in this full review, and we're not -- Some of us are -- I guess, to me, that should have been brought up right at the start, so that we as a committee would know that the review panel included some of our members and we could have asked them specifically, from the start of this discussion, why they felt this was appropriate.

If we can't do that for this particular review, how does that bode for us using sub-groups in the future, if we have a future need? Again, I think it would have been helpful if it was identified that George and Sherry had participated in this review panel, so we could have immediately asked them questions, rather than going through this hour of maceration that didn't really go any further.

DR. SHAROV: I think my answer to Anne's question would be the amount of information that is made available to the SSC. I am willing totally to agree that the review panel was comprised of the best scientists that work on these species and that there were reasonable arguments used by the Gulf SSC to come up with these recommendations, but we are a Scientific and Statistical Committee, and we are supposed to review the data, review the information, and evaluate it and provide advice. There is no information for us, or for me at least, to review here. The only recommendation that I hear is that trust us, the best scientists in the world reviewed this and developed this recommendation. Maybe they did, but then you don't need to ask us to do an evaluation and to provide recommendations without a sufficient amount of information.

For example, the recent increase in the harvest, has it been a result of the increase in effort? Has it been a result of the increase in the settlement and recruitment? Has the fishing mortality changed or not? Has the fishing mortality been excessively high in the early period of the high landings or not?

Unless something of this sort, or at least the summary of what the review panel had looked at and discussed and how they came up with this conclusion, if I had a paragraph or two or three that clearly stated what went into this discussion, then I would have said, yes, I have sufficient information to understand what has been discussed and how they arrived at this conclusion and I agree or disagree or whatever happens, and I think that the only reluctance at this point is that we

are given pretty much, with the plot and the current OFL and the new OFLs, which are now 30 percent higher, and we are just being told, well, somebody else has already reviewed it and agreed that this is an appropriate way of doing it.

That's the only reason that the reluctance is there, that we don't have sufficient information to say, yes, this is logical and, yes, this is well supported. Had it been presented, I don't think we would have spent that much time in discussing this.

DR. REICHERT: Thank you, Alexi. I would like to give Shepherd an opportunity and then Sherry, and then I am going to recess for lunch, and then we will wrap this up after lunch.

MR. GRIMES: Thank you, Mr. Chairman. I was just going to point out the performance standard that's in the National Standard 1 Guidelines, which is what I presume has triggered all of this. If catch exceeds the annual catch limit for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be reevaluated and modified, if necessary, to improve its performance and effectiveness, but keep in mind the ACL is to prevent overfishing.

If there is no problem with overfishing, you've evaluated it, and maybe there is no need to change your accountability measures, and you would do what the Gulf Council has indicated here, not withstanding the overfished comments that were in the report. I don't know anything about that, but, if that's okay and you're comfortable with it, then you would make your recommendation.

The statute does require that the SSC provide a catch level recommendation to the council, and that's what then becomes the cap on where they set the annual catch limit. Just to some of the language you discussed earlier, saying we have no objection to another SSC's catch level recommendation is not the best record, and it's not a ringing endorsement, at least, and it's not a strong record for having provided your own catch level recommendation to your council.

I should apologize in advance for saying this, but one of the things I haven't heard in this discussion, and I worked extensively with the South Atlantic Council and the Gulf Council and even the Caribbean Council back in 2009, is we implemented a size restriction, an import restriction, for Caribbean spiny lobster, back in 2009, that prohibited all these small lobsters that we had been importing for many years, and there was a lot of discussion about the size of recruits.

Recruitment in the Pan-Caribbean region was down, because a lot of these small lobsters that had never had the opportunity to reproduce were being harvested, and it seems to me that that's an important piece of this whole puzzle and information that would have been included and discussed, and so I will just mention that.

DR. REICHERT: Thank you, Shep.

DR. S. LARKIN: I think my comment really goes back to process. I don't think as being a member of this, and maybe George can correct me, but when we went to the review panel, our instructions were to come up with a brief summary of our report, and so we did. We didn't realize that our review would be reviewed, and so I guess, in moving forward, even thinking of John's suggestion of having workgroups, at what point do we trust these workgroups?

If these panels that can be convened need to develop a SEDAR-like document and come in here and give a presentation, so that we're more credible, we just need to know that. We didn't know that. I mean, I'm kind of flabbergasted that there is this different level that this report should have been and so it doesn't meet some kind of criteria that we're looking for. If, moving forward, we do have workgroups and there are more panels, and there is going to reviews of the reviews, then we need to know that going in. Our first workgroup happened eighteen months ago. It was like in March of 2015 when we first started doing it, and we've had webinars since.

DR. REICHERT: That's the last word. We are going to recess for lunch, but I agree. If we do that, then maybe there is no need for a workgroup, because that's basically duplication of work. The other thing is a lot of the information that we are talking about was available in the previous briefing book and is available, in terms of the links, in this briefing book.

DR. MACLAUCHLIN: The links to the reports are in there. However, I will send Mike links to the briefing book and the minutes, and you guys are welcome to review all of that information. I know, obviously, you can't do it for that meeting, but you can take a look at that and see what the review panel reviewed before they made those recommendations. It's all available.

DR. REICHERT: Yes, it would be good to make that available, but I believe a lot of that information, and correct me if I'm wrong, was available in our May briefing book, and so the -- George.

DR. SEDBERRY: That's just what I was going to say, in addition to what Sherry said. The details and the report were distributed in the May briefing book, when Kari gave us a very similar presentation back then.

DR. REICHERT: We are going to recess for lunch. Then we will come back and then we are going to wrap this up after lunch. Then we will move on to our other agenda items. It is 1:30.

DR. ERRIGO: I just wanted to let everyone know that I emailed out an Excel document with the size composition of the catch for spiny lobster from the assessment. It's graphed out in bar graphs, so you can see what the size distribution is in the landings.

(Whereupon, a recess was taken.)

DR. REICHERT: Welcome back. I looked at my notes, and I formulated at least two consensus statements, because I thought at that point that's kind of where the committee was, and, in both instances, again looking at my notes, the committee wasn't willing to move forward with that consensus statement.

I feel where we are now, and I mentioned earlier that I really want to wrap this up, is that it seems like the consensus is that the committee, at this point, is not able to provide a recommendation to the council. Then we can ask for additional information, so we can make that recommendation the next time, or we can, if the committee so desires, set up a webinar to provide the -- Depending on the urgency of our recommendations for the council, we can potentially do that via webinar. Again, based on my notes, that's where I feel we stand. As I said, we need to wrap this up relatively quickly, because we have a number of other agenda items that we need to go through. Kari, do you have any additional information?

DR. MACLAUCHLIN: What I am hearing is that at a future webinar or meeting that the SSC wants all of the information that the review panel has looked at and review and go through all of that, and so you guys are committing a day or a day-and-a-half to this for your next meeting or a webinar.

DR. S. LARKIN: Okay. I guess my two-cents are that it had always been my understanding, when there were separate webinars and we met after that, the information we were given is sort of an FYI of here is what happened at the webinar and not, okay, now it's open for review about what happened at the webinar, and so my understanding is this process we went through with this panel was about the same, that the intent wasn't to come back here and get a review of what we did, because clearly what the panel came up with wasn't done with the intent of it being scientifically reviewed, which is why you had statements about growth overfishing that wasn't in any way related to how you all talk about growth overfishing here. That wasn't the nature of the comments. It was one idea that was thrown out. That wasn't a conclusion. That wasn't a scientific conclusion. I guess I am suggesting, if this is the new normal, then whenever we have webinars, and when we come back here and meet, then it's a whole different process.

DR. REICHERT: In addition to that, and I agree with you, but, earlier this meeting, we were talking about the workshop and a smaller group. If it is the desire of the committee to re-review that review, then that construct may not be necessary, because that means that we will have all those issues that are reviewed and potentially summarized in that smaller setting and, if that all comes back here, I feel that that may be a waste of time. Now, I want to separate the process from where we are in terms of our recommendations to the council. Luiz, is it to the first or the second point?

DR. BARBIERI: I don't know, Mr. Chairman, but thank you. I am running a little behind, and so I may have missed the first five minutes of discussion here, and I am thinking out loud, but I am trying to propose perhaps a third approach or a different way forward here, perhaps, as a suggestion. One thing that could be done is a package, a folder, with all the supporting documentation, all the papers.

I have a lot of information on my hard drive, presentations that were given at the stock assessment review panel meeting, the SEDAR back in 2010, papers that have been published since then, that summarize some of this information. The original stock assessment report was distributed to the group, and so we could basically supplement that information and schedule a shorter type of webinar that, instead of having all those discussions, basically would be more decisional in nature and sort of visit or revisit some of these action items that we are discussing here, but that would give folks who haven't had the opportunity to review all of those materials to have those available for their review, so we can have that discussion when everybody is better informed and they have their concerns addressed, in terms of all the background information and all of the informational pieces that go into this. That's just an idea to kind of shorten the webinar meeting and perhaps not have to have everybody revisit everything if that's not needed.

DR. REICHERT: That is in support of the recommendation that I had, that at this point we cannot provide a recommendation to the council, but we will address this point in a webinar and then we can find out what information is available and what information is critical and have that discussed at the webinar.

MS. LANGE: Whatever you think is best, Marcel, but I think that we had a process. My concern, again, as I stated earlier, was that we were not informed of our committee representation on that. I am comfortable with going forward with a recommendation, as I stated earlier, to follow the recommendation from the Gulf, but with the caveats that we think there are some additional things that can be done and that they should not be ignored in the future. It's maybe time for another assessment or something like that, but this is a data-poor stock, and they have followed their terms of reference, the tier, that is appropriate for the ABC control rule. They followed that, and it says in there that they could use other years, which is what they've done.

From what both Sherry and George have indicated, they did, at that meeting, or that webinar, go through the rationale for choosing different years. That was not clear to me during the presentation, but, in the discussion of this SSC after the fact, it became clear to me that those things were done, and so whatever you want to do, but I would support recommending that we follow through, with the caveats that additional work be done in the future.

DR. REICHERT: Anyone else?

DR. SHAROV: I don't think that we need a full day of additional webinar to review all of the available information. Nobody had asked for this, but, in order for us to agree on OFLs and ABCs, we do need sufficient information to base our decision on this and feel comfortable. There are generally two ways of doing this. Either we do this on our own, which means reviewing all the raw information that comes into making that decision, essentially doing our own quasi-assessment, or whatever you call it, or we base it on the summary of the analysis that has been done by others.

Had we been presented such a summary, as I said before, either what the panel had discussed and what their principal points are, and what the principal points of the decision-making process of the Gulf SSC were, and this could be one page or two pages, if they sufficiently addressed major questions, which we normally ask in setting these issues, we will be totally, completely satisfied, probably, and be content and confident that we provided good advice. Just the information is not here at the table, and that's the only reason that we're uncomfortable with doing so. If such a summary could be produced quickly, we could have done this via email or via maybe a half-hour conference call or a webinar, and that's it.

DR. AHRENS: I just would like to agree with what Alexi said. I think I support that. I would also be comfortable with language that said we deferred to the decision instead of agreeing to the decision.

DR. REICHERT: Where in the report are you talking about?

DR. AHRENS: I thought General Counsel just told us that we had to make a recommendation and we can't just make a statement that we defer to something. Either we make an ABC recommendation or we don't, and, if we don't, then the one that we have existing stays put, right?

DR. S. LARKIN: Can I just ask a quick question? We have based a lot of these decisions on landings alone for a lot of stocks, right? Why is this any different?

DR. NESSLAGE: The decision you guys came to makes no logical sense if this is a complete sink population. You should set it to the highest historical landings record, and don't keep shooting yourselves in the foot and having to reevaluate these ACLs all the time. That's why we want to see how you came up with that. It doesn't make sense if it's landings only and it's a sink stock. It makes no sense.

DR. S. LARKIN: Can we look at the landings? The point is looking at highest landings, but it's the time period, and so I guess I'm confused. We talked about an ad hoc time period was set the first time around. In the most simple sense, all we're redoing is looking at the time -- We didn't pay much attention to it. It wasn't that important of a stock. It's not one that we're concerned about, relative to other stocks, and so it was set with we have a couple of years to go back and revisit it, and now we're coming back and revisiting it, and so it's just a tweak in what years you're looking at, right? I guess I really don't understand all this controversy with this one, I don't.

MR. GRIMES: What I had said earlier is just that, and it wouldn't be my decision, but if you're going to make -- You need a catch level recommendation in order for the council to set a new annual catch limit. If you don't provide one, then they can't move forward with it. I think you don't have to do it at this meeting, but, at some point before then, you would need it.

Just saying we have no reason to doubt the Gulf Council's recommendation, in my opinion, is not very much of a record to move forward with as a catch level recommendation, and there would be a lot of litigation risk associated with doing that, and General Counsel's Office would probably not advise moving forward based on that record.

DR. REICHERT: Thank you for that clarification, and that's why I propose that at this point we feel that we cannot make a recommendation and we get additional information and have a webinar. At that point, we can provide a recommendation to the council, and so that satisfies, I believe, the point that you were making, and then the issue will be the timing of that advice, and that depends on when it's critical to the council to receive those recommendations from us, correct? Again, I want to wrap this up. I don't want to restart the conversation that we had prior to lunch, and so that's why I -- Luiz.

DR. BARBIERI: If we're going to have -- I just wanted to clarify to Genny that I think she raises some good questions about, if this is a sink population, why aren't we setting the maximum catch ever, and this discussion has been had before, and even though there is --Eventually, when you get the papers showing the genetics and showing all the dispersals, you're going to see that this is really the case.

Since there is a lot of information really supporting this idea of a sink population in Florida, there are, at the same time, some issues that have to do with the role of spiny lobster there as an ecosystem component, for example, and so it's trying to integrate, meaning leaving enough animals behind or some level of animals that can continue, since they are there naturally and have been integrated as part of that ecosystem for a long time.

The idea here of proposing a catch level would be not to remove everything, in the sense that everything that we remove there is more coming behind, but to allow a high enough level of landings that, since there is no real concern about long-term sustainability or recruitment

overfishing, but, at the same time, not removing everything, as might be more in a yield per recruit type of approach.

It's leaving some animals there, but allowing a high enough level of catch. You may disagree, and this is fine, but I'm just saying those are the rationale issues that have been discussed both here and by the Gulf SSC. Am I remembering this correct, Eric, because Eric was involved in some of the ecosystem issues.

DR. JOHNSON: Luiz, you're correct. That was one of the concerns. The other was obviously this idea that our population might be a source for some other sink, from that perspective, but, yes, definitely.

DR. REICHERT: I believe that's the point that George wanted to make, and I just want to make sure that I wasn't skipping you. Scott, and then I go back that I really feel that we need to wrap this up.

DR. CROSSON: I see that there is a lack of consensus in the group here today, but I just wanted to note that this is reminding me of the wreckfish discussion we had a few years ago, where we had a very data-poor stock with a large number of the species that were present in our area that had come in from another area, and so what we did have was it was obviously part of a much larger population that was sinking through the area and then leaving again, perhaps, and so the traditional stock assessment models are very poor at predicting a good ABC recommendation. Instead, we actually had very good economic analysis showing what's driving the catch, our different economic conditions and different marketing conditions.

I don't think this is as dire as what we did with wreckfish, but there's a substantial difference here in the ABC recommendations, and I am certainly very comfortable with going along with the Gulf recommendation. I thought Luiz just made a wonderful point, just discussing what the rationale was about making sure that you have sufficient animals in the local population that you're not upsetting the ecosystem, but taking into account the larger population of the whole Caribbean area that's feeding into this. If we don't have a consensus on this, we don't, but, again, I wanted to note that. There are economic considerations that you can bring into account here, and the analysis has been done, and so I would like the committee to keep that in mind.

DR. REICHERT: Okay, a couple of things. The composition of the review panel was in the documents that were linked in the briefing book, and so that was there. Thank you for that. It's my understanding that the council would like our recommendations by December. If we are going to do this by a webinar, because we cannot come to a consensus this meeting, we need to come up with a timeframe for when we are going to have that webinar, which should be done sometime before the deadline for the briefing book, so that information can get into the briefing book.

MR. CARMICHAEL: That's impossible. The briefing book really needs to be to us by the 15th, I think it is. We've got to everything in hand. The earliest we could do this meeting would be four weeks from now, which is the 18th, and so there is no way we can have it for the regular briefing book. We would have to get an exception to provide your recommendations after the fact.

I would just throw out one thing. If the thought is, for the various reasons said, the ACL this committee wants to recommend is the highest observed landings, if you were to do that, the council

has always has the option of going lower, and so you wouldn't be affecting their ability to maybe go along with the Gulf and what the review panel recommended.

I would keep that in mind, and so maybe, if the objection is that maybe it could even be higher, perhaps we can live with what we have right now as a consensus and make some recommendations on how to be more robust in dealing with spiny lobster in the future. That's a very different situation than if people were considering recommending something much more conservative, which would create a different problem.

DR. REICHERT: Sorry. I forgot the notification period.

DR. MACLAUCHLIN: I am so excited that you all have actually committed like two hours to talk about spiny lobster, because you never do, and it's my favorite. It's really excited. I would have provided the information, and I didn't think that it would go into this much depth, and I would have put the links to the briefing book materials from the review panel into your overview, so that you could have taken a look at that. It would be great to get a recommendation, even if it's not consensus, or with the opposition opinions, but I don't know how else to do this, except that it's going to slow down the process of the amendment, because the council can't really move forward.

DR. REICHERT: That is another option, to come up with a recommendation with a minority opinion. I am looking at the SSC, because I have now put on the table a couple of options for the committee, and I would like to get some feedback or some input on what the committee desires. If we do the webinar, we need to organize that as quickly as possible and then come up with the type of information that we would need to make that recommendation to the council, or we can make a recommendation and allow for a minority opinion in the report and in our recommendations to the council.

DR. BARBIERI: I still think that -- Traditionally, we have operated by consensus, and that would be my preference. I think, as long as we keep the timelines in check here, distributing these materials, all the background materials, setting up a folder with all those materials, would not be that difficult, and, that way, people can read through the stuff and review all of that and have a different level of comfort. Then we can schedule either a conference call, or it doesn't even have to be a webinar, or a webinar, and then we can address the one action item.

DR. REICHERT: That's the reason why -- That was my preferred option, and so that's why I brought that to the committee, but since Kari brought another option, that's viable, too.

DR. SCHUELLER: John has given as out, right? We can get an exception to getting this in the briefing book, and so I agree. I think we should have. I mean, I know we need to Federal Register notice this, and so the earliest can be November 18 or whatever. That's fine, but, in that time, I think these folders could be put together.

Really, what Alexi said is spot on, which is if we had been provided this with a summary statement outlining A, B, and C, and here is our weights of evidence for what we're doing and our justifications, it would have been a lot easier to get there, and so maybe that document can be included with this stuff, just a fuller, informative, scientific statement of why the decisions were made, because, right now, I don't know, and that is, I think, the big problem. It's not necessarily

that I think it was a terrible decision, but I don't know if it was a good or a bad decision. I just don't know.

DR. REICHERT: Thank you. I've got Luiz, to that point, and then Sherry.

DR. BARBIERI: Just it would be helpful, I think, because a lot of this information, the data and the information content that folks may think is available, actually isn't, in terms of fishing mortality rates, and, I mean, this is a data-poor stock that is being -- Catch level recommendations are being made without a quantitative stock assessment and for which we cannot really estimate a lot of the regular reference points and a lot of the parameters that usually we have available.

It might be helpful if those on the committee who want more information could list -- Like Alexi had mentioned a few things, and I was thinking here that those data don't exist. We don't have monitoring of adults. The monitoring of even the post-larvae, the settled lobster, is in such a small area, and it has been conducted as not a random, stratified or even a randomized -- It's a fixed station for the longest time. Those data were not really considered good enough to be informative for the assessment, and it's another set of reasons why the assessment was rejected. Then I think it would just help you, just like we said, to know what is available and what isn't for that, so that, by the time that you go through the folder, you have that information.

DR. REICHERT: Thank you.

DR. S. LARKIN: Mine was going to be similar. What is the scientific evidence that helps contribute to the decision process? That would be good to know.

DR. REICHERT: Thank you. I think we have a path forward, and we will compile the information needed for the committee prior to that webinar or conference call, but, as Luiz said, if there is any information that any of the committee members' desires, then let us know and we can see if that's available or not, and I think it would be useful even to say that we don't have that information. With that, I think we have a path forward and we can move to the next agenda item.

DR. ERRIGO: Does November 18 work for everybody? We can't really wait much longer. That's already past the briefing book deadline. It's a Friday.

DR. REICHERT: I am not available. Who is not available for the November 18? Of course, several of the SSC members had to leave the meeting. I am not available. George and I are at the same meeting at that time.

DR. ERRIGO: Maybe the 21st?

MR. CARMICHAEL: That's Thanksgiving week, just so you all are aware.

DR. ERRIGO: Right. That is Thanksgiving week.

DR. REICHERT: I am unavailable.

MR. CARMICHAEL: What about the 28th?

DR. REICHERT: I am not available. It's not that I'm not available, but it's just that it's the end of the semester, and I have a number of student defenses scheduled at that time, and so that's the reason why I am not available for a variety of those dates. Sorry.

DR. ERRIGO: Perhaps then the 28th, the Monday after Thanksgiving week, the week before the council meeting.

DR. REICHERT: Can we perhaps send a doodle poll out, rather than trying to figure out the dates here at the table?

DR. ERRIGO: Yes, but I just want to just let people know that those will be the dates that I will send out.

DR. REICHERT: If I am not available, I will ask George to chair the meeting. If both of us are not available, we may ask Luiz to chair that webinar, if you are available, and so, between the three of us, one of us may be able to chair that meeting.

DR. BARBIERI: I would be glad to, Mr. Chairman.

DR. REICHERT: Thank you. Okay. That was the last point on this agenda item, and let's move on to the next agenda item. Where are we? Snapper Grouper Amendment 41, that's the mutton snapper analysis, and we have Myra here to provide us with some information there. This is Attachment 31, Amendment 41, the mutton snapper analysis, and I want to remind the committee that this is the last time that we will have an opportunity to comment. The council is taking final action, final approval, I believe, at the December meeting. The action item is to review and comment on any actions, as necessary, and, again, keep in the back of your mind that the council will have the final action at the December meeting. Myra, thank you for being here with us today.

14. SNAPPER GROUPER AMENDMENT 41 -- MUTTON SNAPPER

MS. BROUWER: Thank you, Marcel, and so hopefully this won't take very long. Basically, what you have as the attachment is a list of the actions that are being considered in Amendment 41, the council's preferreds for each one of those actions, what the current regulations are, and then a write-up for the recreational analyses that was conducted by Mike Errigo and a write-up for the commercial trip limit analysis that was conducted by Dr. Mike Larkin in the Regional Office.

I don't intend to walk you through the results of the analyses. Mike is here to answer any questions you might have. It's pretty straightforward. I will remind you that you did spend some time, I believe it was during your May meeting, talking about hogfish, and mutton snapper is a situation similar to what we had with hogfish, where the council is looking at increasing the minimum size limit, and there were implications with the specification of ABC, because the council wanted to specify the recreational ACL in numbers of fish, and so recall that Chip Collier and Mike Errigo put together a methodology that you reviewed and approved back in May, and so the council is following the same approach for mutton snapper, and so they're going to go ahead and specify the ABC, based on the projections, in numbers of fish and then apply the methodology that Mike and Chip put together.

Mainly, it's a methodology that preserves the sector allocations and allows for the specification of the recreational ACL in numbers of fish, and so, as far as your attachment goes, here is the list of actions and alternatives. This is the summary that we have in the front of the amendment. It's just pretty boilerplate sort of thing, specifying the MSY, specifying the MSST, revising the ACLs based on the results of the new assessment, and, as you know, the terminal year for that assessment was 2013, and here we are just now taking action on updating those fishing level recommendations.

There is nothing really that is very technical or that requires a lot of discussion. One thing that I wanted to also bring up is the council worked very closely with the FWC to make sure that the regulations were compatible, and this is obviously to make sure that regulations are going to be the same in state waters and in federal waters, and so the FWC has already taken action, and the current preferred alternatives that the council has selected are to match what the FWC has already approved, and my understanding is that that final rule will become effective January 1 of 2017.

One of the things that the council and the FWC did was to formally designate the spawning months for mutton snapper, and this is for regulatory purposes, and so there is this Action 6 that designates April through June as the official spawning months, during which possibly stricter regulatory measures would be taken to protect the spawning mutton snapper.

This is basically all I have to say. There is the tables that show you what the ABC would be, and the council would take action to adopt these various ABC values according to the projections. Then there is all the details of the various analyses that were conducted for this amendment. If there is any questions, I would be happy to answer them.

DR. REICHERT: Thank you, Myra. Are there any questions from the committee? Any comments from the committee relative to the document and to the presentation? Seeing none, then I would say that we reviewed the document and the presentation and there were no further comments on any actions by the committee.

MS. BROUWER: Thank you.

DR. REICHERT: Thank you, Myra. We appreciate that. Our next agenda item is the Council Workplan Update, and I believe Mike will inform us.

DR. ERRIGO: I think it's either Gregg or Brian, if you wanted to just go over what we're working on.

DR. REICHERT: The attachments are Attachment 32 and 33, which provided an overview of what the council currently is working on. Our action items, there is no specific actions required. This is basically an FYI for the committee, so that we are informed of what projects the council is currently working on, and they are listed actually in the overview.

15. COUNCIL WORKPLAN UPDATE

DR. ERRIGO: This Attachment 33 is the amendment overview, and so what is going on currently and who is lead for them. The system management plan is what Chip is working on, and hogfish has already gone through final action. Amendment 41, mutton snapper, you guys just looked at

that. Amendment 44 for Snapper Grouper and Dolphin Wahoo Amendment 10, John Hadley is working on that one, and that one looks at allocations and quota sharing between the commercial and recreational sectors, to prevent overages and to prevent closures.

Amendment 43, which we went over fairly extensively yesterday, is red snapper. Chip is working on that one. Those are management measures for red snapper. There are two vision blueprint amendments currently in the works. One is recreational and one is commercial. They are in the very early stages. The recreational is going to be looking at the grouper closure and perhaps modifying that, the removal of minimum sizes for deepwater species, modification of the minimum size limit for black sea bass, and the reevaluation of the aggregate bag limit.

For commercial, we've got potentially split seasons for deepwater species, such as snowy, yellowedge, blueline, and golden tilefish, and commercial split seasons for red porgy, to line up with vermilion snapper and gray triggerfish, so that we have concurrent seasons for all those species. Reevaluation of the shallow-water grouper closure, the trips limits and step-downs, as they pertain to traditional bandit boats. There are several things that we're looking at there.

Transports of fillets is already done, and Dolphin and Wahoo Amendment 10, which I already went over, and that's the shifting of allocations. There is nothing for golden crab or coral. Mackerel, these are always in the works, because it takes so long to get king mackerel stuff through, because of the joint management. The shifting of the boundary, because of the last assessment, that one is still kind of going back and forth, some of the management measures there. There is also the Atlantic cobia. There is a lot of controversy with cobia after the shortened season, and so there are management measures in the works now for Atlantic cobia.

There is a commercial logbook amendment and then the for-hire or charter boat logbook amendments in the works. The charter boat logbook amendment should come up for final approval in December, and the commercial logbook amendment is just starting. Then the CE-BA 3 bycatch that has been around for quite a while. We are also possibly looking at limited entry in the for-hire sector. The council just started talking about that at their last meeting. That is what is going on.

DR. REICHERT: Thank you, Mike. Any specific questions of the committee at this point? If not, I would like to move on to our remaining agenda item, and that is the ABC Control Rule. I am glad we are able to actually get to that today, because I think it's an important issue, and I think we will probably pick this up again in future meetings, especially given the recent changes to the National Standards and the phasing in of the ABC control rule, and so that will be ultimately part of this discussion. Let me go back to the agenda item. These are Attachments 24 through 27, and John Carmichael is going to provide us with an overview. That overview is also in our briefing book.

16. MODIFICATIONS TO THE ABC CONTROL RULE

MR. CARMICHAEL: Going over Attachment 26, this is the presentation, with some thanks to Luiz for some slides of a similar talk they had in the Gulf, more about control rules and where to go. There's some of that, and them I'm trying to capture the discussions that we've had around this table for a couple of years now about some issues within our ABC control rule and building

on the report that Steve Cadrin gave at the last meeting from the ABC Control Rule Working Group we had operating there for a while. Really, the hope is that we can get some leverage under this thing and get the changes and consideration of changes for the control rule that we need to have done.

As we know, the control rule, we have to have one. It's specified in the Magnuson Act that we have a mechanism for specifying catch limits, and the idea of the control rules is that they're specified by the council, as we've talked about here this week, about having control rules within fishery management plans, and that's done by the council and informed by the SSC. It's specified through the Magnuson with the FMP comments as well as the National Standard 1 Guidelines that we have.

The question is, looking at Dr. Rick Methot there, talking about what is the role of the SSC, and the SSC does obviously have a role in doing this, and there was an ACL science workshop quite a long time ago, and I think the last time I asked Rick about that, they still hadn't gotten the final report, which is unfortunate, because there were a lot of interesting discussions at that workshop.

Laying out the SSC's role there, as we know, the SSC informs the development and evaluation of policy. That's what we do. We provide recommendations on that. The council is supposed to evaluate the risk and decide the risk tolerance, and we provide information on what the risks are. Then you have the rule and you implement that each year.

Our control rule goes back to 2008. It started with the language of having dimensions and tiers, and so there were four dimensions that were evaluated, and there were tiers within each one of those that gave you a reduction, a buffer, essentially. The intent was that this was all-encompassing, which means that the plan was that it would address all types of assessments. It would deal with the fully quantitative assessed stocks that have the P* analysis, but it would also have the flexibility that it could have information to deal with unassessed stocks, and so that's why, for example, you get into things and it ranges from not having catch to having a full-blown stock assessment within a single dimension.

For the assessed stocks, it was P* focused, and the idea is adjusting that probability of overfishing based on whatever those scores were, and one of the key points is that it considers the assessment uncertainty and the risk tolerance simultaneously, and that is an interesting point, because, as I've said, the SSC deals with the assessment uncertainty side of the thing and the adjustment and the buffers for assessments, and then the council deals with other buffers and the council sets the risk tolerance level, and so both were kind of folded in there.

That was acceptable at the time, and some of the things that have come up over time though, however, that say maybe we're not so comfortable with some of those dimensions that really address more risk tolerance, or maybe we are. It kind of seems to vary from assessment to assessment, actually, as we apply this rule to different assessments.

Here, it just gives a nice graphic that Luiz had done for his Gulf presentation that kind of shows the overlap here and really where this risk overlap between the assessment and the management fits in with our control rule. Within our control rule, the Dimensions 1 and 2, that's assessment information and uncertainty characterization, and they really do get directly at risk assessment.

Then we have the stock status and the stock productivity, and they get at the risk management, and, thinking back to recent reviews of stock assessments, those have been the ones that have probably caused us the most hiccups. Within the assessment information and uncertainty, I think we have some issues with the amount of resolution we have to capture different types of assessments, but, within these two, we sort of struggle sometimes with what we want to do, and the stock status, in particular, is one that is causing us some troubles these days, which I think I talk about more down the road.

Just a summary of how this works. We get the probability density function of overfishing occurring, and we have the OFL and the ABC, and there is some P* area that is fit within there. OFL starts at the 50 percent probability and then we reduce from that. Within our control rule, we gave a range of forty points, and so that means we could end up with P* recommendations of 10 to 50 percent.

The idea of the modifications behind the South Atlantic control rule are, as I said, we started in 2008, and it's been kind of added together and cobbled upon over the years. In 2010, we added an addenda that added tiers to address additional situations, and so this was dealing with some more detail on the data-limited or the catch-only type of situations, and one of the things that I kind of don't know how we did this at the time, but we used the word "tiers" to describe these different levels. You had Tier 1 was assessed, Tier 2 was one level of data-limited, Tier 3 was another level, and Tier 4 was catch only. We already used tiers within the dimensions, and so that was kind of a -- We should have had Fred, maybe. He probably would have caught that and we wouldn't have used that same word for two meanings at the time.

Then, in 2011, we did another addenda. If you recall, this was the decision tree. We had the discussion earlier about OFLs and not having OFLs. The key thing that we were told at that time was that it was okay to have a stock for which you don't have an OFL as long as the SSC has had a discussion and made a case for why you didn't think you could have an OFL and couldn't recommend an OFL.

Really, by some inspiration from John Boreman, we developed this decision tree, which the SSC used to go through and evaluate stocks, and that gave us a basis that was acceptable from the legal standpoint of that we addressed that need to evaluate the information for the stock and build a case of whether or not you could actually recommend an OFL.

Well, soon after that, in 2011, the ORCS thing finally bore fruit. That had been going on for quite a while, since maybe the second National SSC Workshop, where that idea popped up. We finally had the report at that time, and we wanted to add that in for our catch-only stocks, and so we had two things now in our catch-only Tier 4, which was the ORCS and then the decision tree. All of this is in this SSC control rule document. We have the original control rule and how it came to be with these series of addenda in it that describe the changes in it over time.

As many things tend to over time, it sort of gets cobbled together. In 2014, we had a workshop to look at the control rule itself. We considered control rule performance and new methods, and the idea was to try to say, okay, how many stocks have we applied the control rule to and how has it performed, and the challenge, at that time, was really getting enough stocks that have had a control rule applied, had the information put through in a management plan, had those regulations take effect, and then had the stock assessed again.

That takes a long time, as we know. It takes a long time to write the regulations, and it takes a long time for them to start having an impact on the population, and then we have to go in and do the assessment and get that peer reviewed and get it back to you, and so the bottom line was it was really sort of hard to evaluate that at that time, just based on a few observations, but there was a lot of discussion on modifications and things we could do, and recommendations were made for revising the tiers and dimensions, for dealing with some of those language problems, as well as some of the issues in that first dimension that would limit our resolution. There was a workshop report, and you were provided that as well, that laid out those things.

In April of 2015, we reviewed that report. The committee said that it was interested in adding flexibility and addressing social and economic information a bit better, and so we created a sub-committee to try to work on that and draft a proposal for modifications.

This past May, the sub-committee reported. They again tried to look into the evaluation of performance, hoping that maybe some more stocks had been assessed, and a few more had. Overall, they felt they were hindered by the lack of robust assessment evaluations of how it performed, but they did say it seemed to be, in a lot of cases, working as expected. They did suggest some changes, such as removing stock status.

If you will recall, sort of simultaneous to all of this, there has been discussions about who it is that actually determines stock status, and it's the agency that determines stock status, and the process is do an assessment, and the peer reviewers and the assessment provide a recommendation on what they think are appropriate benchmarks for the stock and what the condition of the stock is and what the status could be, based on that.

You review that, and you consider your control rule and your knowledge, and you make further recommendations, based on what you actually think MFMT would be and MSST. From that, you give a recommendation on what you see status as being, and then the agency takes all of that, and they're the ones that actually make the determination of this is the status of this stock, it is overfished or it is overfishing, and that's important, because, within the Magnuson Act, there is deadlines on acting on such information, and those deadlines start when the agency writes a letter.

As you can see, it's important to sort of know where the buck stops and who does that and at what time, and that's why the agency makes that determination. What the SEDAR gives to you and what you then give to the council and to the agency are all recommendations, and the Magnuson Act makes that clear with SSCs. Everything you do is a recommendation. They can't exceed your recommendation on ABC, but it's still a recommendation.

That has created a bit of problem, because stock status is in your control rule. You have a situation where you use the stock status that you perceive and apply that in the control rule. You give one P*, but, if the agency were to take a different tack on the stock status, and they have in gag, on the basis of what had happened from the terminal year of the assessment to the time the recommendation was made, considered the council's actions and how they performed. In that case, it didn't have an impact. It didn't make a big change in the status determinations and in the P*, but, in some cases, it could, but it certainly creates a problem where you're now using a status and applying it in the control rule, and it may not be the status that ultimately comes out of the

assessment. That could change the P*, and that could change your ABC, and so that creates a bit of a problem.

You talked about it, and the council has also talked about it as well, and they believe that you should remove stock status from the determination. Remember that stock status was one of the risk things that the council deals with, and so that's another thing to keep in mind when we consider status.

The report from this group was provided in the discussions we had at the last meeting, and the SSC -- Kind of like here, unfortunately, this came up late in the meeting, and people were already tired, and some people had already left, and we needed to get through this and we probably didn't get as much as we could, and there wasn't any specific guidance provided by the SSC on dealing with the control rule.

Taking all of that together, I have tried to go through this and think about how we can start getting, as I said, some leverage on getting this to move along and figure out what we need to do to clean up the control rule. I looked back at all that history and what has been talked about since and what types of things came up during assessment deliberations, where folks were dissatisfied with aspects of the control rule. One of the things that stood out to me was the discussion of those PSA scores. There are some stocks where you didn't think the scores were appropriate, and you struggled with your rule that says you will use this PSA evaluation that was done by the MRAG group a number of years ago, and so, to me, that's been a sticking point with you all. You're not really satisfied with that.

Some people aren't even sure how that was created or even satisfied maybe with some of the decisions that were made. NMFS wasn't, in fact, and NMFS came up with their separate PSA evaluation shortly after we were putting our control rule into place, and they took a very different approach on missing information. They treated missing information as missing in their scoring, and the MRAG tended to treat missing information as an opportunity that they would apply something conservative in its place. There has been a bit of a controversy around that PSA all along.

I mentioned the stock status and the PSA, and I think if we do end up changing those in Dimension 3 and Dimension 4, then, if we end up addressing these, as I said, we're going to have to clarify how these address the council's risk tolerance and management, and that is separate from the uncertainty evaluation.

I think the council will ultimately weigh in on how satisfied they are at the present time with this kind of simultaneous consideration of risk and uncertainty. They may be okay with it, and we may be as well, and I think that will be fine, just as long as everyone has their eyes wide open and understands what we're doing, and I think you as a committee needs to be happy with particularly dealing with stock status and the PSA analysis that we have if we choose not to make any changes on these two.

The third item was Dimension 1. Remember this goes back and dealing with assessed stocks, and it has catch adequacy in there as one of the things that is scored. Based on the tiers that we added in that addenda, Dimension 1 really is only going to apply to a stock that's had a full assessment, and so it doesn't make sense, necessarily, to consider catch adequacy, whether or not you have

reliable catch, when you're actually evaluating a stock assessment. We have other components now that address those unassessed stocks, and so this is something that's in there, but it's not ever being used.

Then, in Tier Level 1, we may consider softening a requirement for using a P*. Really, it specifies that, but we've had situations where the assessments didn't provide a P*. I think some of the ones done by FWC used a slightly different approach and ones done in the Gulf. King mackerel came to mind, recently. That had a slightly different approach, and I think the wreckfish assessment had a slightly different approach.

I think what we're realizing is that this was built around P*, but there is other ways of getting PDF functions, and so maybe we don't want to purely specify P*. Now, we can deviate, as we've mentioned before, but, if we were to soften this language, the advantage is that we wouldn't have to justify that we're deviating from our ABC control rule, in some situations.

I think we need to revise the tiers and levels to address the new data-limited, and mainly this is because what's in there specifies DCAC and DB SRA as separate tiers. At the time, those were kind of the leading edge, and those were two leading methods for doing data-limited assessments, and there is a lot more that's been done since then, and there is probably more things to come in the future.

I think the idea of taking those out and maybe combining it into just general data-limited approaches would be better, and so the bottom line on this is really, rather than using those tiers from that first addenda, it's suggesting that we have levels rather than tiers, to remove that language problem, and that they be simplified a bit so we have comprehensive catch-based assessments that are evaluated. Then we have data-limited approaches without specifying the specific tool or technique, and then we have the data-poor approaches, and that would get into things like ORCS and the decision tree.

Another issue that's come up is needing to clarify application to rebuilding stocks. Our practice and our discussions have been that the annual ABCs are based on the rebuilding schedule. The council sets the rebuilding schedule based on the probability of success and how they choose to go about rebuilding the stock. They could base it on F or they could base it on landings. They have leeway in determining the rebuilding time, and so they have a lot of decisions to make on rebuilding.

What we have done is said, once you get the rebuilding endpoint, based on the input from the control rule, the council then builds the rebuilding schedule, and we use that as our evaluation of ABCs. Those rebuilding schedules are updated when assessments are updated, but this isn't listed in the control rule anywhere. It's been our practice and precedent, and I think it would be helpful to list it.

Then, finally, all of these changes mean that we will probably need to revise our scoring, because our intent was to provide that forty-point range, and P* is ranging from 10 to 50. If we make some of these changes, that's going to affect the scoring. If we change the assessment dimension, we may have to change the scoring within that. Then, within the document, it lays out a number of ways that I propose that we could consider going about this, such as kind of a menu-driven thing,

where we look at the issues that have been discussed in assessments and say, did it do this or did it do that?

That's when we get into the details, and that's going to be a little bit tough, but it would be nice to know if we're considering making a number of these changes before we jump in with both feet into how we actually go about these changes. That's the last slide, Marcel.

DR. REICHERT: Thank you, John, and I think we all realize that this is not something we would probably accomplish within this meeting, but one of the things that I thought of that's important is I think, once we do this or when we are considering the rescoring, to have an opportunity to compare the decisions that we've made in the past using this new scoring and the old scoring and to see how consistent our new scoring is relative to our old scoring, and that goes back to some of the questions relative to we now have a new method, and does that now provide an entirely different ABC? Would that result in an entirely different ABC recommendation to the council, given our new scoring?

I think that would be, I think, some important information for us to have. That was one of the things that I thought of when I was looking at the document. With that, I would like to open the floor to comments or questions and discussion relative to the document and the overview that John just provided.

DR. BELCHER: The one thing that kind of hit me as a conversational point was with the modification that John had listed as Number 3, the Dimension 1 removal of catch adequacy. This might be more germane as we start working into these stocks that are predominantly recreational, as we're talking about red snapper and the PSEs and whether the PSEs are really allowing for that to be usable, and this may be something that we might actually want to think about, because I mean, obviously if it's a commercial fleet, we have a lot more certainty in those limits, whereas, if it's predominantly recreational, we're not going to have that same confidence.

DR. REICHERT: Thank you, Carolyn, and one of the other things that we probably need to discuss is there were very specific reasons for those who were not involved in the original ABC control rule development to some of these scores, and so that may be another conversation we should have, whether we are still comfortable with the choices we made for the overall score and how we divided that up between different tiers. That is perhaps an additional conversation that we can have. Any other comments or discussion points?

DR. BUCKEL: John, thanks for putting the document together. It's nice to have all the changes that have been made in one place. I just wanted to clarify the removing of stock status. It seems like that's an important risk tolerance, and is that going to be handled then at the council level? I guess I'm just wondering about the process, if that's -- You're saying we just don't get it in time to be able to include it with the P*, or is it something that the council could modify that P* once they get that information?

MR. CARMICHAEL: We kind of don't get it in time. Certainly we could add the time to get that to the process, but that would add even more time to a cumbersome process, and so we've not thought that was ideal, and so, yes, maybe there is a way that there's a portion of the control rule -- Maybe that risk tolerance portion of the control rule the council does more directly itself, and I think that the control rule expects the council has some way of evaluating its risk tolerance.

I think when we did the ORCS that we put risk tolerance options to the council directly, and the SSC didn't try to recommend what they should be, and the council went through that in ORCS and established a risk tolerance level for different stocks based on different things, and so, yes, I would see it being something where you could maybe transfer the stock status over to the council in a risk tolerance and your ABC would affect the assessment uncertainty, and that could give them a way then to drop down to apply the buffers, such as for ACL, if they chose.

Right now, we tend to set ABC equal to ACL, but that's because the SSC took care of both assessment uncertainty, which is, by definition, the reduction from OFL to ABC is assessment uncertainty, but we took care of that and the risk tolerance within the ABC calculations, and so, yes, I think retaining that and maybe transferring that over to the council for a decision for them to make more explicitly could be something we recommend.

DR. BUCKEL: Thanks, and, similarly, for the PSA approach, do you think that's a -- Those are both the risk, and so I guess I would see -- That's really how I read things before, and so we were wrapping, as you said, both into the P*, but now it would just be the uncertainty would be dealt with in the P*, the assessment uncertainty.

MR. CARMICHAEL: I think if we did the PSA that you might want to go through the effort of updating it, and, if you set up scoring based on that and categorizing stocks on their PSA level of risk, that you may want to revisit those analyses and spend some time looking at the inputs and how they were scored and maybe look back at that question of the NMFS versus the MRAG approaches to the PSA and decide what you think is the best approach.

DR. REICHERT: For both of them, I think the committee can provide guidance, in terms of risk of one decision over another, and so, although it's not part of our ABC control rule, we still have the opportunity to provide guidance to the council in terms of what the potential risk of certain decisions and outcomes would be, and so that doesn't prevent us from commenting on whether it is the PSA or whether it is the stock status, in terms of the management. Anyone else have comments or questions?

DR. BARBIERI: I was going to say that I like the -- I was looking through the document here, the summary, Attachment 24, and I really like the way that this was reorganized, both for the assessed stocks and stocks that had a quantitative stock assessment, as well as the way that this was now -- The language for the data-limited and data-poor stocks is now more generalized, instead of being so prescriptive for some of those tiers that may not really be as applicable to stocks in our region as we initially thought they might be, given the data requirements and parameter requirements and so on. I see this as a way forward, really.

DR. REICHERT: Thank you for that. I want to remind us of the current action items, which are provide recommendations on the control rule revisions, if appropriate and necessary, and see the ABC control rule modification decision document that has the specific suggestions, and provide guidance on the next steps to be taken in considering the revisions to the control rule. I would like to add to that, not to the action, but I would like to add that one of the things that now came about that we should add to the discussions relative to adjustment of the control rule, and that's the stepping up of the ABC recommendations to the council, and ultimately, obviously, as with this

document, that will be a council decision and a council recommendation, but I think our input in that probably weighs heavily to the council.

MR. CARMICHAEL: Marcel, to that, I think the discussion, as we had it here about the step-down and needing to be part of the control rule, it probably elevates this in importance, in terms of the council dealing with it. We've been sitting on it for a while and kind of talking about it without any real action looming or any timeline to get it done, but I anticipate the council will want to take advantage of that flexibility the Act now gives them, the Guidelines now give them, and take some action on the control rule to specify when and how that type of flexibility could be used.

We had anticipated maybe going to the council in June with the decision document, to get started on an amendment, generic amendment, addressing the control rule, and I expect, with the need to deal with that phase-in, that that's probably pretty likely to happen, and so it would be good to get the SSC feedback over this meeting and certainly the next meeting on what that amendment may look like.

DR. REICHERT: One of the important next steps is to -- If the committee agrees with removing the stock status and the PSA from the ABC control rule, how we re-divvy up the scoring over the remaining tiers, whether there is a re-division of tiers. As Luiz mentioned, John had made some suggestions in that document, and then, as I mentioned earlier, what I would like to see is perhaps, if that can be done, a comparison of various options relative to the decisions we made earlier in our ABC control rule.

DR. CROSSON: Actually, just thinking along those same lines, in terms of removing stock -- I would text each of those separately. The first one I would like to take off of there is the stock status, because I think it's covered by other elements of the control rule already, and I would like to see how that changes some of the outputs that we've done with the ABC control rule in the past, and, if we just were to remove that level, how that might change the ABC recommendations that we've made.

The other one about the PSA scores, I am really torn about that one, because I've seen -- I think it was king mackerel is where the PSA score -- We looked at it, and we thought it was really off, and it forced us to make an ABC recommendation that was substantially lower than we thought that the stock deserved, but I do wonder what we can use to sort of get at some of those same elements in there, because there is some value in the PSA scores, but I just don't know quite what to do with it.

When I look at it, certainly in terms of susceptibility, I think of that. It's both in terms of different gears that are being used, and I know part of it also is sort of the market demand, or the consumer demand, for some of those fish stocks, whether it's targeted or whether it's a high-value fish, and so that seems, to me, to be a good place that we could insert something along the social and economic range, but, again, it's something that I have to still think about some more and probably do a literature search on.

DR. REICHERT: Yes, and I agree. The other thing is maybe some of us remember the discussions we had on ORCS, where we had the same issue, in terms of aren't we double counting, and then what are we actually using? I think there were at least one or two other species where, when we were applying the ABC control rule, we looked at the PSA and collectively thought that's not quite

true for the South Atlantic stock or we now have new information available that has significant implications for the PSA scores, and so I do agree. Go ahead, Luiz.

DR. BARBIERI: You brought it up, the double counting and the issues that we had discussed before. You brought it up. Thank you, Mr. Chairman.

MR. CARMICHAEL: Things have changed. There is no life history studies. I think cobia was another one too where we went into the PSA and we modified that, because of new information on the life history of that stock, and there is probably others that are in there that have the same thing. Some of that data, that analysis, has got to be at least eight years old, or it could be older. Certainly a lot of the -- As Scott mentioned, the socioeconomic stuff, due to the Act itself, there's been a lot of changes in that aspect of the fishery that certainly aren't going to be captured. Current conditions aren't going to be captured in analysis from that long ago, and so I think, if we do retain it, we will have to roll up our sleeves and go through that thing in detail and think that we pick the most appropriate choices for today's conditions.

DR. REICHERT: I would argue that even if the PSA ends up not being a part of the control rule, I think it still behooves us to, when we review the stock assessments on particular species, to review that, so, again, we can provide guidance to the council in terms of the vulnerability of a particular stock.

DR. CROSSON: The idea that the PSA scores are not specific to our region I think is just vital. They're these general species classifications, but they may be different in the Gulf and the Mid-Atlantic than they are in the South Atlantic or some other region altogether.

DR. REICHERT: Thank you. Anyone else?

DR. BELCHER: John, I don't know if this is anything that's really been thought about, but how would we go about re-evaluating the weightings? Originally, we had nothing to help inform categories being weighted heavier than others. That was why everything was equal divisions, and I know when we brought the ABC control rule to some of the other councils that they asked those same questions, but what information do we have available to us, or do you feel are things that we could look at that would help us inform shifting weightings? For me, I have a very difficult time with the idea of reclassification of weights without some way to look at the performance of how that assessment is going to happen.

DR. REICHERT: Thank you, Carolyn, and that was exactly the next point I wanted to bring up, in terms of where we go from here. John, do you have any --

MR. CARMICHAEL: I think partially our expert judgment and knowing the things that drive the assessment. If we say we're going to focus on the factors that contribute to uncertainty and we want to capture those, then maybe we think about what are the most important things with regard to uncertainty. That's sort of where I was headed in Attachment 24 with some of the criteria there for the assessment information.

I was just trying to go through and see, well, what are the things that distinguish one assessment from another, because our discussion, particularly when we've had multiple assessments in a meeting, and looked at the few things that we have available to rank them, and I know we had a

discussion with -- I am trying to remember which one it was, but there were two stocks, and it came out the same score, and people were just like, we don't feel these assessments are equivalent, but, based on the criteria, that's where they fall.

We might take something like this list of things and we might decide that some of these carry more weight than others and maybe some get different levels of points, or maybe we score them high, medium, and low with some multiplied by one and some by two, because we feel that some are more critical as an indicator of the overall uncertainty. That's where I thought that the work that Mike did in tilefish kind of, in some ways, shed some light on this situation, because I think it -- Looking at that, it gave all of us maybe a better appreciation for what's kind of driving the P* relationships and the P* outcomes on some of those assessments.

On the other hand, I was kind of encouraged to think that, okay, the P*, at its core, is working, because there is a number of key uncertainties, and, when those are high, that seems to be giving us a higher buffer. That could give you maybe some confidence to think that a little simpler approach in scoring is probably adequate if the P* is really doing what we want it to do. We just get the things that let us distinguish one assessment from another. If our gut instinct is this assessment is greater uncertainty, we should have a little different adjustment value associated with it as compared to another.

DR. BELCHER: Do you think there's a possibility then of like the idea of maybe the category is too broad, in the sense of like appropriately characterizes uncertainty. Well, uncertainty in what parameters or in estimates? Are you better served to break that up, so at least you have that ability to account for it, where otherwise it's kind of confounded into one effect, but yet you know that there's one that should count more than another should.

MR. CARMICHAEL: I think that is. I think the uncertainty we had was pretty broad, and we know that the catch uncertainty varies, and maybe it's a matter, in some cases, of how, as we've discussed with red snapper, how well the assessment configuration can reflect the inherent uncertainty in an input like the catch.

Certainly catch is an easy one, because that's a huge input, but we discussed, in red snapper, having to treat the catch with greater certainty to get the model to fit all the other parameters that it needed to fit, and that could -- The control rule could give us a place to account for that. We could say, well, we felt like, for practical purposes, this data is input as being a bit more precise than we really think is true, and you could address that in the control rule.

DR. REICHERT: A couple of things, because we will be picking this up again at our next SSC meeting, and so we have the documents available that were provided in this briefing book. Is there anything that members of the committee would like to see for information relative to the changes, the proposed changes, in the ABC control rule that would be helpful for our discussions in our next meeting or analysis that the committee may want to see in preparation of the next SSC meeting? Anyone? Okay.

I said that we will pick this up again, obviously, at the next SSC meeting, and probably the meetings following that, because I think this will be a process that will probably take some time, but, between now and the next SSC meeting, is there anything that the SSC members would like

to see in terms of information that will help us reorder or re-score the ABC control rule or analysis that the committee would like to see that will help us guide the discussion during our next meeting?

DR. BELCHER: To the degree that we can have it, and I don't know how hard it is to pull it altogether, but I know the one table that we had worked through that had for all of our assessed stocks what those actual P* values were, if there was a rebuild, that table, at least to let you know where that process was.

Then I know, as we've talked about some of those assessments, the fact that our reports do reflect a lot of that discussion about where we think it might have been deficient, so that people can kind of at least, again -- So I've got mutton snapper, and this is what the P* was, but, in the context of our discussions, where are some things that I should be focusing on in looking at how that tiered process breaks out? Obviously to pull them altogether might be a little bit more of a project, but, at the same time, if you could pick four or five that might be on the extremes and in the middle, it might at least give us something to think about and talk about.

DR. REICHERT: I think that would be extremely helpful, and that may also give us, during our conversations, a direct comparison with whatever our new choices are going to be with what we decided earlier, and so I think that would be very helpful. John and Mike, is that something that can be provided? I saw another hand from someone. Genny.

DR. NESSLAGE: It may be because I'm new to this. If the information is already out there, just point me in the right direction, but is there any quantitative evidence that the PSA actually means anything when it comes to whether the stocks end up overfished or not?

MR. CARMICHAEL: I'm not sure that there is any quantitative evidence. I think is it really reflecting PSA, right, and I'm not sure that we know. You look at the criteria, and you think inherently it should be, but maybe there is other criteria that aren't even included, and, again, I come back to Scott and the socioeconomic stuff. That may have far more influence, certainly on the interest that really can drive that at times, and it isn't included.

I am not aware that there's been any follow-up on that, to try and see how things have panned out since by the group that put it together, and I'm not aware of any even within the NMFS evaluation that was done, if there's been any follow-up. I haven't run across anything in that time.

DR. REICHERT: Perhaps collectively we can take a look at that and see if any one of us can come up with any of that, either in reports or in publications or elsewhere.

DR. CROSSON: I'm going to try and take a look back through the economic literature on data-limited stocks and see what I can come up with, because Tracy Yandle and I have done some analysis of the golden crab and wreckfish fisheries, where they were both published in good journals, and it was an attempt to try and get at what was really going on with the stock using governance factors and using economic factors and looking at the history of the fishery, and we're pretty proud of both of those, and I think, especially with the wreckfish fishery, we came up with a pretty good guidance document. Beyond what we've done though, I know there's other things that have been done, and so I do need to kind of put this higher on my list and get back into the literature. Its' just, on top of everything else, it always seems like there's one more thing to do.

DR. REICHERT: Thank you, Scott.

MR. CARMICHAEL: We can look at the stocks that we've determined to have experienced overfishing at some point and look at those that have versus those that haven't and how their scores were. That could be interesting. Then, where things stick out funny, then we try to figure out why. That's always the most fun part.

DR. BUCKEL: We will get to this, but there is discussion about comparing the old P* to whatever we come up with and maybe re-weighting, but we just have to remember that, if we're moving one thing that was taken out, the stock status, and giving that to the council, now this is truly the ABC and not ABC equals ACL, because that other risk is going to be handled at the council level, and so we wouldn't want to try to achieve the same P*. We would want that buffer not to be as great now, or vice versa.

DR. REICHERT: Yes, and I absolutely agree, and I think I mentioned something similar earlier, and that is something we really need to take into consideration in our discussions, and that may complicate somewhat the comparison that we are going to make between the application of the new control rule and some of the choices we made earlier. With that, unless anyone else has any comments or recommendations or questions, John, does that give you enough guidance for our next meeting?

MR. CARMICHAEL: Yes, I think that it does. There were some good ideas here and some interesting things we can look into.

DR. REICHERT: Thank you.

DR. CROSSON: I have one more question. Does the sub-committee still exist? Steve has left the SSC. No?

MR. CARMICHAEL: I think the sub-committee is probably defunct at the moment. I think, if we were going to have another sub-committee, that we should probably convene a fresh one, if we think it's needed.

DR. REICHERT: I completely agree with that. We can, again, discuss that at the next meeting.

MR. CARMICHAEL: We can compose one of Fred and John Boreman. Fred, we know you will read the minutes and see that.

DR. BARBIERI: Which, by the way, remember this is how Steve Cadrin actually ended up chairing it.

16. REPORT AND RECOMMENDATIONS REVIEW

DR. REICHERT: So there is precedent. With that, we have three agenda items left. Number 17 is Report and Recommendations Review. I think that it's a very important part of our agenda. Unfortunately, it's close to three o'clock, and so, for this meeting, what I would like to do, what I will do, is work with Mike and with Chip and put a first draft of the report together and distribute

that to the members, and I really hope that you will add some of your own notes to that and look at, in particular, the consensus statements and see if they need modification.

I hope that, in the next meeting, we have some time, not only during the meeting, but also at the end, to actually go over some of these recommendations and the report, so we can get the final report together a little quicker and provide that then to the committee and the council. With that, I would like to open the floor for another round of public comments. Is there any member of the public -- Michelle, our Council Chairwoman.

17. PUBLIC COMMENT

DR. DUVAL: I didn't think I would be here, but you all have outlasted me, and so, again, I really appreciate, especially this late in the day, the discussion, at least the little that I've been able to hear, and I am really disappointed that I wasn't able to hear more of the discussion about the ABC Control Rule, but I trust that it will move on to the next SSC meeting, and I look forward to hearing more about that. Again, I thank you all for the robust discussion today and for your efforts, and I hope that we can have robust discussions like this about all of our agenda items for the SSC meetings, and so I just wish everyone safe travels. Thank you very much for everything that you all do.

18. NEXT MEETING

DR. REICHERT: Thank you, Michelle. Anyone else? Seeing none, then I would briefly like to go over the next meeting. The next SSC meeting is going to be in either April or in May, and that depends on the gray snapper stock ID workshop.

DR. ERRIGO: Yes, and so what happens there is if the gray snapper stock ID workshop determines that the stock comes around into the South Atlantic, then that -- I think one of the SEDAR workshops will happen during that April week, and so we would want to move the -- SSC members, we would ask for volunteers, participants, to go there, to that meeting, and so we would want to shift the SSC meeting into the first week of May for that one.

DR. REICHERT: Thank you, and then the next meeting is scheduled for -- Amy.

DR. SCHUELLER: I was just wondering if we don't want to just go ahead and do that right now and just put it in May. That way, it's on everyone's calendars and there is no way that it's going to interfere, unless it's an issue in some other way, but --

MR. CARMICHAEL: The only issue is that that takes away a week for preparation for the report for the council briefing book for the June meeting. As I recall this past year, we did that in May, and there were some comments that we had a shorter review period for that report than people were really comfortable with, and so that's why we're trying not to shift it to May if we can at all avoid it, because it will affect your ability and timing to get your report done.

DR. REICHERT: If we need to move that, I think that puts a bigger emphasis on us reviewing a first draft of the report during the meeting, and so that means that we can get that final report out relatively quick, because I agree with John that that was some of the issues we had in the last

meeting, because it was a relatively late meeting, and it took some effort to get that report out, and so just as an FYI for the committee. Locations aren't known yet, obviously, but it will be Charleston. The hotels is a little too far out, and then there is a list of South Atlantic Fishery Management Council meetings. With that, unless there is anyone else with a last comment, I thank all of you, and we adjourn the meeting, and I wish everyone a safe trip back home. We will see each other, if not earlier, at the next SSC meeting in April or May. Thank you.

(Whereupon, the meeting was adjourned on October 20, 2016.)

Transcribed By:
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DR. ANDY STRELCHECK
DR. MIKE LARKIN
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SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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South Atlantic Fishery Management Council –
Scientific & Statistical Committee Meeting
Charleston, SC

Date: ~~*Tuesday,*~~ WEDNESDAY *October 19, 2016*

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 above.

Name:	Mailing Address/E-mail: *(If your information is currently on file, just check the box.)*	How do you participate in South Atlantic fisheries? *(Check all that apply)*	
Lora Clarke	☑ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ____ *Describe*
Rusty Hudson	☑ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other consult *Describe*
Anne Markwith	☑ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☒ State
		Charter/ For-hire ☐	Other ____ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ____ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ____ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ____ *Describe*

South Atlantic Fishery Management Council –
Scientific & Statistical Committee Meeting
Charleston, SC

Date: *Tuesday, October 18, 2016*

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 above.

Name:	Mailing Address/E-mail: *(If your information is currently on file, just check the box.)*	How do you participate in South Atlantic fisheries? *(Check all that apply)*	
Rusty Mitchell	☒ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other CONSULT *Describe*
Anne Markwith	☒ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☒
		Charter/ For-hire ☐	Other _____ *Describe*
Lora Clarke	☑ On File	Commercial ☐	NGO ☑
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other _____ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other _____ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other _____ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other _____ *Describe*

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
Charleston, SC 29405

South Atlantic Fishery Management Council –
Scientific & Statistical Committee Meeting
Charleston, SC

Date: ~~Tuesday,~~ THURSDAY *October 20, 2016*

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 above.

Name:	Mailing Address/E-mail: *(If your information is currently on file, just check the box.)*	How do you participate in South Atlantic fisheries? *(Check all that apply)*	
Lora Clarke	☑ On File	Commercial ☐	NGO ☑
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ___ *Describe*
ANNE MARKWITH	☑ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☑ STATE
		Charter/ For-hire ☐	Other ___ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ___ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ___ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ___ *Describe*
	☐ On File	Commercial ☐	NGO ☐
		Recreational ☐	Govt. ☐
		Charter/ For-hire ☐	Other ___ *Describe*

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
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SSC DRAFT 18 OCT 16

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SSC DAY 2 19 OCT 16

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SSC DAY 3 20 OCT 16

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